

The magazine of modern homesteading

# COUNTRYSIDE

**& Small Stock Journal**

Volume 97 • Number 1  
January/February 2013

**10 Foods That  
Keep Us Healthy**

**Know Your Dirt**  
Secrets to Healthy Soil

**Plant an “Appliance”  
Garden**

**Plus:**

- Tomatoes 101
- Benefits of crossbreed cattle
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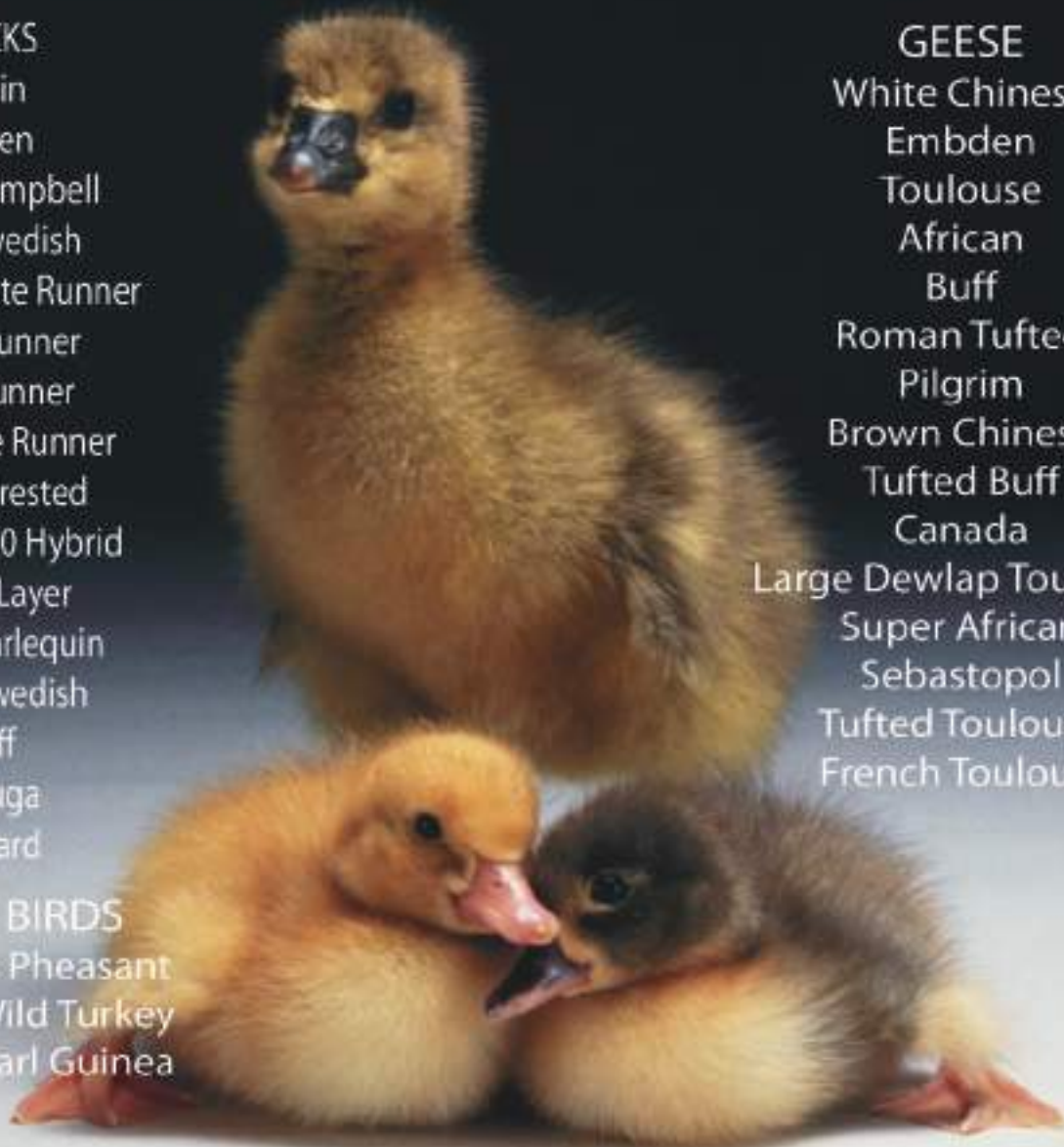
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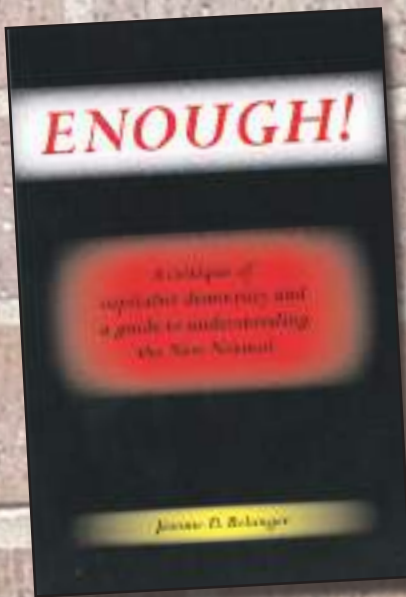


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Author J.D. Belanger — homesteader, former newspaper reporter, COUNTRYSIDE's founder and editor emeritus, and one of the godfathers of modern homesteading — builds his case for the coming challenges we all face.

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# COUNTRYSIDE

In this issue  
Vol. 97 No. 1, January/February 2013

*What's happening this month on your Countryside homestead...*

## Departments:

Country conversation .....	8
Coming events.....	31

## Features:

Energy, economics, peak oil, and population: Part II.....	28
Debunking the over-population myth.....	36
Instant jobs & bartering in challenging times .....	40

## Homestead business:

Succeeding in an offline business.....	42
Fools for profit.....	47

## Crops & soils:

Soil 101: Know your dirt .....	51
Soil health .....	52

## The garden:

Planting an "appliance" garden .....	54
Let's talk tomatoes.....	55

## The homestead kitchen:

Caring for carrots .....	63
10 Foods that keep us healthy .....	64
Preserve rosemary & parsley by drying.....	67

## The horse barn:

The 10 most commonly asked farrier questions.....	68
---	----

## The cow barn:

What is a crossbreed or composite?.....	72
---	----

## The henhouse:

Breeding meat chickens.....	80
-----------------------------	----

## Apiary:

What's happening to the honeybees? .....	84
Monoculture farming can't support honeybees .....	85

## Our Philosophy

It's not a single idea, but many ideas and attitudes, including a reverence for nature and a preference for country life; a desire for maximum personal self-reliance and creative leisure; a concern for family nurture and community cohesion; a belief that the primary reward of work should be well-being rather than money; a certain nostalgia for the supposed simplicities of the past and an anxiety about the technological and bureaucratic complexities of the present and the future; and a taste for the plain and functional.

COUNTRYSIDE reflects and supports the simple life, and calls its practitioners homesteaders.

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***On the cover:***

Canadian geese paddle on a placid country pond near Dayton, Virginia.

*Photo by Pat & Chuck Blackley/Alamy*

When the going gets tough, the tough make bacon..... 87

**The sheep shed:**  
 Urban sheep rearing adventures..... 89

A practical environmentalist ..... 90

**The hapless homesteader:**  
 Once a Marine ..... 94

Poor Will's COUNTRYSIDE Almanack ..... 100

**After chores:**  
 Money schemes ..... 114



*Above: How's your soil's health? See pages 51 and 52 for soil types and fertility suggestions.*



*Left: If you have problems with birds bothering your tomatoes, they'll never aggravate you again with a set-up like this! See page 55.*





*Left: It seems there's never a dull moment on the homestead. We'll bet the neighbors don't have problems with mini sheep (and chickens) sneaking through the doggy-door! See page 89.*


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### Tips for NM off-gridders

*Locale and lifestyle  
aren't without pitfalls*

COUNTRYSIDE: Reply to "live off grid, extra hands needed." We are New Mexico residents in La Luz. We hope that Heather has a lot of money to live on in the next 10 years, and is doing the homesteading thing for a hobby! The plan she laid out in COUNTRYSIDE magazine, if not modified, is something we feel may not leave her self-sufficient in the coming hyper-inflation, economy; she has such a short growing season in her location.

We would like to introduce ourselves to you. Here in La Luz, New Mexico (outside of Alamogordo), we have a half-acre garden and another three-acre farm about five minutes from our home. We are retired on

social security and retirement income. Due to the fact that we have no debts, we can exist on our current income, provided food costs don't triple in price in the next 10 years. In the last 10 years they did. In order to prevent our secure retirement from being threatened by hyperinflation, we have taken our retirement savings and invested in all aspects of vegetable production (growing, harvesting, selling). We have two farms and land to increase our current planting acreage. We have invested in tractors with implements, green houses and a store in town to sell our veggies, as well as other farmers' produce in our area. Our tractor and implements make it possible for two people to farm our current acreage. We have a climate that usually allows for year-round greenhouse growing. Our outdoor growing season starts in mid-April and continues from mid-October to the end of November, before the

winter freeze. We very much enjoy having electricity to run our well to water our farms, fans to keep our greenhouse cool, and to supply our non-essential electrical wants in our home. We are frugal and can become more frugal if a failing economy demands it.

Raising vegetables, even in a small 1,000-square-foot greenhouse, is challenging. To do it without electricity, without a readily available water supply, without pressurized irrigation and, add to that a much colder climate, it sounds like she is involved in a hobby. We are hoping that she is thinking of this greenhouse as a hobby that needs lots of money put into it without getting cash value out of it. There is no price to put on

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health benefits from homegrown vegetables. The cold in her area results in a shorter greenhouse gardening year. To have a greenhouse in her climate and off the grid would simply not be cost effective. It would cost more to get fresh food for a short growing season than it would to have food shipped to you. This is especially true if you see the need to supply workers with essential living requirements in order to have labor to do this. The greenhouse would require a lot of extra money per year, and each year after it is built.


Consider these points:

- The cost of the greenhouse
- The recurring cost of three/ four-year replacement of the greenhouse shell
- The fuel to bring water to the greenhouse
- Winterizing to prevent frozen water lines
- Extra drainage to winterize a simple irrigation system for winter drainage.
- Wind damage repair
- Normal planting expenses – plants and a warm or heated environment to grow from seeds
- The investment in cooling and circulating air with fans in the greenhouse during the summer months

Using solar charged batteries to do this? Will you have enough funds in a few years to re-invest in batteries to supply greenhouse power? Consider that there could be hyperinflation where the \$2,000 off-grid power system could be a \$10,000 off-grid investment. Batteries don't last forever!

In summary, perhaps Heather should consider having fresh vegetables shipped to her mountain-top home, and invest her funds in something that could make her more money than it would cost her to keep up a greenhouse where she lives off the grid. A hydroponic greenhouse is more costly than a traditional greenhouse. If she can afford this hobby, please forgive us for writing this as we only have her wellbeing in mind. We just wanted her to consider these expenses. We have invested a lot of

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— La Luz Farmers

*We'd like a \$2,000 system too!*

COUNTRYSIDE: I was reading the Nov/Dec 2012 issue and there is a letter about people needing an extra pair of hands while living off-grid. It was mentioned that they run their house from a solar system that will cost under \$2,000 installed.

We live in northern Maine and are off the grid. I have looked into several systems. The least expensive system I have found is in the ballpark of \$5,000. We live on a set income — my disability. We have a Quonset-style home. The contractor we hired to erect and install the insulation and interior to basically make it into a turnkey home, walked out with approximately \$20,000 and left us with a shell of a building. We have been trying to recoup ever since. (This was in 2010.)

To give you an idea of our condition, last year's winter was very mild for Maine, and we went through 23 cords of firewood. We have been

seeking help from all available sources, but have been turned down. The last attempt was through a state organization called Penquis cap. It's for low income families and they help with housing issues (insulation, windows, etc.) and energy (appliances). They said we didn't qualify due to not having electricity. I told them we are off the grid and will not ever have mainstream electricity. We have a generator.

This brings me back to the question, where can we obtain a system for \$2,000? — Duane Roberts

Each situation is different. Contact Backwoods Solar (see ad, right) or check the Classified section to ask about systems that will work for you.

**It's going to be a bumby ride**

COUNTRYSIDE: I read John Howe's paper (Nov/Dec 2012 issue) with great interest; he covers a lot of ground and covers it well. I'm a small farmer with degrees in nursing and biology, and have spent much of my life caring for the living and the dying, both the two- and four-legged varieties. My view is not global, but it is pragmatic. I would simply like to note a few of the underlying assumptions inherent in Mr. Howe's analysis. I don't mean to imply any error on Mr. Howe's part; he presented his facts based on the data available regarding conventional agricultural practice, ie: Grow big animals in one place and a big single grain crop in another, planted fencerow to fencerow.

Regarding his statement: "Any draft animal assistance has to be fed from the same land it is working, thus reducing the net food available for human consumption. It takes about 1/4 of a farm area just to 'power' the farm with horses or oxen."

Certainly, this is the case if the farmer is growing grain for draft animal feed, but when sustainability is not a trendy goal but an economic necessity, this feeding of significant amounts of food fit for humans to any farm animal is insanity, pure and

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urban settings tend to be located at transportation hubs and suggests that this should be interpreted as meaning the land is “often marginal for food production.” Yet if that were true, how does one explain the market garden cultures which have existed for centuries around the world’s major cities to feed the urban dwellers? London, Paris, New York City, Rio de Janeiro, Tokyo, Beijing, etc., all have and still do depend on urban market gardens to produce a substantial amount of the basic foodstuffs for their populations.

Mr. Hladik asks where are all these urban farmers who are committed to growing food seriously? I suggest Mr. Hladik do some research online where he may be amazed to see how pervasive urban farming is once again becoming. Websites include the American Community Gardening Association ([www.communitygarden.org](http://www.communitygarden.org)), City Farmer News ([www.cityfarmer.info](http://www.cityfarmer.info)), The Urban Homestead Project (<http://urbanhomestead.org/>), and the writings of a fellow named J.D. Belanger found in his recent book, *A Complete Idiot’s Guide to Self-Sufficiency* (Ed.: See ad on pg. 13), which suggests to the extent we become more self-reliant, as in growing and preparing an increasing portion of our food, we attain a higher level of self-sufficiency. Many folks are jittery enough about the future to acquire and use the tools and techniques of farming on a small scale in urban environments—they may be micro-farmers, but they are farming.

Now to get down to a few specifics in Mr. Hladik’s article which need to be addressed in short order.

Mr. Hladik seems to believe that every urban farmer goes to the big box home improvement store and buys his soil and amendments and plops them down on rocky soil causing “soil mines” elsewhere. Does this happen? Sometimes, but most of the urban farmers I know develop their own compost from household and yard waste. Many get their manure from local stables (the owners are thrilled to have someone cart it off) and some get it from raising rabbits or hens. So mining soil isn’t mandatory

in urban gardens...in fact, integrated systems where water from plant irrigation flows down into pools filled with fish who then fertilize the water which is used to provide the plant nutrients are a good deal less wasteful, show less disease, and better consistency of production than traditional large scale farming practices.

Container gardens can provide just the right amount of food at the perfect time for individuals and families. Urban farmers bury double walled terra cotta pots to prevent too rapid evaporation and rainwater harvesting is reducing the need for piping in relatively expensive water. These are only some, not all, possible solutions to practical challenges – urban farmers are developing new tools and techniques constantly! For folks who only have windows in their urban settings, there are now Window Farms ([www.windowfarms.com/](http://www.windowfarms.com/)) which allow for vertical growth when space is at a premium.

As more and more people flock to urban spaces, I believe the need for urban farming will grow – importing fruits and vegetables from thousands of miles away make no economic sense and certainly are not good stewardship of our resources. I agree that there will always be a need for large traditional farms, or even smaller family farms, given the existing economic and cultural norms, but let’s not rule out the contribution urban farms make to American food security now and in the future. – Marc Kivel, Frisco, Texa

## How things were done in the 1800s

COUNTRYSIDE: In the Sept/Oct 2012 issue, Kevin Hemmert wanted to know how people did things in the 1800’s. Here’s my reply.

I am a bit of a history nut. I have spent many years engaged in accurate historical re-enactment. (Think Ren Faire but with no turkey legs.) So your question about how people lived in the 1800s prompted me to write.

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14 One ungrateful man does an injury to all who stand in need of aid. —Publillus Syrus



Interior view of a dwelling at Jamestown Settlement, Virginia.

before the advent of canning, telegraph, railroads, and sewing machines? Or are you talking late 1800s? If the latter — just talk to any member of an Amish community about how they live. If you are talking about early 1800s — that's a completely different matter. I would recommend visiting historic Williamsburg, Virginia.

There are numerous diaries that have been left behind by the folks who "traveled West" and the hardships they endured; as well as diaries of those who "stayed behind" in the civilized world of chamber pots and chimney fires. Reading these diaries gives a very good insight into how people lived.

Are you interested in the day-to-day life of agrarian people as opposed to those that live in the city? If so — I recommend becoming a homesteader without electricity, power tools or indoor plumbing. Also take away modern medicine (become an herbalist) and learn to recognize gangrene. Go to the grocery store for only flour, coffee and sugar. Grow your own linen (hemp is preferable to flax for durability and comfort), and wool. Learn to spin, weave and knit and use only your own feet (or those of a horse) for transportation. Dig your own well, do your own blacksmith-

ing and starve in the winter when you've had a bad crop year.

If you truly want to live in the 1800's, be expected to have 18-20 children, all born at home, and have half of them die before the age of five because of dysentery, typhoid, scarlet fever or measles. Be prepared to get up with the sun and read by the light of your drafty fireplace. (Yes, the Franklin stove was invented in the late 1700s, but it weighed so much, most folks who went west didn't take it with them. Of course, if you stayed in one of the "big" cities, you would have access to whale oil or kerosene for your lights.)

Be prepared to slaughter pigs and use everything except the "oink." (Think pickled pig's feet). And you had better spend all day Sunday at church.

Let's see — what else — oh yes, hygiene. It didn't exist. There was usually a pan with water in it (that you carried from the well in a bucket) for rinsing your fingers before meals and washing your face in the morning. Everyone washed in the same basin of water. There was one bathtub full of water that everyone used for their Saturday night baths. And ladies — would you like to know the origin of the phrase "on the rag?" Just one of the many uses of the rag bag. I heard

## Take lessons in surviving the economy from 1800s immigrant

### A century ago, self-reliance wasn't an option—it was a requirement, translator says

While the current recession continues to hit millions hard, a researcher says the example of our ancestors should inspire us.

"We have become so accustomed to the fruits of our forefathers' labor that many of us have forgotten just how tough they had it," says Sigrid Wilshinsky, translator of *My Life in America Before, During and After the Civil War* ([www.amazon.com](http://www.amazon.com)). She translated numerous letters from German immigrant Louis Hensel, who wrote about life in the United States throughout the mid-1800s to his German granddaughter, Emma, whom he had never met.

"Reading Hensel's letters is like peeking through a rip in the curtain of history and seeing through the eyes of one who had experienced so much," Wilshinsky says.

That includes meeting Abraham Lincoln in the White House while pretending to be a translator to various Native American tribes; life in New York City in the mid 1800s; training the Union Cavalry as a master horseman; the adventures of a traveling opera company, and various intimate details of an America that was still untamed yet quickly ascending as a world powerhouse.

Today's economic troubles are serious and we don't know exactly where they are heading, Wilshinsky says, "but imagine losing a well-to-do business in France, thanks to a revolution, another in Long Island 10 years later, and yet another in Williamsburg (in Brooklyn) because of illness."

Wilshinsky provides tips for surviving today's economic woes via inspiration from Hensel's example:

- **A jump-starter:** Hensel writes that many immigrants who landed in New York took a few weeks to settle in, sightsee, and get accustomed to city life in America before seeking work. Not him; he writes that after acquiring comfortable lodgings—procured by a friend—he immediately walked the streets to find work, which he found at the end of his second day in the United States.

- **Capitalize on all your talents:** Before fleeing Paris, Hensel had a thriving engraving company. He was able to use this skill to immediately land a job. Hensel continually honed his knowledge in order to work in a variety of capacities, Wilshinsky says. He learned equine veterinary medicine in his spare time, made nightly runs to the fruit and vegetable market in New York for produce sales, joined local theater groups and was hired by the German Opera Company, with whom he traveled the United States during the winters.

- **An indefatigable work ethic:** For Hensel, not working was never an option. While writing his letters to Emma during his later years—he lived to be 91—he discussed life as a music teacher to locals, which meant plenty of traveling. Always an active man, Hensel loathed physical inactivity, and work was a way of life for him.

- **A helping spirit:** Although Wilshinsky says Hensel may have "bragged a bit" about his deeds, he was nonetheless heroic in his aid to others during numerous incidents.

- **An open heart/open mind:** Hensel naturally gravitated toward well-educated people, and he learned from them. He valued honesty and integrity in his business dealings, which earned him trust, respect and a strong network of friends and colleagues.

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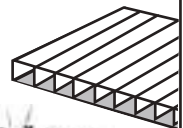
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a nurse tell a story that happened in 1950. An old "bachelor farmer" came into the hospital and had to have both pair of long johns cut off him. He had had them on so long, his hair was growing through them.

Babies wore cloth diapers (if they wore anything at all) and the diapers had to be boiled before hung on the line to dry. Yes, even in the winter. You'd hang them out so they froze, take them down and snap them so the water crystals would fly out, then bring them in and hang them from rope you strung from one side of the house to the other. Clothes for the rest of the family? One dress for momma for church, and one dress for the rest of the week. One pair of pants and a shirt for poppa for church, and one outfit for him for the rest of the week. The rest of the family — hand-me-downs. Clothes were remade and remade until they ended up in the rag bag. Remember those funny pictures of baby boys wearing dresses? Yup! The ultimate in recycling. By the way ladies — there's no underwear from the waist down — but there are chemise, corsets, corset covers, and then a blouse on top, and the skirts were multi layered — up to 16 layers.

**Animal husbandry.** You'd better like being pecked by chickens, trying to solve mastitis without antibiotics, treating thrush (on your horses feet) with iodine, and trimming the hooves of everything that walks. Roosters need their spurs clipped, dogs need their claws shortened and so do cows, goats, horses, sheep and just about anything else you can think of except fish. Don't forget that you should not drink water that is "downriver" from where the animals drink. And if you want your animals to work for you, they need to be fed before you are. You had better have good neighbors to swap seed and semen with. Remember, this is before artificial insemination and seed catalogs. And animals are dangerous. Just because they are cute, doesn't mean they are safe. Horses kick and bite. Bulls can gore you. A pig will eat you. Rooster's spurs are sharp. I do hope you know how to sew up cuts and have alcohol

(that you made yourself) to wash out wounds.

**Housing.** If you are living like a "pioneer," expect a drafty cold house with snow on the bed, no glass in the windows and two rooms. One room is the bedroom, the other is for all other functions, including mending the harness, sharpening and oiling your tools, spinning and weaving, cooking and relaxing in the evening. If you were smart, you put in a loft (heat rises). Up there you will find two beds. One bed is for mom and dad and the baby, and the other bed is for everyone else. Half the heads on the pillows at the "head" of the bed and half the heads on the pillows at the "foot" of the bed. The bed will have ropes tied about every foot going across, and three or four ropes going from head to foot. This is your "box spring." Your mattress will be a piece of thick cloth (ticking) that is stuffed with straw or cornhusks or something of that ilk. The featherbed (if there is one) goes on top to keep you warm. If you are "city folk," you'll have curtains around your bed to help keep body warmth in. You might be smart enough to make a house that has good chinking between the logs. In which case, you have to worry about "cabin fever" — which is really another name for carbon dioxide poisoning, because you haven't opened the door enough to bring in oxygen after the fire and all the people use it all up.

Here's something else you can do in your spare time — boiling the horns from the cows so they can be flattened and used to make into spoons and the "glass" in the lantern. That's after you oil and mend all the harnesses, clean all the glass lanterns of their soot, and drop a live chicken down the chimney to break loose all the creosote. (Yes — I know folks who do it.)

**Cooking.** If you are living "out west," you'll be using dried buffalo dung for fuel. If you happen to live where there is plentiful wood, you get to chop down trees. As in, with an ax. There are saws, but most of them take two people. Look up bucksaw and "Swede" saw. Then you hitch up your horses to haul it out of the woods,

chop it into smaller pieces, stack it and haul it into the house whenever you need heat. (Cooking, keeping warm, keeping the wool warm so it will spin, etc.) Ten cords of wood should last you a winter. A cord is 8' x 8' x 4'. With a chainsaw it takes me two weeks solid to cut 10 cords.

And the only food you have is what you grow or kill. If there is a drought, or a flood, or the locusts hit your garden, or you get sick and can't carry the water from the well to water the garden, you're going to go hungry. By the way, you will probably only have two or three metal pans, a Dutch oven (or something that can be covered with coals), a frying pan and a boiling pan. (For 17 people, remember). Lots of cooking is done in crockery or wrapped in leaves and stuck in the coals. Expect to eat a lot of soup, especially for breakfast. And if it's before the time of Napoleon, nothing canned. It's all fresh, dried, salted, or fermented (think sauerkraut). Hopefully you have dug yourself a well wide enough you can keep stuff cool if you don't have a springhouse or a root cellar. One of the reasons to make cheese is to use up all the milk you ended up with by milking all the cows by hand – after you weaned the calves. Another chore that isn't fun – flour. If you grow your own grain, you'd better know the difference between a snath and a blade and how to sharpen the latter.

Have we talked about shoes yet? Before the American Civil War there were no "left" and "right" shoes. Or rather, they weren't made that way, but after wearing them often enough, they developed "left" and "right." The country songs that talk about getting a "brand new pair" when the kids go off to school is pretty accurate – for the 20<sup>th</sup> century. Before that, you went barefoot most of the year. If you lived in the city and were a lady, you had satin slippers to go dancing in. Yes, satin material. No insole. No sole. Just a piece of satin material sewn into a slipper shape.

By the way, did I discuss disease yet? You know all those vaccines that are pushed on you as a child? All those were diseases that killed

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18A few strong instincts and a few plain rules suffice us. — Ralph Waldo Emerson

or crippled. Polio, measles, mumps, chicken pox, small pox, influenza, diphtheria, tetanus, typhoid, whooping cough, trench mouth, milk fever, goiters, warts and worms. All those and all the “little” problems that we face such as arthritis, heart attacks, and diabetes, were out there with no cure. But there *was* opium! Because of the high death rate among children, the “average” life span was 35. If you survived childhood, you had a good chance of living to be 60 or even 70. But by that time you were so worn out by all the work, you were ready. By the time you were 40 your skin was very wrinkled, you had lost most of your teeth, and every joint hurt — all the time.

Yup, the “good old days.”

Two of my many sources are:

- *America Eats*, by Williams Woys Weaver, Museum of American FolkArt, Harper & Row Publishers, 1989

- *Everyday Life in the 1800s*, by Marc McCutcheon, Writers Digest Books, 1993 — *Kathy Belt*

## Forum for cast iron enthusiasts

COUNTRYSIDE: I found a copy of your Sept./Oct 2012 issue in Portland, Oregon. This was my first time to see a copy and I really enjoyed the entire magazine. As a domestic cast iron collector, restorer and user, the article by Drew Frank “Rusty Gold,” was right down my alley.

Always good to see articles supporting the benefits of older and new American made cast iron hollow ware. And as folks in the cast iron circle have found, with a little care, a piece of cookware will last more than a long lifetime.

Lots of information can be found on the Wagner and Griswold Society website on the Internet. With many long-time cast iron enthusiasts visiting their forum daily, the “newby” can learn the tricks of the trade in no time at all.

Great magazine! Keep up the good work. — *Duke Gilleland, Belton, Texas*

## Living sustainably in the city

COUNTRYSIDE: I have been reading COUNTRYSIDE for many years. Long before I married, or owned a house, or even understood what sustainability is. I learned many, many things about off-grid living, canning, homesteading, housekeeping, etc. before I ever did any project of my own. The information has been invaluable and I return to those back issues now, more than ever, as our life gets more involved in gardening and sustainability. It has been in my heart and mind the whole time and as November approaches, I will take out the November/ December magazines from the past and read all of the ideas for this time of year. Starting with the newest, which I read cover to cover, I then scan through past issues to mark stories that I would like to read again.

When I first started reading COUNTRYSIDE, what I remember is the feeling in my gut, that instinctive knowing that I was supposed to be working in a garden somehow and that the sustainable lifestyle was something I wanted to live. Growing food, digging in the ground, chopping kindling, whatever it meant, I knew I would one day have a way to garden. I had the desire to move toward a simpler life, but I still had the impression that I would have to move to Vermont or somewhere similar to have the space to do many of the things that homesteading and off-grid living requires.

We decided to live sustainably in the city instead of moving. We started by asking ourselves what was attractive about living in a place like Vermont? It is a slower paced life — we can do that here by making better choices with our time. I want to be able to heat and cook with a wood stove — so we installed the Elmira wood stove. I want to grow our fruits and vegetables — we can do that in the city also, with a little creativity and patience. We want our commute and work day to be as simple as possible,

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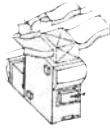
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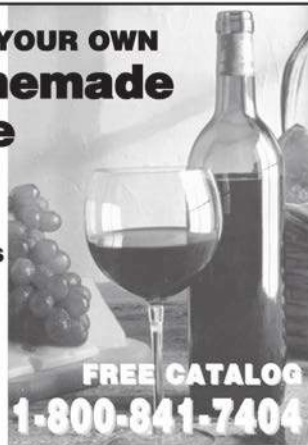
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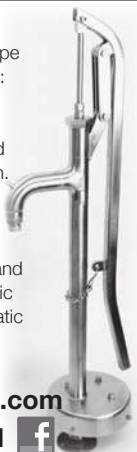


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Interest makes some people blind, and others quick-sighted. — Francis Beaumont

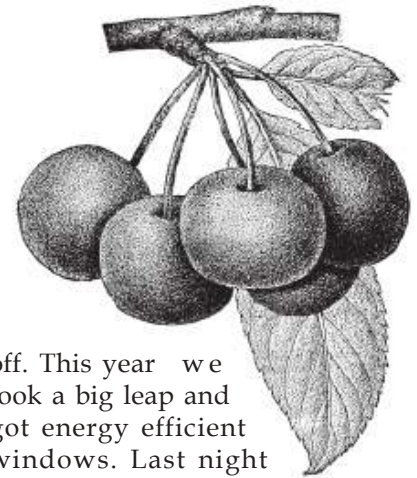
so we bought a house near our jobs and can walk if needed, but currently take public buses and carpool to commute. My ideal would be to stay home and put my full day of effort into working in the garden, cooking, writing and crafting, and I am working toward that by paying off personal debt and saving.

I once thought that we would need a lot of space, but that simply is not true. We live in Worcester, Massachusetts — one of the biggest cities in New England, and the lot we live on is only 100' x 50'. Many people, when seeing our home, had the first response of "what a great starter home." However, the first time we walked through, I knew it was a perfect, workable size for a family of four.

There was enough space to spend time in the yard and have a garden one day. When we moved in, there was extra space, and as we lived, we accumulated more and more stuff, to the point of needing a dumpster every year to clear out enough to use the house again. It isn't dirty or verging on hoarding, but a small space filled up quickly with two growing teens at the time, and with a creative family. We simply had too much, but didn't understand that we were participating in a consumer-based lifestyle at that time.

We started our journey of learning to be sustainable by taking care of structural and foundational work: first we replaced the roof, then we fenced in the yard. We added garden beds, fruit and nut trees last year, along with rain barrels. We also installed an Elmira Cooktop Stove, so we could heat and cook with wood. I learned about the stove in COUNTRYSIDE, and we found a local stove place to do the ordering and installation. We stopped using the air conditioners and had the extra appliances taken away. We bought a newer, energy efficient and smaller refrigerator, and a new washer that is energy efficient and easier on our clothes.

It sounds like so much in a list like this, but really, we did one project at a time and then paid it



off. This year we took a big leap and got energy efficient windows. Last night was only 40°F outside and it was still 65 inside. I am looking forward to the winter with the new windows and the wood heat. If the house holds heat like it seems to right now, we will not use all of the wood we have stacked in the yard.

Our garden last year was an experiment in planting as many different things as we could to see what would grow best here. We were able to can potatoes, corn, and carrots. We had a small amount of sweet potatoes. We also grew amaranth, peas, cucumbers, pumpkins, butternut squash, Sunchokes, sunflower seeds, peppers, beans for drying and several herbs. Oh, and lots of cherry tomatoes — we enjoyed a few each day with dinner. We learned a lot from our experiments! We will plant fewer things next year and only what we will definitely eat, with a goal of having extra to share with family and friends.

We also planted five different apple trees, three pear trees, an almond, two hazelnut, grapevines, kiwi vines and several different berry bushes. They all grew quite a bit, but we have to be patient to see what they will do this year or next.

I am sharing this because I believe that we can all do something to be a little more sustainable and contribute. Rather than taking and using resources, how great it would be if we each could do just a little bit for ourselves! With each of the changes we have made, our energy use has dropped, and although it has created more work for us physically

to chop wood, gather kindling, and care for the garden, the work is so rewarding.

Our city is currently working towards allowing chickens in the backyards here again ([www.rec-worcester.org](http://www.rec-worcester.org)) and working to get the approval in place. At the same time the local food movement ([www.masslocalfood.org](http://www.masslocalfood.org)) is growing. There are so many amazing pieces of conservation land that offer hiking, etc. One small place is near our home, so we became volunteer rangers and help out preserving the habitats near us. This gives us the experience of the open spaces of Vermont, while we stay right in our own neighborhood.

I don't believe that my backyard garden will change very much to big scale food growing or consumption, but I know what it has done for my mental well-being and the encouragement of our family. It is so exciting to see wildlife in our yard (toads, chipmunks, squirrels, skunks, possums, many different birds, butterflies, bats, etc.). It has changed our world to be able to walk in the backyard and pick a tomato that we planted. If everyone could just do one little thing like that, I do believe that individual lives would be greatly changed. And if enough individuals are changed, then who knows what the effect could be in the world?

I am very interested in the Tiny House movement (imagine the smile on my face when I realized that I already live in a small home). I am also reading a lot about minimalism and simplifying my life, and at the core of it, is the necessity to need less and have fewer requirements. I still have and use the technology that I enjoy, and am currently donating extra clothing, household items, etc., to three different organizations that will get it to families that are really in need.

I see that less "things" to care for gives me more time to spend with family and friends, more time to meet neighbors and be involved in the community, and more time to garden.

I would love to talk with anyone who is interested in urban farming, sustainability, living simply and returning to the simpler way of life. Our story is here: [adventureonplanetearth.blogspot.com](http://adventureonplanetearth.blogspot.com). — Michele Couture, 34 Pilgrim Ave., Worcester, MA 01604

**The typical American home has roughly 2,600 square feet of space according to [www.thetinylife.com](http://www.thetinylife.com). Meanwhile a small/tiny house has 400 square feet of space — akin to a large tool shed. If you've downsized to a "tiny house," let us know. It's something we'll address in a future issue.**

## Chickens can eat maggots

COUNTRYSIDE: The article in the Nov./Dec. 2012 issue about free chicken food so intrigued me that I went and rounded up a couple of five-gallon buckets. If economic times get worse, alternative ways of feeding livestock may become necessary. We have lots of 'coons and 'possums that would make the perfect "charge" for the feeder.

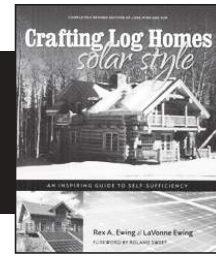
However, I was discussing this with a fellow poultry enthusiast who told me that maggots don't die like other worms and bugs when the chicken eats them, and are detrimental to the chicken's health. Can you shed some light on this for me? I was all ready to build feeders, but am putting it on hold until I find out for sure. — Jackie Simoneaux, Louisiana

**Maggots and grubs are a part of what make up a protein-rich free-range chicken diet. Cattle, sheep and goats would be more susceptible to disease by ingesting maggots, which are fly larvae that eat feces or decaying flesh. Your poultry will be fine. (This is one reason to make sure all meats are well-cooked before serving to humans, as some can burrow into living tissue.)**

**In fact, in 2011, Jungle George's Exotic Meats and Bugs, served the high-protein USDA-grown maggots (cooked) on hot sandwiches at California and Colorado State Fairs. People thought they tasted like cheese and crackers.**



# Crafting Log Homes Solar Style



BY REX A. EWING & LAVONNE EWING

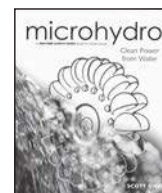
A down-to-earth guide to building solar-powered log homes, complete with how-to illustrations and photos plus enlightening profiles of log home owners across the country. Follow the authors' journey of handcrafting an off-the-grid log home in the Colorado Rockies and discover how renewable energy is a perfect match for modern log home living, from small weekend cabins to expansive year-round homes. **255 pages, \$25.00 + s/h.**

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## MAKE YOUR OWN CLEAN POWER FROM WATER!

### Microhydro

BY SCOTT DAVIS

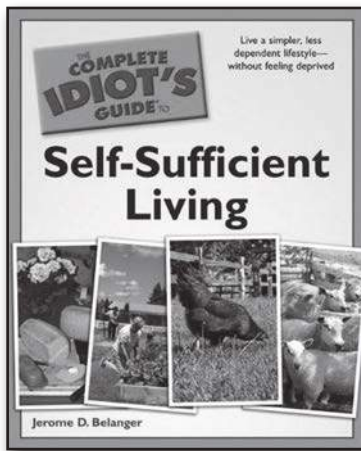


Hydroelectricity is the world's largest—and cleanest—source of renewable energy. But despite lively interest in renewable energy in general, there is an information vacuum about this technology that has been

dubbed "the simplest, most reliable and least expensive way to generate power off grid."

Highly illustrated and practical, this is the first complete book on the topic in many years. Covering both AC and DC systems, it first introduces the important principles on which microhydro is based, including the advantages and disadvantages of using small amounts of water to generate power. Includes: how to assess your particular electrical needs; how to assess your specific site; how to choose the appropriate system for your needs; how to install a system; common regulations and incentives; and seven case studies that demonstrate microhydro possibilities. Includes glossary of microhydro terms, further reading and resources. **156 pages, \$22.95 + s/h.**

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# Warning:

**"THIS BOOK IS NOT WHAT YOU'RE EXPECTING."**

That's the first sentence in the latest book on country living from COUNTRYSIDE magazine's founding editor Jerome D. Belanger. But then, what would you expect from a book titled

## THE COMPLETE IDIOT'S GUIDE TO SELF-SUFFICIENT LIVING!

By JD BELANGER

Above all, do NOT expect a rehash of all the old ideas about homesteading and country living. Yes, you'll find plenty of good advice on gardening and country cooking, raising small livestock, and shelter, energy and foraging, in this 400 page guide.

But simple living takes on an entirely new meaning when it includes understanding your carbon and water footprints, the slow food movement, the small house movement, the Maker movement, and more than passing reference to the effects of compound interest and the Great Recession.

Self-sufficiency for individuals is impossible. At the same time, self-sufficiency for Planet Earth is absolutely essential. This might be the first book to provide an up-to-date analysis of the economic and ecological realities facing both individuals and the Earth in 2010, from the standpoint of the experienced homesteader, and to suggest some possible answers. (Hint: The Establishment won't like the proposed outcomes, but will anyone have a choice?)

Wide-ranging, lively, thought-provoking, humorous, sometimes controversial — and yet incorporating plenty of practical how-to information on self-sufficient living — this book is a must-read for anyone who is concerned about their future and the survival of the planet.

The COMPLETE IDIOT'S GUIDE® TO SELF-SUFFICIENT LIVING has the makings of a long-lived, influential classic. But don't wait to get your copy.

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## "Cheap" essential oils aren't best

COUNTRYSIDE: I am a fairly new subscriber to COUNTRYSIDE and enjoy reading the articles by Millie Troth. I want to learn as much as I can about using essential oils and natural health. I've never seen anything about Young Living — the company mentioned. From what I've learned, it seems that they have the safest, purest therapeutic grade oils available. They cost more than other oils, but are well worth the extra cost because they not only work better, but you can be sure that you are not getting any pesticides, alcohol, or chemicals in your oils. No, I am not a dealer or in anyway compensated by Young Living. I am just a satisfied customer. I wanted to mention this company because before I recently started learning about oils, I would have bought the cheapest oils possible and not have a clue that I was doing my body a disservice. I just thought others would be interested.

I use wintergreen a lot and didn't realize it was basically like liquid aspirin. I love learning little tidbits like that.

I was also curious about the sulfur-in-a-sock method for chiggers. Does this work for ticks as well? Does it need to be put all over the clothes vs. just ankles (for ticks) and does the "dust" that comes off when you whack the sock against you cause any health problems if breathed?

Thanks so much for the info. — M. K., Kansas

**Inhaling any type of powder/dust can cause breathing difficulties.**

## Mouse population hinders car drying

COUNTRYSIDE: This is in response to an article about drying produce in a car (Nov/Dec 2011). I haven't tried it and probably won't, because of the experiences I have had with mice in my car.

When we moved to the country,

my husband decreed that we should keep our garbage cans in the garage to avoid attracting wild animals. Within a few months, he began having trouble with mice building nests in his heater fan, the vents from the heater and air conditioner, and maybe a few other places. We had the great good fortune of finding an honest, competent and conscientious auto mechanic. He did not like digging out mice nests with living, dying and very dead mice, so for a time we had to take his car to a different mechanic. At the time, he had a 1990 Toyota and I had a 1989 Pontiac, which the mice weren't as attracted to.

We moved the garbage cans out of the garage and the mouse problem improved, but it never disappeared entirely.

In 2005 I bought a 2004 Toyota Highlander, which promptly acquired a family of mice. I am an animal lover and hate killing any animal. I wouldn't mind the mice so much (they haven't destroyed anything in the car...yet) if they didn't cover the floor spaces with droppings.

Does anyone have a non-lethal suggestion for keeping mice out of our cars?

I have one other issue. I am trying extremely hard to find a property to buy in Gates County, North Carolina. I would like to raise rare or endangered breeds of poultry. I hope to find a three- bedroom, two-bath home, at least five acres for not too much money. If you know of such a place, please email me at Barbaracody@verizon.net. – *Barbara Cody, Westminster, Maryland*

## Homeschool book recommendation

COUNTRYSIDE: I'm sipping coffee and once again find myself re-reading older issues of Countryside.

I wanted to share probably the best homeschooling investment we've ever made—a book called *Homeschool Your Child for Free*, (ISBN 0-7615-2513-0), by Laura Maery Gold and Joann Zillinski). I paid \$3 for it on an on-line auction. It's just packed

full of free homeschooling resources for pre-K through high school. I highly suggest any family who is homeschooling purchase this book. – *Linda, Georgia*

## West Virginia dream for sale

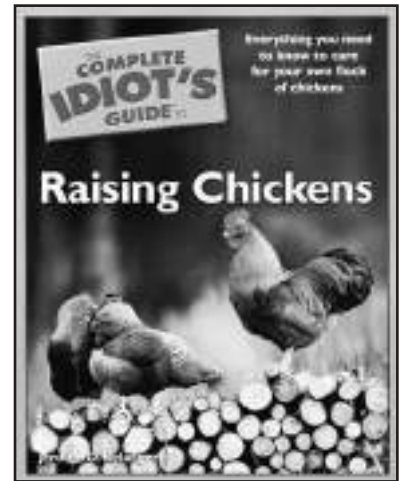
COUNTRYSIDE: Five years ago we bought a bit of West Virginia woodland with a tired house and two drooping sheds. You could see behind the house where there once was a garden and the full canopy forest had never been touched. Now we have the house, a barn with a loft, a feed barn, kennels, several pastures with run-in shelters, raised beds, a greenhouse, a chicken coop, and ATV roads throughout.

Illness caused us first to slow down our efforts and finally to give up. We have a fully functional breeding farm for goats, dogs, and rabbits, and still more work to be done than we can ever hope to do. As our abilities diminished we narrowed our focus so we could get the breeding business going and we left more and more non-essential tasks to be done later. Well, now it is "later" and we can't get the tasks done. Our farm is busy and fruitful, but cosmetically a wreck, and some of the first things we built have been used hard and are beginning to need fixing and I can't fix them. I was there when our animals were born, and I raised them to be the wonderful partners they are. The thought of them leaving here and possibly falling into harsher hands is heartbreaking.

I'm sharing all of this for three reasons: First, I really hope someone will hear of this and want to buy our place and pick up our dream where we have to leave off. Also, I hope you will share with us wisdom gleaned from your own re-locations. And finally...

As you put your heart and resources into your dream, I hope you will give some thought to "what if it doesn't work out?" If instead of an economic disaster you have a health disaster, what then will you do? – *The Doohan's, HC 75 Box 32, Strange Creek, WV 25063; doohanbill@yahoo.com.*

# THE COMPLETE IDIOT'S GUIDE TO RAISING CHICKENS



By Jerome D. Belanger  
FOUNDER OF COUNTRYSIDE

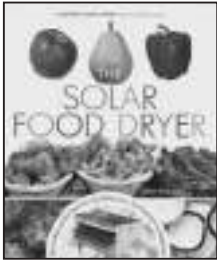
You're no idiot, of course. You know there's nothing like the taste of fresh, free-range eggs from chickens you've raised yourself, but you're wondering if owning your own flock of birds would be all it's cracked up to be. In this *Complete Idiot's Guide* you'll find advice on locating and buying your first chickens; tips for buying or building the right coop; learn all about eggs from conception to cooking; learn to identify normal behavior in healthy chickens and what to do when something goes wrong, and decide for yourself if raising chickens organically is right for you. As a first-time flock owner, you have questions, this book has the answers. **160 pages, \$14.95 + s/h.**

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## The Solar Food Dryer

By EBEN FODOR



Solar food drying is the healthy, sustainable way to preserve high-quality, locally grown foods. *The Solar Food Dryer* describes how to use solar energy to preserve your

summer's harvest. With your own solar-powered food dryer, you can quickly and efficiently dry all your extra garden veggies, fruits and herbs to keep their goodness all year long—with free sunshine! Included are complete step-by-step plans for building a high-performance, low-cost solar food dryer from readily available materials; solar energy design concepts; food drying tips and recipes; resources, references, solar charts and more. Highly illustrated with both photographs and helpful design and construction plans. **119 pages, \$15.95 + s/h.**

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## CHICKEN TRACTOR

The Homestead (3rd Edition)  
The Permaculture Guide to  
Happy Hens and Healthy Soil

By Andy Lee and Patricia Foreman



This is the book that tells you how to integrate small flocks of poultry in with family food production. There is a “back to the land” movement happening across the world, and it's happening in back-

yards and on small parcels of land. Chicken tractor systems have become so popular that the term “chicken tractor” is a household word. This is the definitive book that leads the way. Learn how you can: raise homestead flocks for eggs, meat and money; use chickens to create super-rich soils that enable hyper-productive gardens; easily, step-by-step, process poultry at home; build custom chicken tractors for your homestead; make a straw bale coop for your flock; understand how to select, buy and raise the best chickens for your goals. **312 pages, \$19.95**

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## Some essential homestead tools

COUNTRYSIDE: Because we heat our little North Dakota home with a 112-year-old Superior 227 wood burning stove, our buzz saw is essential to our homestead. The buzz saw, with a 32-inch blade, is mounted on the three-point hitch of our 1953 Jubilee Ford tractor and is run by a belt attached to the pulley. The saw plays a major role in keeping a sufficient supply of wood for the winter.

In addition, we enjoy the benefits of a homemade hydraulic wood splitter, which also attaches to the three-point. At the ages of 73 and 75, we are happy that we don't have to split the wood by hand. We also own a good Stihl chainsaw.

We not only save a ton of money, but benefit by good exercise. And the constant heat—no furnace going on and off—keeps our house warm and cozy. We have heated with wood for 30 years. — *Jerry & Carolyn Erickson, North Dakota*



COUNTRYSIDE: What's my favorite homestead tool? We all know no homestead is complete without its contingent of shovels, rakes, saws, axes, etc. Then again, I've used a well-chosen rock as a hammer or made a saw of a Ginsu kitchen knife. (Not recommended for firewood.)

One could make furrows or dig praties with an old tire iron (remember those?). After all, some of my ancestors did all their farming and foraging with little more than a sharp stick and an elk-hide bucket.

Thanks to the generosity of my children, I own a riding lawn mower (which my grandchildren are willing to exercise occasionally), a key-start walk-behind (my own preferred machine), both a heavy-duty and a light-weight tiller, electric chainsaw, an assortment of cordless power tools and the expected array of handy hand tools.

But when it comes to getting a

couple bags of feed from the pickup to the shed, a bale of straw to the hen house, the hen house cleanings to the garden, or just to entertain the fourth generation on a lazy summer evening, the tool I would least like to do without is my wheelbarrow. (And I have managed the chores with a canvas tarp.)

Thank you COUNTRYSIDE people for being there, for standing what you stand for, and providing a breath of sanity in a world lost in a wilderness of wrong thinking (or non-thinking). I can hardly wait to order J.D.'s new book! — *Kate Patrick, Oregon*

See page 3 for J.D. Belanger's newest release, *ENOUGH*. You can find more titles at [www.countrysidemag.com](http://www.countrysidemag.com).



COUNTRYSIDE: I am responding to the invitation on p. 99 of the Sept./Oct. 2012 issue regarding what I find are essential tools.

**Essential Tool #1:** Ask your dental technician or dentist to save for you handheld dental tools, usually picks that are broken. (Make sure they've been sterilized.)

Dental tools have a hardened, small steel hook on both ends, in several shapes, and when one breaks, they are usually thrown away.

If your dentist will save some for you, you will find them invaluable for many household and farm tasks, such as:

- Cleaning out accumulated dirt from inside corners.
- Hooking onto and retrieving something that fell into a very small space.
- As a spring hook to re-attach a spring to its post.
- During soldering, to pull off solder splatters or pull off cold solder joints. If you have it, you'll find all sorts of uses for it.

So before you strap on your tool belt and head out to the farm, make sure you have one of two dental picks in your belt. They don't take up much space, but many times they come in handy.

**#2:** When discarding used wind-

shield wipers, remove the long, thin steel shank inside. To give the wiper some "spine", these steel shanks are placed inside the wiper blades. They are handy for a variety of household tasks and also around the farm.

These steel bars are long, thin, and fairly flexible. They have a small barb on both ends, which makes them handy for a variety of retrieval jobs or to snag a line.

They take up no space at all in a toolbox, but if you have them there, it's amazing how many times they are just the tool you need.

**#3:** A torsion-rod from a tractor-trailer makes an excellent tamping rod. They're about four feet long, made of steel, and as strong as they are heavy. But when you want something to tamp rock or earth around a newly-installed post, there's nothing like it.

**#4:** Vice-grip pliers, for when you need three hands, or for when it must not move!

**#5:** 4-in-1 screwdriver. Takes up minimal room in the tool pouch and I always find a need for it.

**#6:** High-strength, 3/16" diameter, nylon cord, 50 ft.; for when you need a strong line that doesn't take up much space.

I would also like to submit these suggestions to COUNTRYSIDE in the spirit of wanting to add upon what's already good.

- Readers "Wanted" page. A place where members of the Countryside "community" can put up a small, short "I'm looking for this thing/product/tool, etc." I think readers would "eat up" a page like this. Kind of an offshoot of the country neighbor-helping-neighbor thing.

- A "What Is It?" page, otherwise known as "What's That Tool?" or something similar. Lots of subscribers would enjoy the puzzle of it. Our forebearers, lacking electricity, invented some pretty amazing tools and gadgets. Reader submissions ought to be plentiful enough to keep this page going.

- A column for "Tips and Techniques," or "Hints & Kinks," where

people could submit an idea that they have found makes work or handling stock or fences or feeders easier. We all come up with a few things that help with the work.

I enjoy each issue. — *Wayne Moseley, Mississippi*

**Thanks Wayne—we love to hear ideas from readers!**

**If you'd like to take Wayne to task, send your photos/submissions to [cseyeditorial@tds.net](mailto:cseyeditorial@tds.net) or COUNTRYSIDE Editorial, 145 Industrial Dr., Medford, WI 54451. Please send photos in jpg format, but we can also work with PDFs. Of course, hard copies always work, too.**

## Resource for using greywater

COUNTRYSIDE: I was re-reading the July/Aug. 2012 issue and saw Walter's letter asking about books on using greywater (p. 22). The article on page 39 of the same issue has some good general information, but allow me to recommend *Create an Oasis with Greywater*, by Art Ludwig and the website [www.oasisdesign.net](http://www.oasisdesign.net) which has information about using greywater (and also sells the book). — *Forrest Stevens, Princeton, Idaho*

## Need a fundraiser idea?

*It's in the bag*

COUNTRYSIDE: I think people might be interested in my non-profit's "Rural and Proud" tote bag. We designed, hand silkscreen print, and sell the bags as a fundraiser.

All of the funds raised go towards providing housing and business resources for the small rural town of Green River, Utah.

Here's the tote bag's listing on Etsy (including a description and photos): [www.etsy.com/listing/75494053/rural-and-proud-silkscreen-printed-canvas](http://www.etsy.com/listing/75494053/rural-and-proud-silkscreen-printed-canvas).

More information on our non-profit: <http://ruralandproud.org>. — *Ashley R.*

**See the next page for a fundraiser cookbook idea.**

## HOMEMADE CHEESE

*Recipes for 50 Cheeses from Artisan Cheesemakers*



**By Janet Hurst**

Here is everything you need to know to make cheese at home! Expert advice from experienced cheesemakers includes easy and basic recipes for butter, yogurt, mozzarella, and chévre as well as advanced, step-by-step, how-to advice on the use of molds and aging your cheeses—from cheddar and brie to feta, blue cheese, and more artisanal cheeses. And there are directions for crafting cheese with cow's, goat's, or sheep's milk. Author Janet Hurst is a twenty-year veteran home cheesemaker and educator as well as a goat-keeper. Plus, twenty established artisanal cheesemakers share their hard-won advice, recommendations, and favorite recipes. **160 pages, \$19.99**

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## Chicken and Egg

*A Memoir of Suburban Homesteading with 125 Recipes*

**By Janice Cole**  
**Photographs by Alex Farnum**



*Chicken and Egg* tells the story of veteran food writer Janice Cole, who, like so many other urbanites, took up the revolutionary hobby of raising chickens at home.

From picking out the perfect coop to producing the miracle of the first egg, Cole shares her now-expert insights into the trials, triumphs, and bonds that result when human and hen live in close quarters. With 125 recipes for delicious chicken and egg dishes, poultry lovers, backyard farmers, and those contemplating taking the leap will adore this captivating illustrated memoir! **256 pages, \$24.95**

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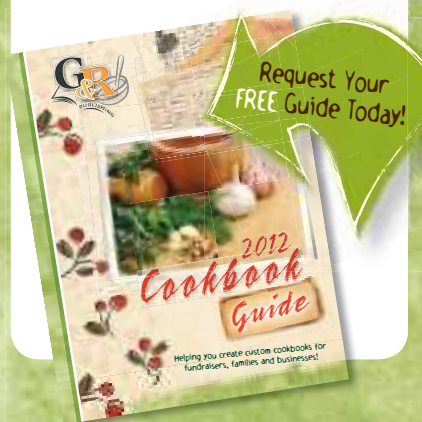
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## COUNTRYSIDE CASSEROLE CONTEST

COUNTRYSIDE & SMALL STOCK JOURNAL is hosting a cooking contest. Send us your best casserole recipe for a chance to win a prize of \$500 toward your own custom cookbook by G&R Publishing. Earn extra prize points by incorporating home grown produce and/or homemade ingredients into your entry. The winning recipe will be published in the September/October 2013 issue of COUNTRYSIDE.

### To Enter

**By E-mail:** Send e-mail entry with subject line "Casserole Contest Entry" to [csyeditorial@tds.net](mailto:csyeditorial@tds.net). All entries must be received by midnight central time on February 28, 2013. Please see Contest Rules (below) for more details.

**By Mail:** Send entries by postal mail to: COUNTRYSIDE Casserole Contest Entry, 145 Industrial Dr., Medford, WI 54451. All mailed entries must be legible (illegible entries will be voided). Entries submitted by mail must be received by February 28, 2013. Please see Contest Rules (below) for more details.

### Prizes



G&R Publishing loves cookbooks—especially family and community-based cookbooks. Favorite recipes are as cherished as a family heirloom, and creating a custom cookbook is a great way to preserve these treasures. For more than 35 years, G&R Publishing has enjoyed helping folks across the U.S. create custom cookbooks.

G&R Publishing is pleased to offer the lucky winner of the COUNTRYSIDE CASSEROLE CONTEST a prize of \$500 towards publishing a custom cookbook. This custom cookbook can be created completely online at [www.gandrpublishing.com](http://www.gandrpublishing.com). The prize winner will be able to create a custom cookbook of favorite recipes as a fundraiser or as a family project.

Prizes are not transferable, have no cash value, and expire December 31, 2013.

### Contest Rules

- ◆ Each entry must be received by midnight on February 28, 2013.
- ◆ Each entry must include full name, address, phone number and e-mail if available.
- ◆ Each entry must include the recipe name, number of servings, complete ingredients list including measurements, and step-by-step cooking instructions. Photos are encouraged but not required.
- ◆ Each contestant may enter unlimited recipes. Entries may be submitted together as long as *each entry* is complete with requirements listed above, including full contact information and complete recipe requirements.
- ◆ Each contestant by entry in the contest verifies the entry is an original recipe by contestant, and that the recipe has not been previously published for payment.
- ◆ The winning recipe will appear in the July/August 2013 issue.
- ◆ Each contestant agrees to allow COUNTRYSIDE to publish any entry in the magazine or on the website, without compensation.
- ◆ Entries that are not complete with instructions listed above will be disqualified.

**Send your best casserole recipe today — the entry deadline is February 28, 2013!**



**Flatten your stomach without gut-wrenching exercises.**



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**What you should never eat when taking prescription drugs.**



# “HONEY Can Heal WHAT?”

(By Frank K. Wood)

If you want to learn how to use gentle folk remedies to unleash your body's healing power instead of resorting to dangerous prescription drugs or risky surgery, you need *The Folk Remedy Encyclopedia: Olive Oil, Vinegar, Honey and 1,001 Other Home Remedies*, an informative new book just released to the public by FC&A Medical Publishing® in Peachtree City, Georgia.

You'll be amazed by how many inexpensive, easy, natural cures you can find all around you — in your pantry, garden, garage, and grocery store.

The authors provide many health tips with full explanations.

- ▶ A natural way to rejuvenate your veins and arteries that will have you feeling brand new.
- ▶ That “spare tire” is doing more than just slowing you down ... it raises your risk of many life-threatening illnesses! Burn it off without gut-wrenching sit-ups or grueling fitness regimens.
- ▶ One super vitamin protects your vision, fights infections, keeps skin, bones, and cells healthy, plus fights heart disease, cancer, memory loss, arthritis, liver disease, Parkinson's, and complications of diabetes. Are you getting 100%?
- ▶ Miracle healing seed lowers blood pressure, reduces risk of stroke, plus fights arthritis, heart disease, type 2 diabetes, stomach disorders, and even mental problems!
- ▶ Prevent high blood pressure, colon cancer, senility, and fragile bones. All with one — yes, one — inexpensive daily supplement that keeps you healthy and strong.
- ▶ Here's the secret to naturally block out calories from foods. Just add this when you eat — and watch the weight melt away.
- ▶ Nature's wonder food for your body — once praised by Gandhi. Fights heart disease, high blood pressure, stroke, arthritis, type 2 diabetes, and even protects against

- breast, colon, and prostate cancer!
- ▶ Clogged arteries virtually disappear when you add this to your life every day.
- ▶ It protects your heart, lowers your cholesterol, fights cancer, and much more! Researchers take a good look at this “miracle” mineral.
- ▶ Kills cancer cells dead in their tracks! Duke University study proves this tiny seed packs a powerful punch!
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# ENERGY, ECONOMICS, PEAK OIL, AND POPULATION

## PART II

### A quick recap from last time:

*This paper was first delivered at the Maine Common Ground Fair (CGF 2011), and subsequently expanded as a handout for the 2011 ASPO-USA conference.*

*The purpose of this document is to subsume and condense the huge amount of background information and jump directly to a critical analysis of our human predicament as we steadily deplete the finite energy required for future economic and food stability.*

*Please read through and become pro-active. We've run out of time to face the perfect storm of peaking energy, ecological devastation, over-population, and economic collapse. The time to become involved is now.*

### LEARN:

To guide my work after publishing the third edition of *"The End of Fossil Energy"* in 2006, I have used the acronym LEARN. This helps keep my thoughts in order while attempting to explain our predicament and options. To make this handout more complete by itself, I will summarize and update each of the five letters, some of which stand for more than one word:

**L: Limits and localization**

**E: Education, energy, economics, efficiency, ecology...**

By JOHN HOWE

### A: Adapting to solar energy

Back in the early 2000s, when I first became totally convinced of peak oil and an imminent world-energy crisis, it seemed possible that solar energy, in its many variations, could be the "light" at the end of a long dark tunnel. At that time, world oil prices were still in the \$20 range. It was very difficult to find alarm and support from anyone about a coming energy crisis. But, as a life-long, career, product development engineer, I was very accustomed to peering into my own crystal ball to anticipate future direction and market needs long before the public was remotely aware that life (and business) as usual could or would soon change. At that time, photovoltaic (PV) solar panels cost over \$5 per watt and were only

of interest for remote sites or fanatics with lots of money. That said, the possibility of direct electrical energy from a "magic" panel that would keep producing for decades was the obvious path to explore. The dilute and sporadic power output could be overcome by a vast potential for increase in scale. However, like any other great promise, closer examination revealed a "cloudier" picture. We will start with the many variations of solar energy. In reality, most all our energy sources, including ancient sunlight converted by photosynthesis to convenient storage as fossil fuels, are forms of solar energy. The only exceptions are nuclear and tidal energy. This section will focus on the promise and limitations of renewable forms of solar energy. But first, we need to address the storage problem:

**Energy storage:** "Storage" is the critical weakness. Except for direct

thermal-solar heating, warmth when the sun is shining, the needs of humans are greater than the weak, sporadic power of direct incoming solar radiation. Plant life solves this problem very well with photosynthesis, the biological process of using the incoming radiation energy to combine simple carbon dioxide and water to form higher-energy, complex carbohydrates.

The higher molecular weight makes these compounds solid and stable (for a while) at normal earth temperatures and able to store a substantial amount of energy. Subsequent chemical reaction with oxygen (burning or metabolizing) releases the stored energy much faster (higher power) than it was accumulated, as a fuel when we need it, to keep us warm, moving around, and to do all the wonderful and bad things that define us as intelligent primates. The obvious examples are wood or food conveniently stored for us by plants or other animals farther down the food chain.

**Electrical energy and batteries:** The preferred method of electrical-storage in the industrial age is the battery, which converts a chemical process to electricity and back again (in the case of rechargeable batteries). The ubiquitous lead-acid (L/A) battery has been the work-horse for residential applications for over a century. If treated well, it can have a useful life of more than 10 years. On the debit side, it is heavy, environmentally hazardous, inefficient, temperature sensitive, slow to recharge, and quickly degraded if discharged quickly. But, we have millions of tons in the system and it can be recycled.

For meaningful motive power

such as personal or commercial transport, or agricultural work the L/A battery is even more limited because of its poor energy density and intolerance for excessive current draw (Peukert's Exponent). I have been investigating the pros and cons of PV and grid-charged L/A power for eight years and have built five concept vehicles for personal use and test: a golf cart and a Farmall Cub tractor with on-board panels, a 1962 MG, a 1939 Ford N9 and a 1948 Ford 8N tractor without on-board panels. These last three vehicles can be charged directly from the utility grid or from the 750 watt, high voltage PV array permanently installed on the Farmall Cub. The two larger tractors each have a 1,200-pound battery pack (ten 12 volt batteries in series for 120 volts) to store 12 kWh of energy at 75% depth of discharge (DOD). This is about the equivalent energy of not more than 1-1/2 gallons (11 pounds) of gasoline, good for one or two hours of serious plowing or harrowing at up to 100 amperes (12 kilowatts or 16 horsepower). To recharge this much energy would take at least 16 hours of direct sunlight shining on the 3/4 kilowatt array on the Farmall Cub. All of this work can be seen on my site: [www.solarcarandtractor.com](http://www.solarcarandtractor.com).

For agricultural power, the weight of the L/A battery is acceptable, and most of the tractor-use is needed in the long summer-sunlight days. In the winter, the heavy battery pack can supplement the residential storage needs. For transportation, the heavy L/A battery presents a much bleaker picture. When we travel and/or move something to somewhere else, we need to carry our energy supply with us and be able to stop along the way to refuel.

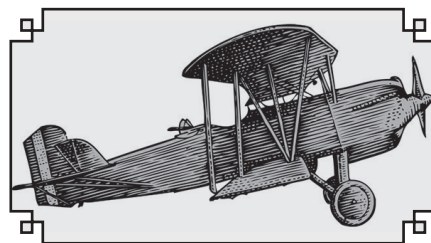
Presently, about 90% of the energy we use for travel comes from oil. We will never go far or fast again without it. Winter travel will be especially problematic. We will never fly again without gasoline or jet fuel.

The age of air travel started just over 100 years ago when the Wright brothers first added a gasoline engine to an air frame. Public air travel cannot last more than another 50 years

as remaining oil becomes steadily more expensive and is critical for food production and distribution. Batteries that weigh 80 times as much (20 times as much for Lithium-ion) as equivalent petro-fuels cannot lift their own weight off the ground at speeds sufficient for the lift of a wing. My L/A battery-powered MG will go 100 miles without recharging but at very slow speeds, especially uphill when the batteries have to lift their own weight.

From my years of work with electric vehicles, I would summarize by saying, without grid back-up, direct solar power is very feeble and cannot possibly replace fossil fuels. On the other hand, compared with the alternatives of draft animals or human muscle-power, a few panels would have been magic for our ancestors.

And, when oil is no longer available, I was encouraged that, at least with solar-power, especially solar PV on a distributed personal basis, we could find a "modern" future without collapsing back into prehistoric levels of survival. Now, after more study and pondering, I don't believe any acceptable future is possible without residual oil, natural gas, and coal; all finite energy sources and being used at a prodigious rate. Our society is too high-tech and the population has increased about five-fold too much. A good example is the ubiquitous L/A battery. When our PV-charged residential, tractor, or personal vehicle battery pack (forget commercial diesel or air travel!) battery gives up after a few years, what are we going



to do, jump into our cars and go to Wal-Mart for a replacement?

It gets worse. Today, all the L/A batteries are picked up and shipped long-distance to one of a handful of huge recycling centers like the East-Penn facility in Lyons, Pennsylvania. New batteries are returned by the

same diesel-powered 18 wheelers. How will this be done without liquid fuels? Battery-powered trucks? And worse (!), apparently, like other toxic processes, we're shipping a substantial part of our L/A battery recycling to foreign countries, especially Mexico. According to a new report from the NGO, Occupational Knowledge International, 261,000 pounds of used batteries (12% of all used L/A batteries, of over 1,000 tons total) and other lead scrap were shipped to Mexico in 2010 to avoid stricter environmental regulations in the U.S. (Ref: *Home Power* #145 Oct./Nov. 2011).

In addition, how about all the other parts of a high-tech society we take for granted? I could not possibly build and ship my thresher/winnower without gasoline or diesel-powered UPS delivery of motors and myriad other components (also used in the electric vehicles). This pessimistic discussion about the imaginary future of solar power leads directly to the last two letters, "R" and "N." But first, a few more thoughts about the other forms of solar energy and storage which face the same dead end of complexity when there will soon, in our children's lifetimes, no longer be the support umbrella of fossil fuels for all we take for granted.

**Lithium batteries:** No discussion of electro-chemical energy storage would be complete without considering the panacea for our personal transportation in the post-oil days, lithium, in its many iterations of battery design. A recent book by Seth Fletcher, *Bottled Lightning*, is an excellent current summary of every facet of the subject. I learned a great deal. For instance, there is no shortage of lithium in the world including vast deposits in Bolivia, Chile, China, and Nevada. Possible variations on its use, including Lithium-sulfur, silicene, and li-air, keep the dream going of a transportation-energy future with lighter-than-gasoline power and a 500-mile range. Unfortunately, in my opinion, much of the hype is "fueled" by the 2009, \$2.4 billion stimulus package specifically for clean energy and one-million electric cars (hybrid or otherwise) on the road

by 2015. Already, this temporary funding is drying up, leaving U.S. solar-panel manufacturers going bankrupt or moving to China where labor is cheaper. Without the mainstream public acceptance of the new electric cars, like the Volt at \$41,000, there can be no future for even a tiny part of our life on the road to life without oil.

**Where does the energy come from?** If we ignore or look beyond the limitations of range and charging facilities for electric vehicles, we must still come to grips with the energy-source problem. There cannot possibly be enough wind or solar electricity to pick up today's residential electrical requirements, especially without natural gas "spinning reserve" when finite coal and nuclear begin to eventually wane. Where will the additional energy for electrical transportation come from?

**More questions:** How will the massive infrastructure for electric vehicles be funded? By oil companies, our government which is already in massive debt, or consumers (most of

whom can hardly afford their next tank of gas because we've already spent our low and middle class American-wealth for gasoline)? In what time frame could an electric automobile system be built, considering the imminent crash of oil-powered civilization starting now? And, finally, how about commercial diesel, agricultural power, and aviation fuel? Clearly, electric transportation, especially solar-powered, is not going to save us as the oil-age winds down. No one wants to hear the pessimists. It's the same old story.

**Hydro-power:** When heated, the atmosphere can absorb and hold additional moisture in large quantities. As the dense air pushes higher and is cooled, the moisture precipitates and redistributes the liquid water to higher levels. The potential energy from a large land-area of moisture collects in streams and rivers and can be stored in dams to be converted to mechanical or electrical energy as it returns to a lower level. We all know this, but overlook the facts that it takes a large land area and substantial vertical topography to accumulate significant water energy. Sometimes the water gets out of control and other times, there is not enough to fill the dam for use as needed. In fact, hydro-power is decreasing since the middle 1990s because of climate change-caused decreased water flow. Micro-hydro is insignificant in its potential and suffers the same problems as distributed wind discussed below. For years, if suitable terrain is available, water has been pumped back uphill as pumped storage to be used as a supplement to other forms of energy. For all these reasons, hydro-power is one of the best sources of energy but will always be limited to about 5% of today's energy consumption. In the future, as finite, pre-stored fossil fuels steadily decline, hydro-power will be our best chance for perpetuating a small fraction of a modern lifestyle. But, there is always the need for maintenance of dams, waterways, and the electric power and distribution infrastructure. How will this be done without petro-fuels?

**Wind:** Wind power is just an-

other variation of weak solar. Heated convection currents move from one location to another. In fact the swept area of a wind turbine blade at peak performance will produce about the same power as a PV panel of similar area. I do not believe that residential (distributed) wind turbines are valid when compared to the alternative of distributed PV. I know of instances where small turbines have been installed but failed to deliver because of a poor wind regime or maintenance problems. Larger, regional installations are very unpopular, even with the alternative-energy "green" crowd, because of noise and aesthetics.

In addition, the problems of random, sporadic electrical output, distance, and right-of-way are much greater than with PV. Industrial-scale wind energy is already cost competitive with fossil-fuel electricity, but can never supplant liquid-fossil fuels in the timeframe of peak-oil. To scale-up from industrial-scale high-plains or offshore sources will take decades and billions of dollars of infrastructure including towers, turbines, and transmission lines. The present political wisdom, on both sides, and in Canada would rather build oil pipelines from Canadian tar sands, south across the U.S. to refineries; or across pristine Canadian forests to be shipped to the highest world bidder.

**Bio fuels:** We would not be here if not for bio-fuels. They may compete with our food, and only in very limited quantities, should be the last resort for domestic heating. Any use of bio-fuels for the generation of electricity is totally wrong. To begin with, it takes considerable liquid petro-fuels to harvest, process, and ship in a short time the energy it took Mother Nature half the oil age to accumulate. The use of agricultural or forest "waste" for commercial heating or utility-scale electricity is an obvious, abrupt termination to biological life cycles and the environment of which we are an integral (and destructive) part. As stated above in section "L", all nutrients and organic matter must return to their source.

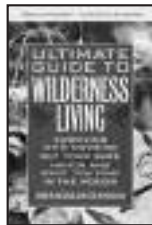
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form of solar electricity is to focus and concentrate incoming radiation onto a liquid collector system which can, in turn, turn a turbine to generate electricity. The storage problem can also be solved by using molten salts to absorb the energy and give it back as needed. This scheme is under pilot operation in several parts of the world, but takes tremendous capital investment and transmission infrastructure. Like industrial wind, it only makes sense in remote parts of the country, far from population centers.

At this point, it sounds like John Howe is saying “nothing works.” If so, I’m not alone. That is the central thesis of this presentation as well as many of the books in the included bibliography. Referring back to my basic graph, shows the potential of all renewable energy at best, in the next 50 years, climbing to 10% of our present world oil extraction of 75 million barrels per day. Even that possible energy level of 7.5 MB/D would only be about 4% of our total present energy consumption from all sources. But there is hope, at least for a long remission, only if we consider the last two letters of our acronym, LEARN and become aggressively proactive on a mass-movement scale. We must not let the barrage of “feel-good” documentaries lull us into complacency while we wait for the scientists to save us with dreams of algae and cellulosic ethanol.

### R: Rationing, are you kidding?

Whenever a critical resource begins a shortfall in supply, two things happen: the value (price) increases and consumers start competing for the remains. This is the situation with oil since 2005 when the peak of extraction could no longer follow the steady upward trend in demand. The only answer, to buy time and minimize chaos, is to equitably distribute the remaining supply with rationing.

Market forces and/or increased taxation only polarize the consumers between fewer wealthy and the

growing number of poor. This is not a new concept. It was first proposed by the *Pope of Peak Oil*, Colin Campbell, and thoroughly covered in Richard Heinberg’s book, *The Oil Depletion Protocol*. Independently, I defined a “Five-Percent Per Year” plan to reduce and save energy in substantial quantities, which would allow us to bridge the gap to a sustainable future. My plan focused on all energy; it was for U.S. only; and it could have started in 2005. In 2009, I added a comprehensive, 14-page essay to my website ([www.solarcarandtractor.com](http://www.solarcarandtractor.com)) with the above title and more technical details.

Now... some form of rationing, starting with gasoline and combined with a reduction of birth rate is our last hope to reach a future. A voluntary reduction of consumption will not work because that is not the nature of the genetic drive for survival. Individuals will not go without if others can’t be trusted to do the same. But it can be done collectively. I remember World War II as a boy when we had coupons for three gallons per week. We gladly shared the sacrifice because it was a “national emergency” and all our oil was going to the war effort. What could be more of an emergency than now, as we face the end of modern civilization? Consider the following details:

- It would be nationally administered in America only. We cannot control the rest of the world.
- Right now, we consume about 400 million gallons a day (1/8th of world oil consumption) or two gallons per day for each of 200 million licensed drivers. That’s about 50 miles per day, an absurd amount of travel. We all know the myriad ways we could cut way back individually, but totally ineffective on a national scale.
- Tradable Fuel Cards in the form of electronic swipe cards (TFC’s) could be distributed monthly by each state department of motor vehicles. Those in special need because of critical employment or hardship could apply for extra cards.
- The first year, overall consumption would decline 5% (0.05 x 400) or

20 million gallons per day. Instead of two gallons, each driver would be allotted 1.9 gallons.

- It would be so simple to save 10% just by driving slower or 50% by doubling up.
- Vacations and recreation could be easily accrued for on stay-at-home days.
- All drivers would be encouraged to purchase or use their more economical vehicle.
- The plan saves 182 million barrels of oil per year or about 25% of our strategic oil reserve.
- An overall reduction in national consumption of 5% per year would lower world oil demand and price, and leave more oil in the ground (at least in the U.S.) for the future.
- The tradable cards could be used for barter or to redistribute wealth between those who can afford more and those who choose to ride their bike.
- Most importantly, the reduced

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price and forced reduction in gasoline purchases will leave more money in the economy to begin again the demand for all things other than gasoline.

### **N: Negative population growth**

If you think gasoline rationing is a tough sell, this topic will be the grand finale.

At this point, please refer again to the main graph and the concept of population momentum. One more time...because we expect to live to see our children, and their children and, hopefully, our great-grandchildren, the bulge (momentum) of total population grows long into the future even at a reproductive (sometimes called fertility) rate of only one child per female (1CPF). As shown, the population for a closed group of any size at 1CPF will reach peak population about 30 years after the start of the program and far beyond peak oil and the sum of all energy, starting right about now. The numbers are based on a typical demographic pattern of: average age of reproduction at 25 years old, and average death at 80. The starting date for the methodology used assumes an age distribution as follows: 1 to 20 years old, 40%; 21 to 50 years old, 43%; 51 to 80 years old, 17%.

If other age distributions are assumed, the results would be slightly different, but the conclusion would be exactly the same. Because, with modern medicine and dependable food systems, we are so adept at death control, our population grows much larger for even a small birth rate. Before industrial times, the average age at death was much lower because of infant mortality and continuing through brief adulthood with plagues, famines, childbirth death, wars, and just a hard, short life. We can't have it both ways. Modern health care is not compatible with a fertility rate higher than 1CPF, especially now that energy in the essential forms of food, fuel, and transportation will soon decline precipitously.

**Population control:** This is obviously the fundamental challenge if we don't want to defer to the cruel

indifference of Mother Nature interspersed with the aggressive, biological, genetic hard-drive to compete for insufficient, meager resources. The best example is any of the team sports like football, soccer, basketball, or lacrosse where the intent is to possess a single resource (like a football, which could represent a chicken) and return it, regardless of bodily harm, to home with cheering dependents. If there were footballs (chickens?) all over the stadium, there would be no incentive to "fight." The men could stay home, build high-tech gadgets to avoid exercise, eat too much bad food, attract mates, and make more babies.

The included bibliography includes many titles specific to the population problem starting of course with Thomas Malthus who was "proven wrong" for the last 200 years because of new lands, high-tech agriculture and unlimited fossil fuels. The best contemporary authors start with Al Bartlett (*The Essential Exponential*). He has given thousands of lectures on population throughout the world. Now, in his 80's, he still has an office at the University of Colorado where he was teaching in the 1950s when I was there as a young engineering student. Another author who combines both sides of the population-resource equation is Lindsey Grant (*The Collapsing Bubble* and, *Too many People*). He is instrumental in the U.S. NGO, Negative Population Growth, Inc. ([www.npg.org](http://www.npg.org)), which focuses directly on the subject. Another U.S. NGO is World Population Balance ([www.worldpopulationbalance.org](http://www.worldpopulationbalance.org)). In the U.K., several of the best books are: *The Rapid Growth of Human Populations* by William Stanton and *The Growth Illusion* by Richard Douthwaite. Similar work is spearheaded by the Optimum Population Trust ([www.populationmatters.org](http://www.populationmatters.org)). Many are trying to get the facts out. To date, few are listening.

The only possible way to achieve 1CPF in a modern, free society is with vast publicity and peer pressure. The public must realize that extra children born today will not only compete with everyone else for resources,

but their parents will be there to see them suffer in a world which will get a whole lot uglier. Isolated bunker mentality will not survive the coming tsunami because of the limitations of localization summarized in section "L" above. The planet is a finite entity so we must respect the reality of numbers. Please join this mission and get involved.

### **ASPO-USA Supplement (Peak-Sex and review) November, 2011:**

We are a society saturated with sex. The innate desire to mate is one of the most dominant drives, especially among males. Along with fleeing from danger, accessing food, and competing with other males, all insure continuity of life. In most successful species the males have little concern for the biological outcome or future of a union between thousands of spermatozoa and millions of (in the case of fish) female eggs. A few centuries of "modern man" cannot erase eons of successful survival. It takes hundreds of generations for the genetic code to slowly adapt to a changing environment or develop improved ways to access food, attract females, and avoid being food for others. But the basic impetus to mate is always lurking, only recently hidden by a facade of civilization. Combining the need for food-energy and the urge for sex provides the backdrop for the story of life, ours included.

We might start with the assumption: "higher intelligence" leads to the obvious conclusion that a good long life for all is only possible when population is carefully kept within the carrying capacity of finite resources. The antithesis is "less intelligence," that is not concerned about excess numbers and out-procreates the visionaries who are striving for population control and long-term sustainability. Is intelligence a regressive gene?

Frequently, our every-day activity and public interaction is openly, or subliminally, concerned with sex. This is accepted and may be allowed to run rampant depending on the times, marketing, religion, or local culture. The result of sex, beyond pleasure, obviously is population.

Yet, the subject stops there! We can openly discuss sex, but not population because it is personal and taboo. In our great wisdom, we neuter our pets and farm animals to insure population control, but now face the threshold of a catastrophe because the inevitable decline in fossil-fueled food can only feed a fraction of the present world population. There are those that argue that if we all eat like third-worlders or invent new ways to manipulate agriculture, we will be able to feed the nine billion mouths projected by the U.N. in 2050. Assuming this was remotely possible and the crowding is acceptable, what then? Sooner or later, population must reach the ceiling of finite land, soil, water, and energy. The result, as Malthus calls it, is "misery." We argue that peak oil and finite limits will equal peak food, but are we ready for peak sex?

**One child per male:** I, for one, am all for continuing sex, but not population growth. In my opinion (and from personal experience) the best way to achieve one child per female (1cpf), and best hope for a controlled descent from peak oil to transition to an acceptable low-energy future, is to switch the gender emphasis on population control, and the onus of responsibility, from females to one child per male (1cpm).

In modern times the answer is so simple. After one child, every male gets a vasectomy. After an hour in the urologist's office and a couple of days of discomfort life can go on... without social contention, abortions, abstinence, frustration, birth control, unwanted pregnancies, and extra mouths to feed and care for. In addition, an only child will receive the entire focus of love, attention, and financial resources from two parents.

Sounds simple but, like gasoline rationing, the devil is in the details. We will still have to respect traditions of cultures like the Amish. At least they have a much-lower energy-impact and, like many Hispanics, are much better at growing food. Low birth rate is already fact, but not as low as 1cpm in some countries like Italy, Japan, and Russia. Why? How

can 1cpm be enforced, as a law of the land or financial credits? Can the vasectomy be reversed if the one child dies? At least the topics of 1cpm or 1cpf should be publicly debated and addressed as in China for thousands of years. The nations that resolve the declining-energy/increasing population conflict will have the best chance to prevail in the next hundred years.

**Review:** The basic premise of this entire document is that we are precariously late coming to terms with the growing tension (gap) between increasing numbers to feed, and declining fossil-fuels. Now, we must reduce population as discussed in section "N" with 1cpf, or as a better alternative, 1cpm. The summary-graph #2 shows why it requires *both* an orderly reduction in per-capita energy usage, like rationing, *plus* negative population growth at the level of 1cpf (or 1cpm) to have any hope of reaching a renewable, sustainable, low-energy future. In what form of social structure can these goals possibly be achieved? We will consider five levels starting with one extreme, the *world*, where the total population just soared past seven billion. The next lower step with a better chance of prevailing is a *national* structure of government that exists with a democratic framework of laws, or possibly a benevolent dictator (like Plato's ideal, an "independent philosopher"). The third level, where, in isolated instances, public discourse and tentative steps are beginning, is "local." This movement is discussed in section "L" and needs further division because the numbers could vary between millions, as in a *regional* component, province, or state in a sovereign nation, down to several hundred or a few thousand in a *local* community like a "transition town." The fifth level is **personal**, which includes the immediate nearby family, and may be, at most, a few dozen people. The writer's opinions on the effectiveness of each size and population level are summarized next:

**1. World:** There is no hope for a world of seven billion humans to reach and enforce any type of

agreement regarding resources and population. There are far too many differences in religion, tradition, distance (especially in a future with much less oil for long-distance movement), national resources, customs, language, and the innate tendency for procreation, survival and greed. (See Dawkins, R., *The Selfish Gene*.)

Attempts to prove otherwise, like the European Union and the United Nations, are tentative and weak. Wars are the results of disagreements and a worldwide "depletion protocol" offers little hope for bridging disparate regional interests.

**2. National:** Autonomous nations have the best chance of surviving a post-peak oil future. They must be large enough to have substantial energy resources, national security, food, and crop diversity. They contain familiar and compatible cultures, yet still are large enough to insure a continuity of a high-tech, low-energy industrial base, plus resilience to weather fluctuations and climate change. Each must ration critical resources and control population, with or without cooperation from other nations. They will have to defend their own borders (with the help of traditional topography) to control population numbers and prevent attacks.

They must have the knowledge, resolve, and support of a majority of the populace. (See sect. "E".) A national level is the optimum balance of size for a post-oil future with sharply reduced travel and trade. A strong national leadership has the only chance of implementing rationing and population control.

**3. Regional, or state:** Smaller components of a national level have less chance to survive alone. They overlap in history, language, population, travel, and are too small to be energy, weather, and food resilient. Borders cannot be defined or secured. To do so would duplicate national security and prohibit the flow of goods and people, usually with common goals and language.

**4. Local:** The potential for unique, isolated, long-term survival, or resilience in a localized community of a

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## 34 What's a proper punishment for bigamy? Lord John Russel: Two mothers-in-law.

few hundred people is practically nil for all the reasons discussed in section "L." The group is too small in numbers and diversity to continue a complex, modern society by itself.

**5. Personal:** This level infers complete control of our own fate. Not true. Primitive survival required at least the support of a village, but still reflected the sum of individual contributions. Small, autonomous groups cannot possibly dictate leadership on the required national level unless they are just a part of a much larger movement with a common voice.

### CGF B Bibliography

Listed below are most of the books in my library, which bear directly on the interdependent subjects of energy, economics, peak oil and population. Most are available from amazon.com, some for as little as one cent plus shipping. Many of the titles use the words "limits" or "collapse." Some are decades out of print. Obviously, I can't have read them all completely. I'm just a messenger. Time has run out. Is anybody listening? (Ed.: Due to space limitations, this list has been condensed.)

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*Views differ on the population “problem”:*

# Debunking the over-population myth

BY SEAN LANAHAN  
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LANAHAN95@LIVE.COM

**M**any in the world today...claim the world is on the brink of unsustainable failure due to our growing population. The entire population of seven billion people could take a nap inside the state of Connecticut. The same amount of people can live inside the state of Texas with the same population density of New York City, leaving the rest of the globe devoid of human life.

But that is not enough for most skeptics. They want to know about the impact of a growing population on food, water, air, waste, forests, oceans, animals, etc. Let's take a look at food. Is there enough? The earth is more than able to support not only seven billion souls, but up to two to four times as much with a little work and little impact to other life.

Most of the raw data that I use to prove my points are from official government sources such as the FAO (Food and Agriculture Organization of the United Nations) and USDA (United States Department of Agriculture).

## Calculating calories

Using the FAO world wide food production reports from 2010 and standard nutritional data, I have calculated the total calories produced by each food category, divided by seven billion people per year (Calories, Per Person, Per Year - C,PP,PY):

- Grains (corn, wheat, rice, etc.) - 848,810
- Roots and tubers (potatoes, yams, carrots, etc.) - 113,856
- Oils, pulses & nuts (olives, soybeans, peanuts, etc.) - 302,586
- Fruits and vegetables (oranges, tomatoes, lettuce, etc.) - 78,091
- Meat and eggs (chicken, beef, pork, etc.) - 113,856
- Fish and seafood (salmon, clams, lobster, etc.) - 21,496
- Dairy (milk, cheese, butter, etc.) - 61,581
- Raw sugar (sugar cane, sugar beets, etc.) - 121,483

Total of all calories produced by God's creation - 1,661,460 calories, per person, per year or about 4,552 calories, per person, per day! Multiply by seven billion people and you have an approximate grand total of 11.63 quadrillion calories that were

produced in the year 2010.

Considering an average healthy caloric intake of 2,000 calories per person per day (2000 calories x 365 days = 730,000) 730,000 calories are consumed per person, per year.

Generally men consume more than women. In 1971 American men consumed 2,450 calories per day, while women consumed 1,542, a combined average of 1,996 calories per day.

The earth produced 1,661,460 C,PP,PY minus an average consumption of 730,000 C,PP,PY = 855,519 extra calories, per person, per year. More than enough to sustain an additional population of seven billion for a total of 14 billion people!

## Land use

According to the FAO, there are 12.07 billion acres of agricultural land, all land capable of producing food. This includes arable land of 3.41 billion acres capable of producing temporary crops such as grains and vegetables. Permanent crop land of 375.8 million acres producing nuts and fruits in trees or vines. Pasture/meadow land of 8.28 billion acres providing for livestock foraging. Of the land above, only 769.8 million acres is irrigated. Most often irrigated lands can produce twice as much as non-irrigated. Total acreage of agricultural land per person equals 1.725 acres.

All things being equal, 1.725 acres of land produces 1,639,964 calories per year (calories per person, per year, minus calories from fish and seafood). This is well over twice as much land as needed per person with very little that is actually irrigated!



**Where do all the calories go?**

A good chunk of the extra calories produced each year are consumed by the people of the planet. The average American diet in 1971 was about 2,000 calories a day. According to a survey in 2004, that average consumption has expanded to 2,247, over a 10% increase and has likely increased even more eight years later. It's not just Americans that are eating more, but most of the world as well. From 1961 to 2003, the available (for consumption) calories per capita has risen from 2,254 to 2,809, over 24% increase in about four decades.

In that same four-decade span, the global population blossomed from three billion in 1961 to 6.3 billion in 2003, over double the population. At the same time, life expectancy rose from an average of 52.2 years in 1961 to 66 years in 2003, over 25% increase across the globe. Not only did the population more than double, but we lived longer and consumed even more calories over a lifetime. The Earth, along with our fruitful domination, creativity, our hard work and ingenuity, and God's blessed provision, has been able to produce more than enough. Because we have been created in God's likeness, we have the ability to do amazing and wonderful things.

**Over-abundance**

We've actually created an over-abundance of food. So much so that hundreds of thousands of calories per person, per year (C,PP,PY) are lost or wasted every year.

Roughly 564,532 (34%) calories, per person, per year are lost or wasted through the activities of harvest, post harvest, processing, distribution, and consumption.

The developed world (Europe, North America and Industrial Asia) is very good at preventing losses from harvest to distribution, but is rather wasteful from retail to the dinner plate. The opposite is true for the under-developed world (Africa, Asia and Latin America). Often their largest losses occur from harvest to distribution, but they are very efficient at the consumption level. What

is the reason?

The developed world has the equipment, infrastructure, and experience to efficiently move product from harvest to retail with relatively little loss. So much so that now it costs a relatively small portion of personal spending. Thus, what is not valuable to us is often taken for granted, the West has become picky, with little regard to throwing away food that is no longer "appetizing."

For example, for the past 80 years, the citizens of the USA have enjoyed a steadily shrinking food budget. From 1929 to 2010, food expenditures as a percentage of disposable income fell from 23.4% to 9.4%. At the same time, the food demand from a burgeoning population has grown. Food production over the past 80 years has not only kept pace with demand, but surpassed it by a great amount. Though I appreciate Benjamin Franklin's quote "waste not, want not," I can't help but think that in today's overabundance, the better term is actually "want not, waste much."

The under-developed world unfortunately does not have the equipment, infrastructure, and experience needed to efficiently move product from harvest to retail. Threshing grain by hand, for example, incurs greater losses than if done by machine. However, once the product reaches the store and the dinner plate, the under-developed world becomes very efficient in consumption. Food costs as a percentage of personal income are greater in the

developed world, thus they value food more and waste little.

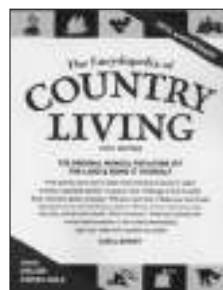
If it were possible for the developed world to consume more efficiently (the same as Sub-Saharan Africa), and the under-developed world were to use modern equipment, infrastructure, and experience (the same as North America and Europe), by my estimation food loss and waste could be reduced from 34% to 19.8% — a savings of about 235,213 C,PP,PY. Keep in mind that if the under-developed world were to use modern farming practices, not only would they preserve more food, but they would produce more as well.

For example, modern irrigation can increase wheat crop yields per acre from 32.8 bushels per acre to 71.4 bushels per acre, a 117% increase. At 60 lbs. of wheat per bushel, an extra 3,434,628 calories can be produced. This is enough to feed an extra 4.7 people, per acre, per year (at a 2,000 calorie diet per day) just by adding irrigation. Many may wonder why Africa is starving. The answer has nothing to do with the earth's ability to produce what they need. Rather, the cause is a ridiculous geo-political aberration surrounding faulty notions of "sustainability."

**Feed people or cars?**

There is also a contingent of food produced and wasted that does not end up in a landfill, but actually makes it into your fuel tank. Vegetable cooking oil is now being recovered on a large scale in the West, chiefly used for bio-fuels, specifically

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bio-diesel. Some corn, sugar beets, and sugar cane (not included in the food data above), is being grown for bio-fuels such as ethanol. Some agricultural lands that are used to grow fuel could produce food for human consumption instead. More calories would become available to feed more people instead of fueling cars and trucks.

### Farming in Israel

From its founding, Israel's farming has been a monumental effort of self-preservation. They have literally had to cultivate hard, rocky soil in an arid climate to produce food for themselves. Over the past 60 years they have become extremely successful.

Wikipedia states: "Modern agriculture developed in the late nineteenth century, when Jews began settling in the land. They purchased land which was mostly semi-arid, although much had been rendered untillable by deforestation, soil erosion, and neglect. They set about clearing rocky fields, constructing terraces, draining swampland, reforesting, counteracting soil erosion, and washing salty land. Since independence in 1948, the total area under cultivation has increased from 408,000 acres (1,650 km<sup>2</sup>) to 1,070,000 acres (4,300 km<sup>2</sup>), while the number of agricultural communities has increased from 400 to 725. Agricultural production has expanded 16 times, three times more than population growth.

"Water shortage is a major problem. Rain falls between September and April, with an uneven distribution across the country, from 28 inches (70 cm) in the north to less than two inches (5 cm) in the south. Annual renewable water resources are about 5.6 billion cubic feet (160,000,000 m<sup>3</sup>), of which 75% of which is used for agriculture. Most of Israel's fresh water sources have been consequently joined to the National Water Carrier, network of pumping stations, reservoirs, canals and pipelines which transfers water from the north to the south.

"The area of irrigated farmland



has increased from 74,000 acres (30,000 ha) in 1948 to some 460,000 acres (190,000 ha) today. Israeli agricultural production rose 26% between 1999 and 2009, while the number of farmers dropped from 23,500 to 17,000. Farmers have also grown more with less water, using 12% less water to grow 26% more produce."

The population of Israel has increased from 1.25 million in 1950 to 7.48 million in 2012, a 500% increase. The otherwise "useless" land has been subdued and dominated to the point of not only producing enough food for its rapidly growing population, but also an abundance for export to the tune of 22% of production. Since 1948 they expanded the total area of cultivation from 408,000 acres to 1,070,000 acres (about 150% increase), while increasing production 16-fold. This is from what was once considered desolate wasteland (read Mark Twain) combined with some sweat equity and God's blessing.

### New technology

What about the deserts of the world? Consider the Seawater Greenhouse:

"A single Sahara Forest Project facility with 50 MW of concentrated solar power and 50 hectares of seawater greenhouses would produce 34,000 tons of produce, employ over 800 people, export 155 GWh of electricity and sequester more than 1,500 tons of CO<sub>2</sub> each year."

Let's project this amazing potential. The major hot arid deserts cover 15,577,000 sq.km. If but a meager 1% of that desert space was used to build

these types of seawater greenhouses with the above specifications listed in the article:

- 311,540 facilities could be built (50 hectares apiece) 10.592360 billion tons of food could be produced per year (about three times as much as the current grain, tuber, root, fruit and vegetable harvest, equaling 3.580572593 billion tonnes per year) At a paltry 25¢ per pound, the value of that produce could bring \$5.29618 trillion dollars in sales.

- 48.2887 trillion kilowatt hours could be generated (at a better than fair price of 10¢ a kilowatt hour, \$4.82887 trillion dollars of revenue could be generated). And 249.232 million jobs could be created. These SWGs are not fantasy-land daydreams, many are already in existence and more are slated to come on line.

### No longer doom and gloom

At this point, your doom and gloom about the planet's prospects should be lifting slightly, maybe causing a half smile to form across your lips. There is more than enough room, food, water, trees and space for all our garbage. You've heard it said that "necessity is the mother of invention," God, man and the earth have not only met every demand from a burgeoning population but have exceeded them abundantly! It's true that the human family has exploded in growth over the past several decades, but as I have demonstrated, our ability to produce food has grown even more so, creating huge surpluses, bringing down the costs for food for all people.

Consider these calculations. If you were to take every single man, woman and child on the face of the planet (nearly seven billion precious souls to date) and make them lay down on the ground side by side and head to toe, laying out an immense "human carpet," that "carpet" of human beings would not even cover the state of Connecticut.

Here's the math. This allows 18 square feet per individual (3' x 6'). Granted, children would take up much less room, but they are a

bit squirmy and don't sit still very well.

- 18 square feet times seven billion people equals 126 billion square feet.
- 27,878,400 square feet are inside one square mile.
- 126 billion square feet divided by 27,878,400 equals 4,519.63 square miles.

Connecticut is the 48th largest state at 5,544 square miles, only beating out Rhode Island and Delaware in size. That's right, the entire population of planet Earth can lay down and take a nap inside the state of Connecticut with some room to spare, leaving the remainder of the globe completely uninhabited.

"But all those people couldn't possibly live like that!" you exclaim. "Come on dude, get real!"

Okay, what if all of those seven billion inhabitants were to live in one big fully functional "mega city," the same size population density of New York City? They would fit inside the foot print of the state of Texas, again leaving the remainder of the globe completely devoid of human life.

Here's the math. The population of New York City is 8,175,133 and covers 303 square miles.

- 8,175,133 divided by 303 equals a population density of 26,980 persons per square mile.
- Seven billion people living at a population density of 26,980 per square mile would require a mega city, which encompasses 259,451 square miles.

The state of Texas sits on 268,580 square miles—more than enough room. But, I doubt them Texans would appreciate all them city slickers moving in on their turf.

The entire land mass on planet Earth (excluding Antarctica, and who would want to live there anyway?) is 52,208,738 square miles. Our fictitious "mega city," housing every single individual on planet Earth, some 259,451 square miles, would only take up 0.5% of the entire land mass. That's right, only half of one percent, leaving 99.5% of terra firma completely uninhabited.


Fortunately for most of us, we don't have to live in such relative "claustrophobic" conditions.

Unfortunately, a population control movement in the world today is seeking to scare the masses with the "over-population" myth of "unsustainability." A scare tactic used by them to control the lives of individuals and justify all kinds of dehumanizing acts, primarily abortion and euthanasia.

**Supporting links:**

- <http://faostat.fao.org/site/567/Desktop...gelD=567#ancor>
- <http://nutritiondata.self.com/>
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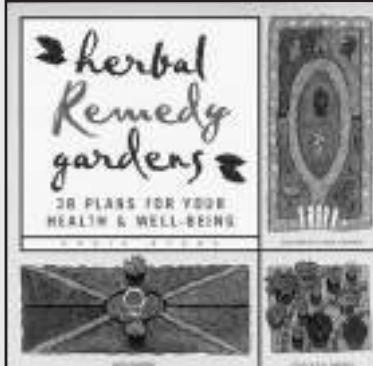
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# Instant jobs & bartering in challenging times

By Jeffrey R. Yago, P.E. CEM

When economic times get hard, and unemployment rises, there are still many ways to create your own full-time or several part-time jobs if you find yourself facing a job loss.

It's true that during an economic downturn there are fewer movies and less eating out, reduced driving, and more stay-at-home mac and cheese dinners; but there will always be people with money who need the services of others. It's also possible to acquire things you need from others by trading or bartering without any cash involved.

## Start a family business:

I own a lawn mower, weed-eater, log splitter, wood chipper, golf cart, and portable generator, but at least one is always malfunctioning, needing parts and repair. However, I can never find anybody who knows what they are doing and the large equipment repair centers are always months behind. I have an almost new Honda generator that I have returned to the local service center three times with the same problem and they still cannot fix it right. In the past I would usually just go buy a new one, but during hard times more people have to make do with what they have, and this means repair instead of replace.

Every town needs somebody who is great with tools and understands small engine repair. Start-up costs are very low if you already own your own hand tools and have a small shed or garage to work from. Most repair

parts are available over the Internet with overnight delivery, so you can get by without having a large parts inventory. Industrial catalog supply houses sell starter kits of all types of small hardware. For example, for under \$20 you can buy a partitioned plastic box containing a few of every size bolt you will need. Similar kits are also available with every size of metric bolts, retainer rings, shaft key stock, washers and springs. There are several schools offering home study courses on small engine repair, and many trade schools offer night classes that teach the basics.

I know a really agile man who can climb anything, and he is making a great living cutting down or topping large trees in people's yards. Storm damage makes people wary about tall trees near their home, and most adults cannot climb trees, or lack special climbing gear. With only a chainsaw, several ropes, and climbing gear, he can quickly climb to the top and bring down the largest tree—one limb at a time with no danger to any nearby structures. Since most clients just want the tree removed, this is also a great source of firewood he can split and sell later. Sometimes he brings a helper along to do the rope work from below and clean up. Since he does not have a checking account he only accepts cash. No doubt his back-pocket accounting system could lead to future tax issues, but his yearly income most likely is below the threshold for paying taxes.

Anyone who owns a riding lawn mower, tiller, pressure washer, or farm tractor can always find neigh-

bors willing to pay cash or perhaps trade with others for these services.

I wrote an article in another publication on ways to make your own diesel fuel for 80¢ per gallon out of waste cooking oil discarded from any fast food restaurant. While the process is very simple, it does require some specialized tanks, filters, and pumps, and these are available in do-it-yourself kits for under \$2,000. The article includes contact information for suppliers of this equipment and directions for getting started. With the high cost of diesel fuel, others are finding out it is easy to produce all the fuel they need for their diesel vehicles and farm equipment. However, you better make friends fast with the manager of your nearest restaurant or you may find yourself fighting with other diesel fuel producers trying to pump out the restaurant's waste oil tank each week.

I know a husband and wife team who has started an office cleaning service. This is a perfect second job since office managers want the cleaning and trash removal done after hours or at night. I know another couple who provide window cleaning services for stores and offices having lots of windows, and another couple who have started a mobile pet grooming service. I know a young student doing car detailing by working out of an old panel truck he drives to each client. The great thing about all these service businesses is they only require basic tools and supplies.

If you are facing a very long period of unemployment and are currently just starting to receive unemployment benefits, this would be a perfect time to take a few trade school classes that could lead to a totally different career path.

## Re-training:

While it's been longer than I can remember when I was in high school, my engineering work has included projects in hundreds of high schools and trade schools over the past few years. I was amazed to see all of the modern trade school facilities in today's high schools. Not only did I see an automotive shop in every school,

but most schools also included shops teaching block laying, wood framing, electrical wiring, hair stylist, culinary arts, computerized machine tools, child care, computer aided graphics, photography, roofing, welding, steel fabricating, basic electronics, computer repair, and greenhouse gardening. I also found that some high schools and trade schools offer adult night classes for retraining at little or no cost. Enduring months of unemployment may not be enjoyable, but using this otherwise lost time learning a new skill set or trade can make the time much more rewarding.

**Bartering and trading:**

I think bartering or trading for the products and services you need is a lost art that is starting to come back into public acceptance as cash resources become scarce. Our ancestors found that even when poor, it was possible to trade garden produce, handmade furniture, or their own labor to others who were willing to trade for things they had in return. While you may no longer find a local dentist willing to trade filling your kid's cavity for a chicken or goat, you still can trade for many of the things you need without using cash.

You may be surprised to learn that there is a growing number of others in your town who are willing to trade the things they have for sale if offered things they need in return. To help put traders together, there are now many websites advertising products and services available for barter or trade. I started bartering as a teenager when I had no money, but did have the skills to repair household appliances. I found I could ride my bike

around town and collect discarded or defective toasters, radios, and other electrical appliances. I also found that most of these only required a good cleaning and a new power cord to put them back into working order. I then sold these for cash to purchase hand tools and supplies, or traded with others who also had limited cash but were willing to give up something they had that I needed. What many people may not realize is that bartering is actually better than a cash transaction since both people get exactly what they wanted. Nobody feels like they paid too much or got ripped off. Everyone has something that they can live without and no longer need. You both are getting something from someone else that is exactly what you need, and no cash changes hands.

There are people who get really good at bartering and I have known some real "horse traders" who made a living just trading for everything they needed. Sometimes this means trading for something you do not really want because you know somebody else who does, requiring you to make two separate trades to end up with what you really wanted. Check your hometown paper for scheduled "swap meets" or go in with several neighbors and have your own garage sale.

A word of caution is in order. It's one thing if you trade a neighbor your unused weed-eater for a case of beer. However, if you plan to barter or trade with others on a regular basis, be warned that yes - there is a tax form that collects income taxes even though no cash changes hands. IRS Form 1099-B "Proceeds From Barter

Exchange" requires you to report as income the "Fair Market Value" of anything you trade, even though you are just exchanging one item for another and receive no cash. Currently the tax code kicks in during any tax year when your bartering items were valued at \$600 or more.

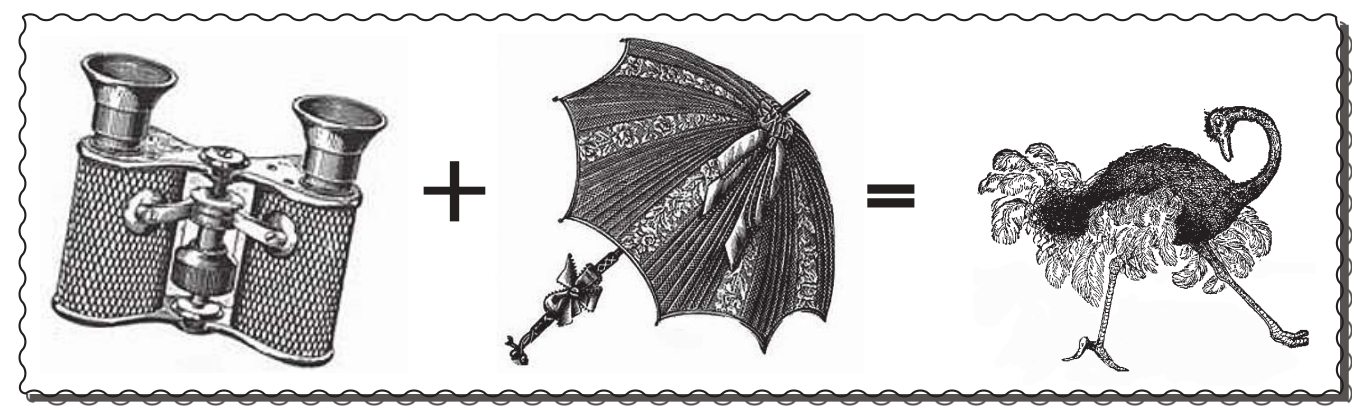
When economic times get difficult and job loss really puts a dent in your cash flow, most people have a large accumulation of "things" that they no longer need, but cannot sell because everyone else is also suffering financially. Clearly bartering or trading is an easy way to get the items you both want, instead of cutting the price each week until finally sold through a local newspaper ad.

This country is still facing a mountain of debt, a real risk for hyper-inflation as cash continues to lose its value, and a slow job recovery due to business belt-tightening when hit with higher taxes. I hope you find something in this special issue that helps you improve your income or job prospects during these difficult times.

**Barter and trading web sites:**

- Swap Ferit: [www.swapferit.com](http://www.swapferit.com)
- Barter Quest: [www.barterquest.com](http://www.barterquest.com)
- Barter Business Unlimited: [www.bbarter.com](http://www.bbarter.com)
- Trade Away: [www.tradeaway.com](http://www.tradeaway.com)
- U - Exchange: [www.u-exchange.com](http://www.u-exchange.com)
- Swap Treasures: [www.swaptreasures.com](http://www.swaptreasures.com)
- Swap Market: [www.market.swap.com](http://www.market.swap.com)

*Jeff Yago is a licensed professional engineer and certified energy manager with over 30 years of experience in the energy conservation field. He has extensive solar photovoltaic and emergency preparedness experience, and has authored numerous articles and texts. His website is [www.poforyou.com](http://www.poforyou.com).*



Homestead business:

# Succeeding in an offline business

## You don't need a computer to run a business on your homestead

By JEFFERY GOSS, JR.  
PO Box 14122  
SPRINGFIELD, MO 65814

As recently as several years ago, I didn't anticipate that I would ever be writing an article like this one. After all, I never anticipated that merely not using the Internet would be considered by some people an oddity, like being "off-grid" often is.

Read business magazines and you will see hundreds of articles telling people how to use computers and the Internet in their entrepreneurial ventures. Yet you will seldom see anything written about how to do business *without* using computers or the Internet. It amazes me more and more every year, how many people think you can't run a business without those technologies. It's mainly white-collar city people who think this, but I have occasionally encountered the same assumption in rural America.

### You're not alone

First, let's get some perspective on this. For all the millions of folks who use the Net, the fact remains that there are billions who don't. Approximately 90% of the world's population consists of non-computer users. There are roughly 100 million Americans and 18 million Canadians who don't use the Internet, according to relatively recent statistics. So if you think you're the only one who's not online these days, you're wonderfully wrong. In fact, non-users are a *majority* in most rural areas in North America.

So how do you run a business without a computer? Quite simply, you do it the way businesses have been run for the past century or two.

It's not incredibly hard; you just need the basic skills of research, networking, and recordkeeping. Those three traditional business skills were around long before the computer was ever invented. As for communication, there is almost no important business activity that cannot be done by mail, telephone, or fax. Up until recently, everyone in business knew how to do these things. But in the past decade or so, many small business owners have become so dependent upon the Internet that they would be "basket cases" without it. And the worst part is that they *think* it's not feasible to operate a business off-line, so they don't even try.

The primary purpose of this article is to help those who have lost these skills, or who never learned them.

### Finding information

What do you do when you need to find some information, maybe an address or telephone number for another company, and you don't have it (and no Internet to look it up)?

The local chamber of commerce in the town where it is located will probably know about it. Your local chamber of commerce will probably have a copy of a directory that lists the addresses and phone numbers of chambers nationwide. Just call the appropriate chamber number, and ask about the business you need to find.

If you are trying to contact a farm or a rural or agricultural business, you can often find the information by calling the cooperative extension office closest to the farm or company. The cooperative extension (in the United States) is a program operated by each state's university, and each county, district, or parish usually

has its own extension agent and one or more specialists. One university generally operates the program in each state. You can find the county office number by calling the ag department office for that state.

Another way you can sometimes find the address or phone number for a farm is by contacting an association that deals with the farm's crop or animal specialty. There are associations for specific crops (e.g., Kansas Soybean Growers, Missouri Nut Growers Association), particular breeds of livestock (e.g., Heartland Highland Cattle Association, Finnsheep Breeders Association, American Angus Association, etc.), and particular farm. For instance, if you are trying to make contact with an organic soybean grower in Missouri, you might call the Missouri Organic Association and the Missouri Soybean Growers to find out if he/she is a member. Then, if you don't find out that way, you might call the extension office in the county where the farmer appears to be located.

To track down an individual, or an unlisted home business or farm is sometimes a bit harder, but not always. If the person is listed in a phone book this will be available nationally, through directory assistance at any major library. Instead of calling a paid directory assistance service, try first calling the reference desk at your closest large library. The service is free, and the librarian can usually find the address and/or telephone number of anyone in the nation (if you're in the U.S.). In Canada, you may have to dial a library number in the same province as the person you are trying to locate.

Newspapers, city halls, and license offices are other sources of information that can often help

you find a number or address for a business, church, organization or notable individual in a particular community. Sometimes it takes two or three brief telephone calls to find out how to reach someone, but if it is a person or business with any public or community presence at all, it usually won't take more than four calls. Keep a notebook or sheet with a list of the "intermediate" contacts you use a lot. For example, if you need to locate and contact companies in Montana frequently, keep the phone numbers for Montana newspapers, extension offices, and chambers of commerce. You'll soon have a collection of the contacts with which to work. Then you will be able to quickly locate almost anyone you need to find, with just one or two calls, and no more time spent than a few minutes.

What about finding other kinds of information, such as market data? Usually the most commonly sought farm commodity and livestock prices are published in the farm section of your local newspaper, and aired on the radio. Wherever you are in North America, you can almost certainly find a radio station with a daily "ag news" segment, usually in the morning or at noon. If you don't know which stations broadcast this information or at what times, just ask around. If you are looking for harder to find U.S. crop prices (e.g., lentils or pecans), check with the National Agricultural Statistics Services (NASS) by calling 800-727-9540 or 202-720-0127. If you want to check up on farm commodity futures, call Dreyfus Commodities (the source of many newspaper agricultural reports on price) at 888-381-0760.

Sometimes you will encounter a telephone number that appears to be "out of service." Although the number may indeed be decommissioned, quite often (especially in the case of numbers taken from old sources) the area code has been split, and the number remains the same but in a different area code. For example, New Mexico was divided into two area codes in 2007. Look on a map of area codes, (usually found in the

front pages of your phone directory) and try to figure out the likely current area code for the old number.

### Hit the books

You can find most of the reference information you need from a surprisingly small collection of books. Some of them are probably already on your bookshelf. Reference works are available on just about any subject, and the most useful are those with a large volume of entries as opposed to a long section on each of a more limited number of entries. Try to find directories or dictionaries of information on subjects you need to research often. Certain books contain a wide variety of information, such as the *World Almanac*, which comes out every year and is a quick reference on commonly sought data. The populations and leaders of countries, the dates of historical events, the membership numbers of well-known associations, the basic



stories of major news events during the past year, and hundreds of other bits of information; this one volume alone saves a great deal of research.

The *Pocket Reference* guides are good for scientific and mathematical information, if you often need to look up those sorts of things. *Farmers' Almanacs*, plant and insect identification guides, state or provincial atlases covering your area, and simi-

lar books are examples of reference literature. A major way that individuals and businesses have obtained necessary information for the past few hundred years is by keeping a small library of reference works to consult as the need arises.

### Advertising, announcing, and awareness

In addition to paid print and radio advertising, there are a number of places where you can advertise for no cost or almost no cost. Some newspapers allow free classified advertising; the *Four-State Farm and Home* (Missouri, Arkansas, Kansas and Oklahoma) is an example, and one that tends to get good results, although you have to send in the ad the same month as you clip the ad form from the paper.

Local bulletin boards (found at stores, post offices, laundromats, etc.) are another easy venue for free advertising, but not always the highest-volume way to get response. However, since there are a relatively small number of people who are likely to see the board, there is actually a high *percentage* rate of response. Sometimes you can make response easier by leaving the bottom of the flyer as cut strips containing your telephone number, so readers can tear one strip to take home. You will see this technique often on bulletin boards. Some of the best places for such ads are in small-town post offices, and in places where the types of people you are trying to reach congregate. (Note that bulletin boards and flyer tables in libraries are usually off-limits to for-profit business ads.)

Simple roadside signage is an effective form of advertising for some businesses, especially for farm-related businesses. For example, if you breed Cheviot sheep, you might put up signs stating "Cheviot Rams & Ewes For Sale," followed by your address and phone number (large and legible enough to be noted without effort by potential buyers). The signs could be located not only at your own farm, but at other places in your area, on other

farmers' land (with their consent), or at road intersections, although in some places the highway crews will remove intersection signs. (Know the local laws.) Depending on what you are selling, you may even find it worth your while to put signage up in surrounding counties or townships. Even if your business is not a farm, road signs can still be effective advertising in many cases. Recall the old "Burma Shave" products, which were promoted almost exclusively by humorous rhymes posted on signs placed along rural roadways.

If you are trying to buy or sell a one-time item or series of items, you can use the radio trading-post shows that air in many communities. Most of these shows are on AM (MW) stations during the morning hours, but some stations air them later in the day. You simply call into the show, tell them what you have to sell or are seeking to buy, and leave your telephone number. This is a free way to make the contacts. In some regions there are free advertising papers that serve the same purpose; in Missouri, the *Weekly Trader* is a place to advertise any item priced under \$1,000 without any advertising fee; the only stipulation is that the item may not be a live animal.

Some businesses have Fax on Demand (F.O.D.) service, in which the interested party can use a fax machine to get an automated flyer or bulletin about the business. This service was quite popular for some time, and is still standard in some industries, but can be expensive to set up. It may be worth doing if you have, or anticipate, a high demand for information for your business, but otherwise it would likely be uneconomical.

#### **Making connections and transactions**

Networking, the art of connecting individuals is one of the fundamental skills needed in any business.

In business-to-business (B-to-B) communications, you will probably have to deal sooner or later with the hubris of the online community. Sometimes they will assume you are

a computer user even if they have no reason to think so, or they will give only electronic methods to contact them. These are some examples of things you will likely hear:

"I can send you our basic information, what is your e-mail address?"

"Just go to our website to get your questions answered, it is...."

"Feel free to contact me online...."

"I'm sorry, I don't have that address, you will have to look it up on (insert any popular computer search engine)."

"Instead of just telling me this, why don't you send me an e-mail?"

All of these are typical examples of how business people sometimes assume, either out of arrogance or ignorance, that everyone (or at least everyone worth dealing with) uses the Internet. This assumption is encountered much more often in some industries than in others, but you will likely encounter it at some point. Often the easiest way to deal with it is to calmly say, "I don't do email" or "I don't use a computer." Usually the person you are talking to will at that point suggest another method of communication, or ask you how you want to do it, and then you can suggest an appropriate method (telephone, fax, postal mail, etc., depending on your situation.) Once in a while, though, someone will say that because of business policy, "we will only send it by e-mail" or "this is only available online." These business people are generally not worth dealing with anyway, if they are unwilling to accommodate traditional methods of communication. But in such cases it might be good to advise the business owner, in a friendly way, with statistics such as those given at the beginning of this article, that there are many other off-line people, and that their business is being lost. These conversations often become quite interesting, and even constructive.

Accepting payment via debit or credit card is sometimes a challenge

for off-line business owners, but it can also be done in various ways. Some payment processing services accept written lists of charge card transactions (as for a mail or catalog-based business); for a storefront or other business in which customers/clients physically come to you, or a "merchant machine" can be obtained at a relatively cheap price, allowing you to "swipe" cards.

#### **For the record**

Keeping records is an important habit for whatever you are doing, whether it be farming or freelancing or operating a storefront or service business. Human memory is notoriously unreliable, and money is notoriously adept at slipping through cracks (just as time does). Even records you might not think are important should be saved, since you never know when you might need them.

With computerized businesses, much information is automatically recorded electronically. But with a traditional, "analog" business, you must do it on purpose. I use paper folders that are color coded to organize documents. A black folder holds orders (filled on the left and outstanding on the right), a blue folder holds formal letters and contracts, a darker blue one holds information sheets, etc.

You should always have at least one notebook devoted to keeping contact information. This "address book" can be divided according to region (local contacts, long-distance, categorized by state or province). You can arrange them by subject or type of significance, but this is generally not a good idea since those things can change, and quite often someone you contact for one reason one time will be the person you get in touch with for a different reason later on. You can also do strict alphabetization, although you should remember to leave enough room that you don't find yourself unable to squeeze in a particular address or phone number at the correct place (e.g., trying to find a spot for John Smith's information

**Last train out to get off the grid?**

# Amazing "Solar Generator" Is Like Having A Secret Power Plant Hidden In Your Home!



**BY MIKE WALTERS**  
STAFF WRITER, OFF THE GRID NEWS

New solar powered backup provides instant electrical power in any outage or disaster.

If you have ever wanted to have an emergency backup system that supplies continuous electrical power, this will be the most important message you will ever read. Here is why.

There is now a completely portable (and ultra-high efficient) solar power generator which produces up to 1800 watts of household electricity on demand when you need it most. News of this "solar backup generator" (it's the first "off-the-grid" breakthrough in 50 years) is spreading like wild fire all across the country!

Why?

The answer is easy. You see, this solar generator is extremely powerful and yet very simple to use. It produces continuous electricity and runs with absolutely no noise whatsoever. It emits no fumes. But the best part about the solar generator is that once you own one, you can...

## Generate Free Electricity From The Sun!

Charged by the sun with a powerful solar panel, the unit then stores the power for your use when you need it. We all face natural disasters, with hurricanes, tornadoes, snow and ice storms cutting off electrical power to millions of Americans each year.

Then there are man-made disasters and outages. Blackouts and rolling brownouts are becoming common in many parts of the United States as our grid gets stretched beyond its capacity.

The truth is, we are extremely vulnerable to all kinds of meltdowns that can create temporary or even permanent electrical outages. That's why if you are one of the few Americans that thinks ahead, you need to...

## Have A Solar Powered Backup in Place!

When you compare a solar generator to a gas generator, the difference is pretty remarkable. Here's why. First, gas generators make an incredible amount of racket... if you can even get them started in the first place. With a gas generator, you pull and pull some more, all because your generator has been sitting in the cold and the carburetor is playing hard to get. This, of course, is not a lot of fun in the dark. Another reason to avoid gas generators is that you just can't safely run one in your house. But the

number one reason you don't want to be caught in a time of crisis with a gas generator is...

## Gas Stations Can't Pump Gas Without Electricity!

It's true. When the power goes out, you're left with whatever gas you have on hand because the gas station pumps all run on electricity. A few gallons stored in a gas can means a little electricity for a little while, then it's quickly "back to black."

Here's the thing: I could go on and on about life without electricity and what a nightmare gas generators can be. But here's the bottom line: Solutions From Science is now offering an amazing power generating system that can provide plenty of electrical power in the event of an outage or emergency. And the best part is that you can have the power safely in your house.

## A True Breakthrough in Home Power Generation!

Let me try to explain the features and benefits of a solar generator as simply as possible. If I could bring one over to your house and let you start plugging in appliances, you would immediately understand what all the fuss is about. But I can't do that. Anyway, here are some of the reasons I think you'll want a solar generator:

### #1. Maximum Power in Minimum Time.

The solar generator can be set up in just a few minutes. Then, all you have to do is start plugging things in. It can run both AC & DC appliances anywhere... anytime.

### #2. Back Up Power When You Need it Most.

It's called a "solar backup" because it's designed to come to your rescue when power trouble starts and your lights go out. Run a small refrigerator (high efficient ones are best) to keep your food from going bad.

### #3. Portable Power.

If the going ever gets too tough where you are and you decide to "get out of Dodge," you simply throw it in the car and take off to a safer destination.

### #4. Generates Permanent Power.

The unit provides 1800 watts of electricity at peak power. That's enough to run many appliances in your house. The generator is recharged constantly by the sun allowing you to use the system while charging it at the same time. Many users choose to keep appliances plugged in permanently to reduce electrical costs and help pay for the unit.

### #5. Multiple Uses.

You can use your solar backup to run essential appliances when emergencies arise. You can recharge phones, run shortwave radios, televisions, lights, fire place or furnace fans, as well as computers and printers. Plus, if you need to work in the woods at the cabin or in a boat, you can use the solar backup to run power tools, trimmers, blowers and coffee makers.

### #6. Plug And Play Means instant Power.

The emergency backup system comes ready to go. Just start plugging in your favorite household essentials.

By the way... the units go for about \$1697.00 plus shipping and handling.

But I'm going to show you a way around that. I have negotiated a very special offer for readers of Countryside magazine.

Here's the deal. You can use coupon code **CS120** to get one for \$200.00 off as a reader of Countryside magazine. To do that, the absolute fastest way to get one is by going to the website at:

**[www.MySolarBackup.com](http://www.MySolarBackup.com)**

If you would like to order by phone, you can call toll-free by dialing **800-218-4615**. Tell whoever answers that you want the "Solar Backup Generator" system rushed to you and you have a coupon because you are a reader of Countryside magazine.

Or, if you prefer to pay by check or money order (payable to Solutions From Science), simply send your payment to:

**Solutions From Science**  
**Dept. Solar Backup CS120**  
**815 W. Main St.**  
**P.O. Box 518**  
**Thomson, IL 61285**

I'm so convinced every American household needs a Solar Generator, that I've arranged for this special deal to get one to you at this dirt cheap price. (When you call, ask about their free shipping offer as well.)

**Just hurry, call 800-218-4615**

Sincerely,  
Mike Walters

**P.S. One more thing, it's very important.** Make sure you use coupon code **CS120** to get all the discounts you have coming as a reader of Countryside magazine.

but finding no line space between the entries for Mary Sloan and Joe Snyder, oops!).

**Pulling ink to paper**

Another thing traditional business owners sometimes wonder is how they can print their own announcements, flyers, advertisements, questionnaires, and so on. But, of course, these things were being done long before computers were ever invented. For many types of businesses, you can use a small copy machine's shrink-and-enlarge function to make bold headings, designs, and layouts. Use a typewriter to make the captions and perhaps symbol designs (symbol art is a well-recognized practice) on a 4-1/4" x 5-1/2" sheet from a note pad, put it on the copier glass with the top of the paper on the top line and centered to the arrow, and expand to 200%. The resulting letter-sized sheet can be used as a frame to type any more desired text and add photos.

The typewriter can also be used, of course, to write business letters and formal correspondence. Chances are you already have one, but if not, a used typewriter can easily be found for under \$50. (One of mine was purchased for \$5, no joke.) The only caveat is that a typewriter of a discontinued brand, such as my \$5 Silver Reed, is hard to get fixed or to get parts for. The easiest typewriters to get fixed are Brother, IBM (including Lexmark and Selectric), and Olympia, all of which are companies still in existence. For perhaps \$100 you can obtain a DP machine or word processor, which is a machine used by some small-town newspapers. It can lay out text and you can erase before printing if there is a mistake. Some models have spell checking, as most computers do. And if you learn how to use it, you may be able to obtain a small used letterpress (a "job press"), a stand-alone typesetting and printing device for not much over \$100.

Regardless of your reasons for not having or using a computer, there is no reason for that to keep you from operating a small business even a large one.




**Show your enthusiasm for homesteading!**  
Wear this comfortable, brand new, high-quality, **COUNTRYSIDE T-SHIRT**

**Now Available In BROWN!** **Makes a Great Gift!**

**Only \$14!** **ORDER YOURS TODAY!**

**COUNTRYSIDE T-Shirt Order Form**  
All T-shirts are \$14.00 each and available in red, navy blue and NEW brown—and two styles. Please specify size(s) and color(s).

Adult size small	Color _____	Quantity _____	\$ _____
Adult size medium	Color _____	Quantity _____	\$ _____
Adult size large	Color _____	Quantity _____	\$ _____
Adult size extra large	Color _____	Quantity _____	\$ _____
Adult size 2 XL	Color _____	Quantity _____	\$ _____
Adult size 3 XL	Color _____	Quantity _____	\$ _____
Women's cut size medium	Color _____	Quantity _____	\$ _____
Women's cut size large	Color _____	Quantity _____	\$ _____
Women's cut size extra large	Color _____	Quantity _____	\$ _____
Women's cut size 2 XL	Color _____	Quantity _____	\$ _____



Order total \$ \_\_\_\_\_  
Shipping & handling \$ 4.00  
Subtotal \$ \_\_\_\_\_  
WI res. add 5.5% tax \$ \_\_\_\_\_  
Total enclosed \$ \_\_\_\_\_

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Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
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Mail to: **COUNTRYSIDE**  
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or call Toll-Free: 800-551-5691 or Fax: 715-785-7414  
[www.countrysidemag.com](http://www.countrysidemag.com)

# Fools for profit

By JERRI COOK  
COUNTRYSIDE STAFF

Way back in 1983, 50 corporations controlled the American media. While people like Ben Bagdikian were labeled alarmists for pointing out the danger of consolidating media into only a few hands, the media mergers continued unabated. In 1992, Bagdikian was widely mocked after publishing *The Media Monopoly*, in which he predicted that before the decade was over, there would be only a half-dozen media companies controlling nearly all of America's radio stations, newspapers, magazines, film studios, wire services, and pool photographers.

As it turns out, Ben Bagdikian was right on the money. Today, six corporations own and control over 90% of media outlets in the United States. Time Warner, Disney, News Corporation, Bertelsmann of Germany, Viacom, and General Electric control both the content and flow of information in the United States. The consequences of such consolidation were predicted in *Business Week* back in 2004, "The danger is that more and more 'news' will parrot the press releases of government, corporations, and lobbyists of the left and right" (*Business Week*, 7/12/2004 Issue 3891, p104 1p).

Another prediction by another "alarmist" has also come to pass. A.J. Liebling, one of America's legendary news correspondents of the last century, was one of the first to point out the power of the media to influence and persuade, "People everywhere confuse what they read in newspapers with news." That's exactly what has happened.

*Business Week*, Bagdikian and Liebling saw the problem as plain as day. Information is not knowledge, no

matter how many times the corporate media hacks tell us it is. Information is nothing more than data transmitted in a particular arrangement. Information is passive, suspended in the ether just waiting for someone to come along and grab onto it.

Knowledge, on the other hand, is active. Knowledge is information that has been man-handled, turned on its head, and then put into context. Anyone can be spoon fed information. But if it's knowledge you're hungry for, you're going to have to grab it with your own two hands, and that's going to be a lot harder than you think. A.J. Liebling also observed something else that should send chills down the spine of everyone who values a free and independent media. "Freedom of the press is guaranteed only to those who own one."

Quality knowledge can only be gained by actively analyzing quality information. But as we're about to see, almost all of the information Americans have access to has been twisted – corrupted by corporate greed for big profit. None of us is immune to the manipulations of big media, not even Joel Salatin, arguably the most recognized leader of the heritage food movement.

Lather, rinse, and repeat, and repeat, and repeat...

I admire Joel Salatin. We've implemented many of his fencing methods and pasture management practices on our farm. He took information that may have otherwise gone unused and molded it into knowledge that helps modern small-scale sustainable farmers thrive, much to the chagrin of giant agribusiness.

Unfortunately, in his newest book, *Folks, This Ain't Normal*, Joel leaves his knowledge of sustainable farming behind. Instead, he wanders into the

realm of public policy armed only with media-approved misinformation. The familiar folksy witticisms we've come to expect are still there, but by parroting the self-serving rhetoric of big media, Joel Salatin has placed himself in the untenable position of defending McDonald's, Haliburton, and Big Media.

The corporate media has perfected the spin cycle. It's not uncommon for people to get lathered into a frenzy by a news story. Then, they rinse themselves in a pool of self-moralization – all decent human beings would feel the same way about whatever negative incident the so-called news outlet reported. Then, the story gets repeated so often it becomes part of the lexicon. At which point, the story solidifies in the minds of the masses as true. Even if it's a complete fabrication. Case in point: *Liebeck v. McDonald's Restaurants*.

We all remember the story. Some elderly lady spilled a cup of hot coffee in her lap and collected over \$2 million for her trouble. This case has become an integral part of American culture, and is routinely referred to by those who demand caps on damages in civil litigation. It's the seminal case when referring to American greed. Toby Keith sings about it in his song *American Ride*. "Spill a cup of coffee, make a million dollars." In *Folks, This Ain't Normal*, Salatin uses the case to illustrate how treacherous the legal system is for business owners. Here's the problem. The whole story is a lie, made up by McDonald's public relations department; fabricated to perfection in order to protect the corporate image of McDonald's.

**Burn baby burn**

Back in the early 1990s, American society was reaching a new mobility. We were spending more time in

our cars. We were also doing things in our cars that we used to do in our kitchens—like eating breakfast and drinking coffee. The fast food industry seized on this new-found mobility. The competition for drive-thru customers became heated, with national chains using every marketing trick available. For McDonald's it was their coffee, specifically the temperature of their coffee. It was

the freshest and the hottest, at least 10 degrees hotter than the competition's coffee.

Have you ever seen a Styrofoam cup melt? The manufacturer of the cups used by McDonald's had. The evidence shows that the manufacturer had voiced concerns that the high temperatures could weaken the structure of the cup, causing it to melt or collapse.

The manufacturer of the plastic lids that covered the coffee also expressed concerns that the high temperatures would compromise the integrity of the plastic, causing spills.

Even the company that made the commercial coffee makers expressed concern about the temperature of the coffee. Bunn sent McDonald's an urgent letter warning them that keeping the temperature so high posed serious dangers to anyone who happened to splash even a small amount on exposed skin.

Armed with this knowledge, McDonald's did nothing, continuing instead to promote their coffee as the hottest around. Complaints began rolling in, hundreds of them. Reports of babies in car seats being scalded when the Styrofoam cup collapsed from the near boiling coffee. Reports of customers suffering third-degree burns on their hands and thighs. McDonald's knew there was a problem, but correcting it would jeopardize their marketing campaign.

In 1992, 79-year-old Stella Liebeck was a passenger in her grandson's car. The pair decided to go through the drive thru. Stella only ordered one item—a 49¢ cup of coffee. After receiving their order, the grandson pulled the car into a parking space so his grandmother could put her cream and sugar in. She placed the small cup between her thighs and removed the plastic lid. At that point, the cup collapsed, spilling its contents into Stella's lap. She suffered horrific burns on her thighs, buttocks and genitalia. The pictures are far too graphic to be printed here, but if you have the stomach for such things, you can see them in a documentary by Susan Saladoff titled *Hot Coffee*.

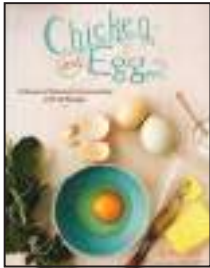
Stella almost died from her injuries. When her family contacted McDonald's and asked for help paying the medical bills, which were in the tens of thousands, the company offered them \$800. That's it. The family hired an attorney, and the attorney did what attorneys do—he filed a lawsuit.

The jury awarded Mrs. Liebeck \$160,000 in actual damages and \$2.6

## Chicken and Egg

*A Memoir of Suburban Homesteading with 125 Recipes*

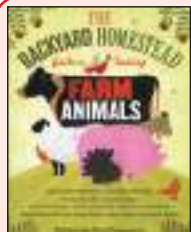
By Janice Cole, Photographs by Alex Farnum



*Chicken and Egg* tells the story of veteran food writer Janice Cole, who, like so many other urbanites, took up the revolutionary hobby of raising chickens at home. From picking out the perfect coop to producing the miracle of the first egg, Cole shares her now-expert insights into the trials, triumphs, and bonds that result when human and hen live in close quarters. With 125 recipes for delicious chicken and egg dishes, poultry lovers, backyard farmers, and those contemplating taking the leap will adore this captivating illustrated

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By Gail Damerow

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By Andy Lee and Patricia Foreman

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million in punitive damages. To a person, the jurors were disgusted by McDonald's callousness towards Stella Liebeck. The jury later revealed that the punitive damages were the sum of two day's worth of McDonald's coffee sales in the United States. But an activist judge set aside the award because he thought two-day's worth of coffee sales was an unreasonable amount for a corporation to pay. Instead, McDonald's and Mrs. Liebeck settled out of court for an undisclosed amount. Mrs. Liebeck crossed over in 2004, and to this day, her surviving family members are not allowed to talk about the agreement.

Joel Salatin takes on law and public policy, pointing to the Liebeck case as an example of individual and attorney greed. But it's exactly the opposite. It's a case about holding corporations responsible when they place profits over people. It's about justice in every sense of the word. I can't fault him for his mistake. In fact, as Saladoff shows us in *Hot Coffee*, even the Great Communicator, Ronald Reagan himself, was manipulated by big business and their pals in big media. In footage from the campaign trail, we see Ronald Reagan bemoaning frivolous lawsuits. He tells the story of a man who was struck by a car while standing in a phone booth. The man then sued the phone company! How ridiculous is that?

Not ridiculous at all if you know the real story. The phone company had received dozens of complaints from people who had been inadvertently locked in the phone booth when they shut the door behind them. Police had been repeatedly called to extract stranded patrons. On the day in question, the guy in the phone booth saw the car careening towards him. He had time to get out of the way, or at least he would have had time if the door would have opened. He had never used the phone booth before and had no idea what peril he had placed himself in when he closed the door.

The vehicle slammed into the phone booth at full force, nearly killing the guy inside. He lost his leg and never fully recovered. He sued the

driver and the phone company. Good for him. That's what "justice for all" is about. Unless of course, big media can convince you that the real victim was the phone company. If so, they can manipulate you into working against your own interests, which is exactly what happened to Joel Salatin, who defends food security on one hand while he defends a fast-food corporation on the other.

The fact is few unmeritorious actions make it past the first hearing. The legal system is an expensive place to pursue petty claims. It doesn't happen that often, but if you believe large corporations and the politicians they own, frivolous claims like Stella Liebeck's threaten to destroy American capitalism. Again, this is the exact antithesis of the truth. Who in their right mind would refer to a near-fatal accident that could have been avoided or third-degree burns on an elderly woman's genital area as frivolous?

Where can the average citizen get justice when a corporation harms them or their family? Certainly not the criminal justice system. While corporations enjoy personhood for tax purposes, a corporation cannot be incarcerated, but they can be sued. While a few million dollars might seem like an astronomical amount to those of us who don't routinely deal with that sort of money, to a corporation like McDonald's, two-day's worth of coffee sales doesn't amount to a hill of unroasted coffee beans.

There's no doubt that a Wall Street suit could never do what Joel Salatin does. Yet, in *Folks, This Ain't Normal*, he suggests that the American judicial system would be more efficient if we could just substitute lay people for attorneys and judges. By that logic, Donald Trump should be able to do a better job raising chickens than Joel Salatin. Now, that's ridiculous.

Like so many others who trumpet corporate America's call for tort reform, Salatin argues that justice is better served by the growing trend of mandatory binding arbitration. Binding arbitration is essentially the privatization of the American judicial system. It has become the favored

tool of insurance companies looking to increase their profits in light of controversial healthcare legislation.

When you agree to binding arbitration, you agree to have your case heard by a private arbitrator, paid for by the company. The person hearing your claim will likely not hold a juris doctor, the degree required to practice law in the United States. Instead, private arbitrators are likely to hold a professional degree in legal studies, such as Master's or Ph.D. While these professionals are certainly qualified to handle small disputes, they are about as qualified to decide serious matters of law as a part-time employee at McDonald's.

In *Folks, This Ain't Normal*, Salatin shares with readers that anyone wanting to hunt on his land must sign a contract agreeing not to sue him for any injury they receive as a result of their presence on his property. Interestingly enough, this is the same way Haliburton does business.

As a condition of employment, Haliburton employees sign away their constitutional right to have an impartial jury hear their claim. The push for private arbitration has grown in the past decade, fueled by insurers trying to reduce their exposure. For them it's not about justice. It's about profits. This arrangement might save big businesses a bucket of money, but it destroys the legal rights of consumers and employees. No one understands this more than Jamie Leigh Jones, former Haliburton employee.

As part of her employment agreement with Haliburton, Jamie Leigh Jones agreed to surrender her right to bring a complaint against the company in court. Instead, she agreed to binding arbitration for any and all disputes between her and her employer. She was then sent off to Iraq, where Haliburton was providing support to the military.

Despite Haliburton's assurance



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that female contractors would be housed separately from the male contractors in the Haliburton barracks, Jones was assigned a bunk in a dormitory full of men. Within days she was drugged and brutally gang-raped. When she reported the incident, the company responded by locking her in a metal building. She was able to talk one of her guards into letting her call her father back in the States, and he managed to gain her release after talking to his Senator.

When she returned Stateside, Jones sought medical care for her physical and emotional wounds. She also demanded that Haliburton compensate her for her ordeal. Unfortunately, she signed away her right to make any such demand. She agreed to accept whatever the “independent” arbitrator decided was fair. She was shocked. She had no idea that with one stroke of a pen, legal rights had been won and lost. She had lost hers without ever knowing it.

In 2009, a U.S. Court of Appeals ruled that Jones could pursue her hostile work environment claims in court. But in the end, she got nothing—not one blessed drop of justice. No one was arrested or charged, or even fired for that matter. She didn’t even get an apology from a corporate giant that was supported by taxpayers.

Even though she managed to get her case to a jury, the time lost cost her dearly. The corporate spin machine flooded the media with details of her personal life, and the media passed it on to anyone who would listen for over three years. She lost her case, and was ordered to pay \$145,000 for Haliburton’s court costs. There is no doubt that justice delayed is justice denied. Ask Jamie Leigh Jones.

The process of binding arbitration is touted by insurance companies and their pals in the media as a way to ease the pressure on the overburdened court system, but what it really does is fool Americans into surrendering their constitutional right to access the judicial system in the name of efficiency. If we are to believe the reasoning behind this

absurd proposition, we could ensure a more efficient government simply by surrendering more of our rights. If Joel Salatin would just stop demanding that he have a say in what goes on at his farm, the USDA wouldn’t be so burdened. Again, such an idea is ridiculous on its face.

It’s also worth noting that because of the Leigh case, there is now precedent for not recognizing mandatory binding arbitration clauses in contracts that don’t expressly explain what right the consumer is giving up. Mr. Salatin may not be as protected as he thinks he is.

### When the bough breaks

Not only does Salatin throw out the baby with the bathwater, he tosses the tub and towel right on top of the poor kid. Perpetuating the myth that medical malpractice insurance causes good doctors to hang up their shingles comes natural to almost everyone these days. Mr. Salatin claims that his wife’s ob/gyn provider went out of business because he couldn’t afford malpractice insurance. How many times have we heard this story? Different doctor. Different patient. Same story, lathered, rinsed, and repeated ad infinitum.

The truth is bad doctors cause good doctors to go out of business. Period. Medical malpractice insurance is underwritten based on risk. And the risk that a patient will be harmed by an incompetent medical practitioner is huge, and the medical industry only has itself to blame.

Physicians protect other physicians. They are slow to report colleagues whose practices are questionable. Even when a medical provider is investigated by a government licensing agency, their licenses are rarely suspended or revoked. Instead, they pay a fine, complete government-approved remedial training, and are then unleashed on an unsuspecting public as long as they can afford the malpractice insurance. The insurance company collects huge premiums from physicians and then lobby for laws that protect them from paying out on malpractice claims.

It’s normal for poor-performing doctors to end up in America’s impoverished communities treating the working poor and uninsured who depend on low-cost or free state-run medical assistance. These non-profits protect against the high-cost of malpractice insurance by requiring patients to sign away their right to sue before the provider will see them. Where are these folks and their families supposed to turn for justice when an incompetent medical provider costs them life or limb? If those on the binding arbitration bandwagon have their say, it will be the poorest among us who will suffer most. Not only will they be forced to endure second-rate medical services, they will have no legal recourse if they are harmed. While it might strike some as normal, it sure isn’t right.

Before you read Joel Salatin’s latest book, I strongly urge you to see the documentary *Hot Coffee*. Borrow it from the library. Download it from the Internet. Move whatever mountains you have to move in order to see it. You will not be disappointed, but you will be thrown clear of your comfort zone. You’ll realize that we’ve all been fooled for profit. Big business, big government, and big media have tricked us into working against our own interests, just as predicted by *Business Week*, Bagdikian and Liebling all those decades ago.

You’ll also realize that the few remaining independent media sources are an endangered species. Your support is crucial.

When you watch an independent film instead of a corporate-produced blockbuster, you stave off the comfortable numbness induced by the consumption of popular media. When you refuse to surrender your constitutional rights to big corporations, you inspire others to do the same. Remember the words of Ben Franklin at the signing of the Declaration of Independence. “We must all hang together, or assuredly we will hang separately.” Such is the price of independence in government, business and media.

*Crops & soils:*



# Soil 101

## Know your dirt

BY MIRIAH REYNOLDS  
BELGRADE, MONTANA

Soil, dirt, earth, dust, or filth, whatever you prefer to call it — we all depend on it. To people who do not work the land, dirt is filth that should stay outside, but to the farmer, soil is the heart of survival. I am taking a class in college about conservation management, and we are studying “the nature of soils.” Yeah, I thought it was pretty interesting — for the first week. Week two of the same topic and I did not want to attend class. Now here I am, in week three of more soil studies, and I have decided that even though studying dirt and erosion may not be too interesting, it does have a huge impact on everything around us. From the cost of tomatoes in the grocery store, to the cotton grown to make our underwear, soil is a critical aspect of farming and living. I’d like to share with you the different types of soil and a glimpse of the growing qualities of each, and I promise not to take three weeks!

Soils are divided into two categories: fine earth and coarse fraction. Fine earth soils include clay, silt, and sand. Coarse fractions would be any particle larger than two millimeters, such as gravel, cobble, stones, and boulders. Fine earth soils are the most ideal for growing crops.

Clay has the finest particles of any soil and believe it or not, they

are negatively charged. These negatively charged surfaces attract positive ions such as zinc, magnesium, calcium, iron, and potassium. Being that clay’s particles are less than .002 millimeters in size, they bind tightly to one another, holding these great nutrients, making them readily available for crops.

Good soils have good permeability, meaning that water and air are moved through the particles more easily. Since clay’s particles fit close to one another, the permeability is limited. Clay holds water on the



Clay soil’s particles are hard to separate.

surface and drains extremely slowly. This is why when you have an area that is mostly clay it is super slick after it rains. Clay is also harder to till, because the particles are difficult to separate. Normally, land that has high clay content will need to be irrigated and fertilized less than an area with sandier soil. Also, due to the tight spaces, aeration is limited, inhibiting root growth. Mixing clay with a larger particle soil will increase permeability and root growth. However, be careful adding sand to clay for permeability because often the large particles of the sand embed themselves into the clay and almost form concrete.

*Silt:* Silt falls between clay and sand when it comes to the particle size. It is just a tad grittier than clay. Areas near a river, or that have once



You’ll find silt soils near river beds.



**Borage** (also known as starflower) grows in front of a greenhouse in Idaho.

been flooded, are where silt can be found. Soils with a high silt content make for fertile land because silt originates from quartz and feldspar minerals. One of the downsides to silt is that it erodes quickly from wind and water. Silt is better at holding water and nutrients than sandy soil, and drains more quickly than clay. You'll need to use moderate watering and fertilizing (if any fertilizing at all) for silty soils.

**Sand:** Sand has the largest particles in the fine earth category. Unlike clay, sand has fast drainage. This is why sand is generally used in playgrounds; to avoid mud. Normally plants that grow well in sandy soils have deep root systems that can find water and nutrients in another layer of ground. Be aware that with sandier soils, plants can dehydrate quickly, so you'll need to irrigate and fertilize more than with a clay soil.

Loam combines clay, silt, and sand to make the perfect soil for growing crops. The best loam soils have an equal amount of each, for the optimum permeability. Loam retains moisture and nutrients, but also allows excess water to drain from the soil. Loam is also easy to work with and can be manipulated for certain climates. For example, you could add clay to hold water if you live in a hot climate or sand to increase drainage if you get a lot of precipitation.

Overall, soil is a huge part of our life as farmers. I have decided that there is more to the dirt on my boots than what meets the eye!

## Crops & soils:

# Soil health



By JOHN HIBMA

**V**irtually every person on this planet sooner or later comes in contact with earth and soil. Whether they are a farmer, a gardener, or a homeowner with a big or small yard, people have some interaction with the ground that's yielding a plant intended to be either food or an ornament. Even a city dweller who is surrounded by canyons of concrete and steel probably has a couple of potted plants to take care of. Except for those limited examples of hydroponics or an algae that's growing in a lake or pond, everything we grow is grown in soil. Soil is essential to plant productivity. Healthy soil is the foundation to successful agriculture and, on a different level, the existence and stability of productive societies.

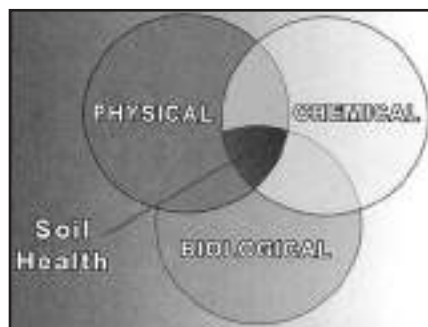
But it's also very easy to take soil for granted or to abuse soils. There's so much of it around that it's easy to fall into the trap of thinking that we'll never run out of good soil. Such is not the case.

What is soil? Soil is an aggregate of four basic components: mineral solids, water, air and organic matter. Depending on how much of each is present in soil determines its potential to be used to grow crops for human and animal consumption or for flowers that will adorn the dining room table.

Soil health (also referred to as soil quality) can then be defined as "the capacity of a soil to function within ecosystems and land use applications that can sustain productivity, maintain environmental quality and promote plant and animal health." Characteristics of healthy soil include:

- Good soil tilth
- Sufficient depth
- Proper levels of nutrients
- Good drainage
- Large populations of beneficial organisms
- Resistance to weeds and degradation
- Resilient when unfavorable conditions occur

Many of us don't have to look any farther than our home yards and lawns to be able to understand basic soil health. The flower beds have soil that is



(Adapted from the Rodale Institute)

dark in color and crumbly and loaded with earthworms. The soil drains very quickly after a summer thunderstorm and the plants that grow there are vigorous. The lawn has sections that never seem to need water, but then there's that patch right in the middle that always turns brown in the summer no matter how much water it gets. Grass is difficult to grow there, but weeds love it. Over the years you've learned that a couple of bags



Several methods that are commonly used in the field to evaluate soil health are: a) a penetrometer to measure the compaction of the soil at different soil depths, b) digging a spade full of soil and examining the structure and texture of the soil as well as the roots and other organic matter present in the soil, c) using a soil core probe that takes a profile of the soil that can be analyzed in a soil testing laboratory, and d) a rain simulation sprinkler steadily raining on a measured sample contained in a sieve below and the soil that is not washed away is used to compute the aggregate stability of the soil. The sprinkler can be adjusted to simulate varying intensities of rainfall.



of manure or topsoil have improved those areas. You've learned that certain plants grow better in a more acidic soil and others do well in an alkaline soil.

Achieving and maintaining a healthy soil involves the integration of physical, chemical and biological

components that result in improved productivity and environmental quality. (See diagram on previous page.)

Probably a better way to learn what constitutes good soil health and quality is to study what constitutes unhealthy soils. The most obvious clue to an unhealthy soil is the fact that nothing will grow in it or, if it does, it grows poorly. Poor quality soils are the result of soil compaction, surface crusting, low organic matter and minerals, increased pressure from diseases, weeds, and insects as well as the lack of beneficial organisms.

Soil degradation can result from the overuse of heavy farming equip-

ment that compacts soils and makes it impossible for roots to grow. The lack of rotating crops over time will eventually deplete soil of essential nutrients. Poor drainage will drown out root systems. There must be enough organic matter to facilitate chemical transfer of carbon as an energy source for the soil microbes. Microbes are necessary to decompose organic matter to make available chemical ions that must be taken up into the plant.

Managing soils to maintain health and quality is as much a science as it is an art. Good soil aggregation—the minerals, air, water and organic matter—is essential for maintaining good soil structure that enables ad-

equate air exchange and water drainage. The texture of a soil is a good indication of its health. Soil texture is usually classified as clay, clay loam, loam, sandy loam, or sand. Any of the three loams are generally the most desirable types and most productive soils. Loams tend to have the best soil characteristics that allow for good drainage, aggregate stability, organic matter and active carbon.

Testing of soils for chemical, biological and physical attributes is a useful tool that will help determine the health of soils. Check with your local ag extension agent or local soil conservation district for more information about soil testing. Basic tests include using a penetrometer to measure soil compaction and taking soil samples to determine soil type and structure as well as biological activity.

Improving the health of a soil will take time and patience. Often, there will be more than one problem with a poorly productive soil and a management plan can be developed to restore functionality to the soil. Several of the main categories of action for soil management are listed below:

- Reducing or modifying tillage
- Crop rotation
- Growing cover crops
- Adding organic amendments
- Adding chemical amendments

Soil management practices are very dependent upon farm-specific conditions such as soil type and the kind of crop to be grown. Each situation must be considered independently.

For most of mankind's history the land on which we grow crops must have appeared to be inexhaustible. But no longer is that the case. As the world's population continues to grow, estimated to be at nine billion by mid-century, healthy and productive soil is rapidly becoming a scarce resource. Recognizing the vital importance of healthy soils to the sustainability of agriculture should make us realize that healthy soil is a resource that we cannot afford to squander.



## Planting an “appliance” garden

BY GRACE N.

Our refrigerator garden happened partly by my husband's ingenuity and partly because of my nagging. Having just moved into a mobile home on five acres of land, we found ourselves with two extra refrigerators the previous owners had left behind. They both still ran, so my husband was reluctant to just throw them away.

We could use them outside for a while just to store “extra food” in. We had company coming and found our refrigerator in the kitchen did not have enough room to hold the potato salad, coleslaw, and fried chicken that was prepared for the next day's picnic. I took the food outside to store in one of the refrigerators overnight. Little did I know that some raccoons are adept at opening doors. So the next morning, I found that our picnic lunch had already been spread out on the lawn, half-eaten by the pesky varmints.

I had decided then that the refrigerators had to go. We could not use them for fear of raccoons, and besides that, there was the eyesore factor. So as my husband contemplated their fate, he considered all the angles. To take them to the dump would cost \$25 a piece, so that idea was scrapped right away. Then there is a question, how does one recycle a refrigerator? As he explored this possibility, he came up with an ingenious answer: start a refrigerator garden.

First he moved the refrigerators to the garden area. As they stood upright, he took the doors off and removed the racks and the vegetable bins. He then gave them a shove so they would land

on their back. We now had a raised bed! He got river bottom soil and mixed it with compost and manure so it could have good rich soil.

We have found a lot of benefits from this kind of gardening. The refrigerators are the perfect height to use as a raised bed so that we do not have to bend much, which is great as you get older. Then the task of weeding is much easier. It is not as daunting a task to weed just one refrigerator a day. Another benefit is that the bug population, which tried to get onto the plants, is down. I presume that bugs either do not like to climb up that high to get on the leaves, or maybe their sense of smell is geared toward ground level.

When the plants are young and there is a danger of frost, it is not hard to cover them up. As a matter of fact, we have found that sliding glass doors and shower doors will fit perfectly on top of the refrigerator. Thus we have a cold frame readily available. Of course, the doors we used are recycled. My husband does some maintenance on a group of apartments and when the sliding doors or shower doors needed to be replaced, he grabbed the old ones for the garden. The same held true of refrigerators.

What started out as a two-refrigerator garden has been expanded. We have raised garlic, onions, zucchini, cucumbers, strawberries, cantaloupe, peas, turnips, carrots and beets in them. We have also put refrigerators in the greenhouse and have lettuce growing in them year round.

When people ask, “How does your garden grow?” Our answer is inevitably, “Why with refrigerators, of course.”

**Old refrigerators have many uses. However, there are gases and oils that need to be removed *safely* before you repurpose the appliance, as these can contaminate the ozone, soil, and adversely affect your health. Call a local appliance repair shop or recycling center to ask how to safely remove the pollutants. It may not be free, but it's a small price to pay to help save the environment *and* your health. And it'll be a lot cheaper than the \$25,000 EPA fine for letting contaminants escape into the atmosphere!**

*The garden:*

# Let's talk tomatoes

By WAYNE W. MOSELEY  
MISSISSIPPI

I love to grow tomatoes. Sure, I grow other things in my garden, but tomatoes are my prime crop. I look forward to it each year and I have a lot of success at it. My first attempts, however, were not so much fun. Because of allergies, I do not have a dog or a cat. This means the birds in my area do not have any deterrents to their incessant predation upon my tomatoes.

**Bird trouble**

It's mockingbirds, mainly, that caused the most havoc to my tomato crop. They'd take a peck or two on a tomato, then go do the same on another one. Never would they just stop and peck away at one tomato, but just a peck or two and off to another one. They ruined my crop, so I vowed revenge.

My first attempts to keep them off my tomatoes were not effective. I'd drape netting over the tomatoes, but the birds would use the netting as something handy to land on, then peck through the netting. Or, they would land on the ground, walk under the netting and fly up inside it and on to their game of ruining each and every one of my tomatoes.

They were picky about it, too, waiting until the tomatoes were turning red before pecking them. Mockingbirds in Mississippi are protected, so I couldn't kill them, I had to find a way to keep them out. It's at that point that the birds met with my rock-hard resolve. I would make a cage to keep them out.



Tomatoes planted in tires with lots of mulch helps preserve moisture and reduces the need for weeding.

**The cage:**

Since I was planting 48 plants each year, I picked an area 26' x 30' for four rows of 12 plants each. Then I got a neighbor to cut nine cedar trees to make posts 13-feet long and eight inches in diameter at the base, one at each of four corners, one at four mid-points, and one in the middle. Then we dug holes three-feet deep and 12 inches wide at each of the locations and set the posts in quick-set concrete. (Believe me, they weren't going anywhere.) This left the posts 10 feet high above ground, giving me plenty of head-room for walking around inside, even considering the natural sag of the netting on the top.

I then placed 2" x 4" treated lumber between each post on the periphery of my cage, about 1/4 into the soil for the bottom rail of what was to be my cage.

I ran one-inch galvanized chicken wire fencing (I would recommend 3/4-inch openings if you can get it) around the outside of the posts. Then I took lath strips (1/2" x 1" x 8') and sandwiched the bottom of the chicken wire between it and the 2 x 4s and screwed the lath strips to the 2 x 4s every two feet. Next, came the arduous task of lacing together the overlap junction of the two chicken wire runs with 50# fish line. For this, I used a large, curved carpet needle, which can be found at any craft store.

Next, came the top to take care of. First, I got out my ladder and stapled

electric fence wire from the top of each post to the post opposite it, and diagonally also, with many wires crossing over the top of the center post. This formed a support system for the netting that would cover the top. When I cast about for the perfect netting for the top of my tomato cage, my friendly neighborhood feed store man recommended Memphis Net and Twine. They manufacture fish netting that is strong enough to stand up to the elements and the rigor of netting fish. I contacted them and chose a knotted netting with small enough holes to keep birds out.

I placed this netting over the top of the 10-foot posts with the help of my wife, using 20-foot lengths of two-inch diameter pvc pipe attached to the leading edges of the netting. We were blessed to have a wind from the right direction come up at precisely the right time, which helped immeasurably and the netting went up and over with no trouble. It overlapped by about two feet on all four sides.

At that point, I again laced the edges of the fish netting to the chicken wire with fishing line. All that was left now was to make a door and my tomato cage was bird-proof.

I later decided to place clear glass



Chicken wire keeps the tomato patch bird-proof.

cereal bowls inverted over the top of the posts to keep the rain from rotting the posts from the top. This had an additional advantage of creating a smooth surface for the fish netting to rest on. Windy days had caused the netting to rub back and forth against the post tops and the glass bowls prevented frayed netting.

#### Weeds and grass

Weeds (and I include grass) are the bane of gardening. They spring up everywhere, causing us to rototill, hoe, stoop down to pull them up, and it's a lot of work. If we ignore them, they will take over our garden, their roots will choke off our crops, and all our hard work will be in vain. And there seems to be an inexhaustible number of weed seeds in common garden soil. Billions of them.

So we must be smarter than weeds. And here's how I do that. The following are steps I had to do only one time. I till the ground, then I scrape it flat and let a few rains compact it. Next, I lay down black plastic weed sheeting (available at Wal-Mart in early spring) that comes in rolls three-feet wide and 100-feet long, overlapping the runs slightly. This plastic has tiny holes in it to let excess moisture run through, but it prevents weeds and grass from growing up through it.

Then, I lay down newspaper sections, overlapping each section with another. This also keeps sunlight out and prevents me from slipping when walking on the mulch that goes on top of it.

Now comes 12 inches of cut-grass mulch on top. After the grass was



Watering through PVC pipe ensures moisture gets to the roots of the plant.

cut, I used the mower to blow several passes of cut grass into one windrow, which I raked up and transported to my grass compost bin made of used pallets. The grass had overwintered since I mowed it, and had gone through the "heat phase." Eight inches of mulch will compact down to about six inches after walking on it during the season, but it keeps weeds down to nothing. If I had oat straw available to me, I would use that, but so far, cut, dried grass mulch has prevented any grass sprouting up in my garden.

**Preparing spots**

Back before I used the thick mulch system in my tomato cage to combat weeds, I was simply using a weed-eater to hack away at them. Weed-eating them down to the dirt was quite satisfying to me (we are in a war against weeds, you know) but the first time I goofed and hit a tomato stem with my weed-eater, that method was discarded for good.

I switched to tires. The barrier that tires provide against hoes and weed-eaters was too good to pass up. I used a jig-saw to cut the sidewalls out of 48 tires, leaving just the belt, which I placed over each of the spots in the four rows where I was to plant my tomatoes. I got the used tires from a local tire dealer. They would never see service on the road again and in exchange for a few bags of green tomatoes (he loves fried green tomatoes), the trade was made.

Next, I removed the mulch from inside the tires, cut away the newspapers and black plastic, and pushed the tires about one inch into the soil which anchored them in place. Then I dug down 12 inches inside the tires to almost the full width of the tire opening. It is important to give the tomato plants loose soil to grow in and if you don't dig a deep, wide hole, the plant "sees" just hard-packed soil into which to try to grow its roots.

At this point, we have to talk about the soil density. Soil left alone, compacts more and more, year after year. Rains come and the moisture soaks into the ground and dry spells cause the moisture to percolate up



Wayne's planting methods result in a bounty of healthy plants and fruits.

to the top. These actions cause soil "granules" to compact. We disc or harrow, and then we till at the beginning of each spring to loosen the soil up, but too often we don't disc, harrow, or till deep enough. When gardens are "cut up," as we say in the South, whatever process we use doesn't involve actual plowing of the soil.

Most garden tilling I've seen doesn't loosen up soil to more than four or five inches of depth, at the most. What lies below that is, essentially, hardpan. So what happens when it rains? The water moves easily through the loosened soil, down to the top of the hardpan and stops right there, saturating the soil above it. What we need to do is plow deeper than the first six inches, to provide proper drainage.

But guess what? Once our tomato cage is set up with the black plastic sheeting and newspaper cover, we can't use any of those methods to create drainage past the hardpan. A quick way to provide that drainage is to take a three-foot solid metal rod with a sharpened end and a 5# sledge hammer and drive about five holes into the bottom of each hole, about eight to 10 inches deep. Do this one time and you shouldn't have to repeat it in following years.

**Soil amendments**

Knowing the N-P-K composition of your soil is important. N-P-K stands for nitrogen, phosphorous, and potash (or potassium.) These three most-important components of soil chemistry need to be in proper balance with each other for garden plants to grow well.

There are self-test kits available at reasonable cost, or you can send a soil sample to your local extension office. Using either method, you will find what levels of each component your soil lacks and choose a fertilizer that will address your garden's needs. In addition, you will find your soil's acid/alkaline level.

Garden soil's acidity or alkalinity is of utmost importance. Usually, I have found soils to be too acid. I use lime to counteract over-acidity and I do it at the plant level, not the overall garden level. Here's what I do for my garden—yours may need different fertilizers or lime amendments.

I put my lime and fertilizer into each hole before planting. Here's how I do it: First, I put half a handful of triple-8 fertilizer (8-8-8) in the bottom of each hole. I find triple-13 to be too strong. On top of that, I put half an inch of soil. Then, to stop blossom-end rot, I put down a full handful of pelletized Dolomitic Limestone,



Preparing the soil before planting will help prevent blossom end-rot.

spread evenly, and another half-inch of soil over that. From my experience, the main cause of blossom-end rot is an insufficient supply of lime (calcium) from the beginning of the plant's life in the garden.

When the plants have been placed in my garden for about six to seven weeks, I include limestone in the water I provide the plants. I pour a pint of limestone into 20 gallons of water and stir and use that mixture to water my plants for the remainder of their bearing life. Do this and you should have no blossom-end rot at all.

The soil I surround the plant roots with is a mixture of things. I have an old cement mixer which has been kept very clean each time it's used, so there's no cement left in it. Using it, I mix equal shovelfuls of soil and worm compost (potting soil can be used, but it's rather expensive.) The idea is to make the resulting "soil" more friable.

Friable soil has a crumbly texture which is ideal for the plants' root growth. Loam is an example of friable soil. If you can take a handful of your garden soil, squeeze it, then open your hand and find a compact ball of soil there, your soil probably has too much clay content and not enough decomposed vegetation in it. I find worm compost to be ideal to "loosen up" my soil and fortunately, there is a local provider.

At the same time I mix soil and worm compost, I add about a quart and a half of lime to a half cubic yard of the mixture. The cement mixer does a great job of mixing it all up.

Worm compost is what's left after what worms feed on has been through the worm. It's what people prefer to say rather than "worm manure." By the way, worm compost tests out on the NPK scale at 3-3-3, a very balanced and gentle natural fertilizer; plants thrive on it. I have tested using worm compost for growing tomatoes and planted one whole row with all-soil, another with half-and-half soil and worm compost, and one row with all worm compost.

The row with all worm compost grew much faster, had very healthy-looking foliage, and was twice as high as the all soil row. However, without the triple-8 below it, at the half-growth stage of the plants' life, they had depleted the worm compost and flagged for lack of sufficient nutrients.

The best row was the one planted with half soil and half worm compost,

so that's what I go with.

### Making plant cages

Each plant will have a cage around it. I make cages from "cement wire" which has six inch holes, and is five feet high. It comes in rolls of 50 or 100 feet. Unroll it curl-side down, put weights on it, and cut into four-foot lengths, cutting up the five-foot length close to the squares. Form the cut piece into a cage and with pliers, bend each of the cut wires into a hook and fasten them to complete the cage.

*Warning:* If you unroll the cement wire roll with the curl-side up, when the wires are cut, they will snap back with a lot of force and injure you! For that reason, I unroll it cut-side down and put heavy objects on it to keep it flat on the ground before, during, and after cutting. If you have any left-over wire, when you roll it up to store it, be very careful when rolling it back up.

### Watering

Before planting, I cut 10 feet sections of 1- or 1-1/2-inch thin-wall PVC pipe into 24" sections, enough for my 48 plants. Then I drill six 1/4-inch holes in the bottom six inches of each pipe. I will place one pipe in each hole with the bottom right up next to the roots. Then I put the tomato start in the hole and place the holed-end of the PVC pipe next to the roots. The pipe is then angled toward the walkway for ease of access.

I place the tomato start at the bottom of the hole and add the soil/worm compost mixture up to the garden surface. Now bring in the mulch and fill it to about three inches above the top rim of the tire. In a few days, it will compact a little, bringing it level to the top of the tire. Water only through the PVC pipe at all times; do not water the mulch.

My watering method puts the water right to the plant's roots. This keeps water away from the stem and leaves at the top of the mulch and eliminates mold damage to the plant. Also, you will be surprised at how little water each plant will need. Here in Northeast Mississippi, with



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A fully ripened tomato will have a deep red – not pink – color.



high humidity and hot summer temperatures, if the temperatures are below 100°F, the plants will need only one pint of water every four days.

Do not over-water your tomatoes. Over-watering is the most common error gardeners make (besides not applying lime to their gardens). Here's how to tell if a tomato plant needs water. When you go out to the garden early in the morning, say at 6:00 a.m., before it gets hot, look at the leaves. If the leaves are fairly flat, your tomato plant does not need water. If it's curled inward in the morning, it needs water.

Now if you are in the garden at noon (and I try not to be) or in the late afternoon, and you observe your tomato plants' leaves are curled, do not be alarmed. There's no need to water them then. All tomato plants send water from their roots up through the stems and out to their leaves. There, the moisture transpires through the stomata on the leaf surfaces and evaporates into the air. If the air is very dry, the leaf will lose moisture faster than the root-and-stem moisture-delivery system can replenish it and the leaf curls up. During the night, most times, the plant will get sufficient moisture out to the leaves and they will straighten out by morning.

The rule is: only water when you see leaves curled in the morning. And remember not to water more than a pint (half-quart) when you do water. Only when we had 105°F weather did I need to give them more and then

only 50% more—a pint and a half. Watch your plants and you will see that in most cases, curled leaves will straighten out in less than two hours once water is applied.

### Planting

I plant tomato starts that are about 12 inches high. I prefer the Big Beef variety of tomato for its hearty stem structure and its resistance to many plant diseases, but primarily for its great-tasting tomatoes that are larger than most other varieties and quite solid inside, as contrasted to Beefsteak which have a lot of liquid and hollow areas in them.

### Caging

In the next-to-last step, I place my plant's cement-wire tomato cage inside the tire belt, pushing the exposed bottom wires down into the ground.

### Cage supports

The wind will topple your cages unless you provide supports. I use four-foot-long lengths of 3/8-inch diameter steel rebar, driven one foot into the ground on the inside of the tire, up next to the cage and use short pieces of binder twine to tie it to the cage. If you live in windy areas, I suggest an additional piece of rebar on the opposite side of the cage.

### Diseases

Experts recommend that you plant tomatoes in different areas from year to year to avoid plant diseases from recurring in subsequent years' crops. I can understand that, but since I cannot move my tomato cage, I have to come up with methods to combat the problem of planting in the same place each year.

The first year, you can just use the soil at the spot. But in succeeding years, since I have to dig a hole for each plant anyway, I remove the soil from a dozen holes into a wheelbarrow and dump it on another part of my garden. Then I take soil from an unused part of my garden and use it for my soil-compost mix in planting. That way, my soil changes from year to year.

As for the cages, exposure to the elements for nine months of the year seems to keep them free of contamination by springtime.

**Fungus prevention**

In the first 30 days of a tomato’s growth, it is very susceptible to mold or fungus attack of various types. For that reason, it is necessary to keep a hand sprayer handy that contains a good fungicide. When the plant is at mid-growth or even 2/3 its full size, I spray it with a solution of Maneb, a foliate fungicide, to prevent fungus, even though I find no evidence of fungus growth. At this point, there’s almost no tomatoes formed. If a fungus takes hold of your plant, do not delay, but pull it out of the ground, take it to a remote area of the garden and burn it, then spray fungicide on your garden gloves. Fungus proliferation can spell the death of your entire tomato patch if not attended to quickly and thoroughly.

**Insect intervention**

Insects are a menace to your tomato crop. They will devastate it unless you take action against them. I divide insects into two groups: sucking insects and chewing insects.

Sucking insects like aphids, etc. will suck the life juices out of leaves — check the undersides of the leaves for infestation. Plant symptoms will be droopy-looking leaves, but don’t wait for that indication — check for sucking insects each time you visit your tomato patch. The best thing I’ve found to combat sucking insects is 5% Sevin® dust, broadcast on your plants with a hand-cranked blower. It is more important to dust the underside of the leaves than the topside, as that is where most sucking insects are found.

Most garden dust blowers have a straight tube which I modify to dust the underside of the leaves. I create a plastic extension to the tube, curved to direct the dust upward to the underside of the leaves. Find a plastic half gallon milk container and cut it in half, retaining the upper portion, which is curved. Now cut off enough of the top to remove the spout and

handle. Cut a vertical slice to allow the plastic to overlap and grip your duster tube. Tape in place with duct tape. Now your duster will blow dust upward.

Chewing insects cause an equal amount of devastation to your tomato plants. The most common is the Tomato Hornworm, a big (three-inch long), fat (1/3-inch across) green-colored worm with a single horn curving upward at the top of its head. You have to be on guard against these voracious leaf-eaters as they will divest a tomato plant of half its leaves in no time at all.

One of the things you must condition yourself to do is to look at your plants’ leaves each time you visit the garden. If you find an area of tomato stems devoid of leaves, look closely for the hornworm because he’s there somewhere — you just have to spot him. Their color is so close to the color of the tomato leaves and stems, that it makes it hard to find them, but eventually you’ll find him.

Pull them off by hand and step on them, but the next thing you must do is fetch your hand-cranked blower and your package of Dipel® dust. What works for sucking insects will not work for chewing insects and Dipel® kills hornworms like magic. If you find a hornworm on one plant, dust them all.

Remember, the rain will wash off garden dusts. Re-apply after a rainy period.

Mosquitoes do not bother tomato plants, but they will bother you! If you use the PVC method of watering, together with thick mulching, you will eliminate most mosquito problems. I avoid visiting my garden at dusk, which is the time I notice most mosquito activity. The most effective mosquito repellents are sprays that contain Deet®. They work quite well. I have been wanting to try out the advertised electronic mosquito repellent devices that you clip onto your collar or shirt pocket, but as yet have not, so I have no idea if they are effective or not.

**Harvesting**

Store-bought tomatoes must be

harvested before they are ripened because of delays that transportation to market involve. As a result, store-bought tomatoes are essentially tasteless. If they are hothouse tomatoes, they have one additional negative quality — they are tough. We home gardeners have the advantage of being able to pick our tomatoes 15 minutes before we sit down to eat. As a result, we can wait until nature finishes her supernal ripening process and offer to us tomatoes rich in flavor and texture. There’s no comparison at all between home garden tomatoes and those bought in the store.

When we harvest our tomatoes, we need to let the ripening process proceed until they’re fully ready, as indicated by their color. A fully ripe tomato will have a complete deep red color, not a pinkish color. Wait for the right moment and you will experience a much richer flavor than picking it half ripe and letting it ripen in the windowsill.

Part of a tomato’s flavor has to do with its natural acidity and that is governed by its genetics. I choose the “Big Beef” variety, because of its robust taste. There are other varieties which can offer more acidity or less acidity, to the taste of the partaker.

Mother Nature makes a handy change to the tomato stem when it’s completely ripe. There is a little “knuckle” in the stem about one-half inch from the tomato. Tomatoes naturally resist picking until they are ripe, then the knuckle easily separates from the vine.

When you pick a tomato, do not



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attempt to remove all of the green stem at the tomato surface, but grasp the stem up close to the tomato with your thumb on the knuckle and press on the knuckle. It will cause the stem to separate cleanly and easily at the knuckle. This leaves a short part of the stem and the top "leaflets," intact. Leaving these attached to the tomato will better preserve the tomato until it's ready to be washed and eaten.

### Yield

As the years have marched on, I have reduced the number of my tomato plants from 48 to 36, with three cherry tomato plants. During normal seasonal weather conditions, barring excessive rains or prolonged drought, I harvest over 800 tomatoes from the 36 Big Beef variety of tomatoes.

Over half, I sell to grocery stores and the rest are given to family, neighbors and a local nursing home. As for me, I consume more than a body should, I guess. BLT sandwiches are summer delights. The people at my church's pot luck dinners love plates of sliced, peeled tomatoes with their rich flavor. Some go to the barber shop, friends, or people who are special to you. My wife goes to



When the season is over, pull up the plants, and plant in a new spot each of the two following years.

sessions at a local physical therapy heated pool and her friends there can't wait for her to arrive with a new supply of my tomatoes. You'll have an abundance of friends when you give them perfect tomatoes.

### Season's end: Overwintering

When the bearing season is over, do not delay to pull the vines up, take them to a remote part of the garden and burn them. This will insure that insects will not feed upon the remaining juices in the leaves and vines and then proliferate and reproduce to cause you anguish next year. Burn 'em and be done with them.

### Winter dreaming

After the final harvest is done, you can still enjoy tomatoes through later months as canned or frozen tomato chunks, tomato paste, or tomato puree. But eventually, in the depth of the winter, on a quiet night, you will find yourself sitting in your easy chair thinking about next year's tomato garden.

This will most likely have been prompted by the arrival of a seed catalog in early January, which you will immediately take to your chair and read, dozing intermittently with visions of lush tomato foliage on healthy plants with big, red tomatoes on them, and scores of tomatoes to harvest daily — now that's a pleasant dream.

## Bake winter squash

COUNTRYSIDE: I bought a bunch of winter squash and was going to boil it up and freeze it. Well, the more I thought of having to cut it up and peel it (for those of you who have peeled Butter Cup and Butternut squash, you know that it's a pain), the more I dreaded it. I got thinking, why not bake it in the oven?

I cut each one from the stem to the bottom on each side, cored out the seeds and placed them upside down on a cookie sheet. I placed them in the oven and baked them until they were tender, (I have no idea how long and what temperature, because I cook with a Home Comfort half gas/half wood stove, the needle was between hot and very hot.) You just have to keep poking it with a knife to see if it's tender, then when it is done, you let it cool a bit then scrape out the squash, and place in bowl. Let it cool, then place in bags and freeze. When I thaw a bag, I heat it up and then season. The reason I don't season it before freezing is because I may want to make pies with it and then you have pepper in your pie.

Thanks again for having one of the best magazines out there. — *Beckie, Delaware*

Thanks for the tips Beckie. We bake the squash in the oven most of the time, since there's usually something else baking. Our method: Prepare the squash as Beckie mentioned, and place it in a 350°F oven for 30-45 minutes. As Beckie states, you'll still have to poke it occasionally to make sure it's done. The time will vary with the size of the squash.

The homestead kitchen:

# Caring for carrots

BY DREW B. FRANK

**A**utumn arrived faster than it normally does. My father warned me that would be the case, as I got older. He was correct in this, as he was in many things.

Sunday was a beautiful fall day, so I took the opportunity to harvest some of the few remaining vegetables still growing in the garden.

The late planting of carrots had matured enough that they were ready for the freezer. The other items still growing are the beets, tomatoes, peppers, and cabbage. The rest of the garden is looking pretty sad. Unfortunately, I had neglected the chore of weeding a bit this year and it showed.

Carrots and beets are hardy plants. They can be planted early in the spring and will grow well into the fall. The remaining crop had been planted at the end of June, reaching harvest stage in less than 90 days.

I used a spade to gently loosen the soil around them, taking care not to cut them with the blade. Then I gently tugged them free. Using a hose, I cleaned the dirt and debris from them. Then they were peeled and the tops and ends cut off. The tops and peelings went into the compost bin to help nourish next year's crop. *(Ed. note: The peelings contain most of the nutrients. A good scrubbing will suffice.)*

I took them inside and washed them once again. While doing the washing, a pot of water was put on to boil. Once the water was boiling, the cleaned carrots were dumped into it. I let blanch them for five minutes and then drained them. They were then put into ice water for the same amount of time they were in the boiling water. Doing so stops the cooking process and read-



After blanching the carrots, cool them immediately to stop further cooking.

ies them for the freezer.

Normally we use a vacuum-type bag (available from major manufacturers at the big chain stores), but I found that we were out. So I bagged the carrots in standard freezer bags. I marked the date on the bags for later reference, and placed them in the freezer. I only freeze small portions, since the only ones who eat them are the wife and I. The children abhor carrots, as children are wont to do.

When we are craving carrots, all we do is dump a pack of them (still frozen) into a microwave safe bowl, add a bit of water, and heat them up in the microwave. They taste as good as right from the garden!

*Drew's book Night Whispers is available at: [www.Createspace.Com/3541836](http://www.Createspace.Com/3541836).*



Freshly dug carrots, headed for the kitchen.

The homestead kitchen:

# 10 Foods that keep us healthy

By HABEEB SALLOUM

“If you had to choose, what 10 foods would you recommend for one who is interested in a healthy life?” a colleague asked when I told him that I was a fan of healthy foods. His question started me thinking, and I began to review my over a quarter century works written for magazines. It was a question that gave me an opening to assess my view of various foods and their health values.

From my reviews, I came up with these 10 foods: fatty types of fish like salmon, garlic, lentils, olive oil, spinach, tomatoes, potatoes, yogurt, bananas, and honey. It is not a list that everyone can agree with, but it is my own idea about the best foods on which to dine.

*Fish*, especially fatty types like salmon, have excellent nutritive properties. Fish contains about 20% protein and small amounts of calcium, iodine, iron, magnesium, phosphorous, potassium and sodium. In addition, fish is a good source for vitamins A, B, D and E, and is almost carbohydrate and fat-free, making it popular as a low-fat fare. Its omega-3 oils are good for the immune system and help to prevent arthritis and headaches. In 2003, research at Harvard University established that men who ate about three to five ounces of fish one to three times a month were 43% less likely to have a clot-related stroke.

Long before modern medicine, in China, India and the Arab lands, the herb doctors in these countries

prescribed *garlic* as a remedy for the common cold, senility, menstrual disorders, impotence and cancer. Modern researchers have found that garlic is full of antioxidants that help to fend off cancer, heart disease and aging. Mortan Walker, author of 42 books on alternative medicine calls garlic “nature’s gift to mankind,” and maintains that all the ancient myths about its power to heal are not folkloric stories. Rather, they truly describe its healthful qualities.

*Lentils*, one of the most nutritious foods ever grown by man, are rich in carbohydrates, calcium, iron, vitamin B, and especially protein, making them a vegetarian food par excellence. A healthy legume with many side benefits, lentils are recommended in cases of low blood pressure, emaciation, anemia and ulcers. Containing a higher percentage of protein than an equal amount of lean meat, they surely have a bright future in a world with an exploding population.

Exceptionally rich in potassium, *olive oil*, a mono-unsaturated fat, has the ability to reduce the LDL (bad) cholesterol without reducing the HDL (good) cholesterol in the blood. The oil also contains vitamin E, a powerful antioxidant that plays a role in reducing the risk of cancer and heart diseases. Soothing for insect bites, itching and bruises, it also aids in relieving liver disorders and abdominal indigestion.

Studies have shown that the high antioxidant activity in olive oil reduces the development of breast

cancer and has curative effects on peptic cancer and on the formation of gallstones. The oil is excellent for sufferers from debility or those who are underweight. Drunk pure, two ounces per day makes a superb laxative.

An excellent blood builder, *spinach*, filled with antioxidants, is without question, about as wholesome and health-giving a food as can be imagined. It contains chlorophyll that helps to lower the activity of cancer causing agents. Made up from over 90% water, it has no cholesterol and is a rich source of minerals and vitamins. Large amounts of calcium, iron, phosphorus, potassium and vitamins A, B and C; and some carbohydrates, fat, magnesium, sodium and high quality proteins are contained in this nourishing green. One ounce of spinach will supply half the average person’s daily requirements of vitamins A and C.

*Tomatoes* provide North Americans with a greater percentage of their nutrition than any other vegetable. A dieter’s delight—a medium tomato has about 30 calories—they contain no cholesterol and are low in carbohydrates. When sun-ripened, tomatoes are rich in vitamins A and C, and minerals, especially potassium. In addition, they contain some calcium, chlorine, fiber, iron, magnesium, phosphorous; and traces of fat, protein, sodium and vitamins B, E and G.

Unlike green vegetables, they lose few of their vitamins in cooking. They are also a major source of the

antioxidant lycopene that helps to reduce lung, prostate and stomach cancers.

*Potatoes*, called the “noblest of vegetables,” are one of the healthiest foods in the human larder. An easily grown plant, potatoes have the ability to provide more nutritious food faster on less land than any other food crop, and in almost any habitat. They are jam-packed with fiber, minerals – chiefly potassium, proteins, the vitamins A, C and D, and complex carbohydrates – the body’s main source of fuel. A medium six-ounce potato has about 120 calories, is virtually fat-free and contains no cholesterol and only a small amount of sodium. Potatoes provide more protein and calories than any other food crop – five times more than corn, soybeans and wheat.

Modern nutritionists have established that *yogurt* is almost a medicinal food. On the average, 100 grams (about 3-1/2 oz.) of regular plain yogurt contains 77 calories; and 7.1 g carbohydrates, 5.3 g protein, 3 g fat, 229 mg potassium, 181 mg calcium, 142 mg phosphorus, 75.5 mg sodium, and vitamins B<sub>1</sub>, B<sub>2</sub> and B<sub>12</sub>. It has been found that yogurt contains a digestive enzyme that prolongs life. Humans naturally produce this enzyme in their childhood but it becomes deficient as they reach adulthood. It has also been proved that besides all the healthful elements found in milk, yogurt contains a teeming load of bacteria – about 100 million per gram. These multiply in the intestines and, by getting rid of the accumulated germs, relieve stomach ulcers, dysentery, and promote excellent digestion.

As they ripen enzymes in *bananas* convert their large amount of starch – about 20% – into easily digestible natural sugars – sucrose, fructose and glucose, all of which the body uses. They are rich in fiber, potassium and vitamins A, B, and C, and contain calcium, fat, iron, magnesium, phosphorus and protein. Each 100 g (3.5 oz.) of their creamy white edible flesh includes 100 nutritious calories – higher than most fresh fruits. When compared to an apple, a banana has four times the protein,



The use of pomegranates has become popular with cooks in the past few years.

twice the carbohydrates, three times the phosphorus, five times the vitamin A and iron, and twice the other vitamins and minerals. Hence, it is better to say, not an apple, but “A banana a day keeps the doctor away!”

It has been scientifically established that *honey* contains some 75 ingredients, including 23 types of minerals, five enzymes, five organic acids, aromatic volatile oil, fruit and grape sugars, proteins, seven vitamins of the B complex group and other components needed by the human body. Containing more minerals and vitamins than sugar, this highly nutritious bee by-product has been, for thousands of years, employed as a medicine. Some 50 studies published by the *British Journal of Surgery* and other publications, attest to the healing qualities of honey, especially in banishing infections, promoting skin growth and in the prevention of scarring.

From these 10 foods, great healthy dishes with one or the other of these foods as a main ingredient can be prepared, such as these few below:

### Barbecued Salmon Steaks

*Serves about 6*  
**2 pounds salmon steaks**

#### *Marinade:*

**1 teaspoon chili flakes**  
**4 tablespoons soy sauce**  
**4 tablespoons honey**  
**2 tablespoons water**  
**1 tablespoon grated ginger**

#### *Sauce:*

**3 tablespoons mayonnaise**  
**2 tablespoons honey**  
**1/8 teaspoon cayenne**

Place salmon steaks in a casserole then combine the marinade ingredients and pour over steaks. Refrigerate and allow to marinate for 1 hour, turning the steaks over once or twice.

Make a sauce by combining the ingredients, set aside.

Wrap fillet with aluminium foil then barbecue over medium heat for about 10 minutes, turning over wrapped steaks once. Serve with sauce.

### Garlic Chicken

*Serves 6*

**2 tablespoons olive oil**  
**2 lbs. boned chicken breasts, cut into 1 inch wide strips**  
**1 head garlic, peeled and crushed**  
**1 teaspoon tarragon**  
**1 teaspoon salt**  
**1/2 teaspoon pepper**  
**1/2 teaspoon thyme**  
**1/8 teaspoon cayenne**  
**1 cup water**

Heat oil in a frying pan, sauté chicken strips over medium heat for 5 minutes. Add garlic, stir-fry for 3 minutes. Transfer frying pan contents to a casserole.

Combine remaining ingredients then stir into the casserole. Cover and bake in a 350°F preheated oven for 30 minutes. Uncover, then bake for another 30 minutes or until chicken is tender. Serve hot with mashed potatoes or cooked rice.

### Lentil and Potato Soup

*Serves about 8*

**4 tablespoons olive oil**  
**2 medium onions, chopped**  
**4 cloves garlic, crushed**  
**4 tablespoons finely chopped fresh coriander leaves**  
**1 small hot pepper, finely chopped**  
**7 cups water**  
**3/4 cup dried lentils**  
**2 teaspoons salt**  
**1 teaspoons pepper**  
**1 teaspoon cumin**  
**3/4 teaspoon ground ginger**  
**2 medium potatoes, diced into 1/2 inch cubes**  
**4 tablespoons lemon juice**

Heat oil in a saucepan, then sauté onions, garlic, coriander leaves and hot pepper over medium heat for

8 minutes. Stir in remaining ingredients except lemon juice. Bring to boil and cover. Cook over medium/low heat for about 50 minutes or until lentils and potatoes are well done, adding more water if necessary. Stir in lemon juice and serve.

#### Garlic Sauce

- 1 medium head garlic, peeled
- 1 egg
- 1 teaspoon salt
- 1/2 cup olive oil
- 2 tablespoons lemon juice

Place in blender, garlic, egg and salt and blend for a few moments. Slowly drip in oil and blend for a minute. Add lemon juice then blend until a frothy sauce is formed. Serve with all types of grilled meat.

#### Spinach and Potatoes

*Serves from 6 to 8*

- 4 large potatoes, peeled, then cut as for French fries
- 4 tablespoons olive oil
- 2 cloves garlic, crushed
- 2 teaspoons shredded fresh ginger
- 1 teaspoon salt
- 1/2 teaspoon pepper
- 1/4 teaspoon cayenne
- 1/2 cup water
- 1 – 10 oz. pkg. spinach, thoroughly washed and chopped

In a saucepan stir-fry potatoes until they barely begin to brown. Add remaining ingredients, stir. Cover, cook over medium/low heat for 25 minutes or until potatoes are well cooked. Serve hot or cold.

#### Swiss Chard and Tomatoes

*Serves 6 to 8*

- 1 large bunch Swiss chard with ribs removed, cut into large pieces
- 4 tablespoons olive oil
- 2 medium onions, finely chopped
- 4 cloves garlic, crushed
- 1/2 hot pepper finely chopped
- 4 medium tomatoes, finely chopped
- 4 tablespoons fresh basil, finely chopped
- 1/2 teaspoon salt
- 1/2 teaspoon pepper
- 1/2 teaspoon ground coriander seeds

Thoroughly wash Swiss chard,



Chickpeas and Yogurt Platter

then place in boiling water and cook for 3 minutes. Drain and place on serving platter, but keep warm.

Heat oil in saucepan, then sauté onions over medium heat for 10 minutes. Stir in garlic and hot pepper, then sauté for a further 5 minutes. Stir in remaining ingredients, then cover and cook over low heat for 15 minutes, adding a little water if necessary. Spread evenly over Swiss chard, serve.

#### Potato Salad

- 1 small can anchovies (1.75 oz.), cut into small pieces and the oil reserved
- 4 tablespoons parsley, finely chopped
- 4 tablespoons green onions finely chopped
- 2 cloves garlic, crushed
- 1/2 small hot pepper, very finely chopped
- 4 tablespoons olive oil
- 3 tablespoons vinegar
- 1/2 teaspoon salt
- 1/4 teaspoon pepper
- 4 medium sized potatoes (about 3 inches long each), boiled, then peeled and diced into 3/4 inch cubes
- 4 hard boiled eggs, chopped

Combine all ingredients, except the potatoes and eggs, but includ-



Pomegranate and Almond Delight

ing reserved oil in a salad bowl, add potatoes and eggs. Toss just before serving.

#### Chickpea and Yogurt Platter

*Serves 6*

In Damascus, this dish is usually served as a part of a hearty breakfast.

- 2 medium loaves Arabic bread (pita), toasted; then broken into small pieces
- 1 can chickpeas (19 oz.), drained
- 1 cup plain yogurt
- 1 clove garlic, crushed
- Salt and pepper to taste
- Seeds of one pomegranate
- 2 tablespoons lemon juice
- 1 tablespoon *tahini*
- 2 tablespoons butter
- 4 tablespoons pine nuts or slivered almonds
- 2 tablespoons chopped parsley

Spread bread evenly on a platter; then spread chickpeas evenly over top and set aside.

Thoroughly combine yogurt, garlic, salt, pepper, pomegranate seeds, lemon juice and *tahini*; then spread over chickpeas.

Melt butter in a frying pan; then sauté pine nuts or almonds until they begin to brown. Spread nuts over yogurt mixture; decorate with parsley and serve.

#### Banana and Yogurt Delight

*Serves from 4 to 6*

- 2 medium ripe bananas, peeled and chopped
- 2 cups plain yogurt
- 6 tablespoons honey
- 2 tablespoons lemon juice
- 1 teaspoon vanilla

Place all ingredients in a blender and liquefy. Chill; serve as a dessert or for snacks.

#### Pomegranate and Almond Delight

*Serves about 6*

- Seeds from 4 medium sized pomegranates
- 1 cup slivered almonds
- 4 tablespoons soft honey
- 2 teaspoons rose water

Thoroughly combine all ingredients until the honey coats all pomegranate seeds and almonds, place in a serving bowl. Chill, serve.

# Preserve rosemary & parsley by drying



BY DREW B. FRANK

The first frost of the season was forecast for the overnight hours. Some of our crops were still producing, so I grabbed a basket and headed out to the garden.

I picked the last of the green and wax peppers and brought them in. The beets could wait since the cold doesn't affect them too badly. On the way back to the house though, I noticed that the rosemary and parsley were still going full force.

After depositing the peppers inside, I grabbed a pair of scissors and went to the herbs that were growing out front. I made a few deft snips and filled the basket with freshness.

Once back inside, I rinsed them under cold water and patted them dry. Then I found the Nesco food dehydrator and put it on the counter.

I trimmed the cut rosemary to a length that would fit into the dehydrator and placed it on the trays. I kept them fairly uniform, allowing space

between them. When one basket was full, I put another on top and continued.

When the rosemary was done, I moved on to the parsley. I trimmed the leaves from the stems and put the finished items on trays, again keeping space between the herbs.

When done, I put the top on the dehydrator, set the selector to 95°F and plugged it in.

The afternoon brought an enticing aroma from the kitchen as the herbs dried. I allowed them to dry for 24 hours and checked them the next day. The parsley was finished, dry and brittle. I placed the leaves into a pint mason jar for storage in the dark pantry.

The rosemary still contained moisture, so I removed the trays that had held the parsley and put the top back on the machine. I bumped the setting up to 105 this time.

Another 24 hours and the rosemary was done. I used a jelly jar for storage, stripping the herb from the stem. This jar will also reside in the pantry.

There you have it; two jars of herbs that will grace our winter fare.

*You can find Drew at Harrisburg Magazine or follow him on Twitter!*

For more information on dehydrators, check out Pleasant Hill Grain Co. (pg. 12), or Excalibur ([www.excalibur-dehydrator.com](http://www.excalibur-dehydrator.com))



Herbs can be dehydrated — just set at a lower temperature if you use a machine.

The horse barn:

# The 10 most commonly asked farrier questions

By BRYAN FARCUS MA, CJF  
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## The unanswered...

An anonymous author once wrote:

*"Everything that is either timeless or priceless comes to us in the form of art. Those things which are based on mechanics alone must be updated periodically and for a price."*

Each time I read this passage, I am reminded of the importance of recognizing our work as an expression of art. And, to express one's self requires that we get in touch with our artistic abilities. These abilities are



Shoeing a horse is like trimming your toenails — done properly, it doesn't hurt at all. Photo by Miriah Reynolds

comparable to muscles — only through exercise will they develop and become definite. A master craftsman or artist in any field can have some difficulty explaining how his or her work turned out so beautifully. Similarly, an expert horse shoer can perform his or her work on such a level that there seems to be an indescribable beauty about it. On a fairly regular basis, I am approached by many people and I receive a variety of questions. The most difficult to explain are those that involve the "feel-of-the-skill." In all honesty, the clearest understanding of any art involves going beyond what any words could ever reveal.

## The easily answered...

Fortunately, there are a few questions that are simple and general enough to answer. In top 10 order, they are as follows:

### #10: How can a person become a farrier?

There are two ways to obtain the horseshoeing and horsemanship skills that are necessary in order to become a professional farrier. One is through a farrier studies program at various accredited schools, and the other is through a private apprenticeship program offered by many older, more experienced farriers. Personally, I recommend a combination of both. In most cases, expect at least two years of basic training. Also worth mentioning is the idea of continuing education. This can be achieved through clinics, seminars, "ride-alongs" with more experienced farriers, or just simply taking some time to research new ideas.

### #9: Is there a high risk of back injury?

To honestly answer this question, I must start by saying that horseshoeing is a physical activity and just like any hands-on activity, there is a chance of injury. However, there are two measures a farrier can take to lessen this risk. The first is to prepare for the activity by stretching and exercising. Many farriers do a daily routine of stretching the lower back muscles before doing their work; very similar to that of a baseball catcher before the start of each game. The second involves preparing the horse. Most often the majority of injuries result from failed attempts to shoe untrained horses. Forceful pressure or restraints put upon a horse will always increase the level of a horse's "trapped fear" and, in turn, that increases the farrier's odds of getting seriously injured. Instead, I recommend that we rely on a "lasting" training technique, in order to gain the horse's trust before attempting any horseshoeing.

### #8: Does a farrier get kicked often?

Any experienced farrier knows all too well about this. I think I'm not alone in saying that on an on-going, almost subconscious level the fear of getting kicked exists and the amount of risk a farrier assumes is based on his or her personal experiences. More definitively, I can say that by nature a horse will kick for one of two reasons: a) the threat of an attack, or b) the threat of being trapped. In my opinion, to lessen the risk of a kick and at the same time gain a more "lasting" control of the horse, the farrier should prescribe to the horse owner a logical horsemanship training technique. There are several Basic Body Language Systems (BBL'S's) currently being used and promoted by successful trainers.

### #7: Can you make a living as a farrier?

According to a recent survey published in the *American Farrier's Journal*, the annual income for a farrier can easily reach "six figures."

This, of course, varies according to the individual's experience and demand factors.

**#6: How much does it normally cost to have a horse shod?**

Depending on the extent of the work, which is based on the health of the horse's feet, the price (after calculating trip fees and recommended hoof care products) may often end up in the \$100 range.

**#5: How often do horses need farrier work?**

This will depend on the overall condition of the horse, the climate he lives in, and what his job is. On an average, most farriers will recommend a visit every six to eight weeks.

**#4: Are there different shoes for different horses?**

Yes; modern horseshoeing requires that the farrier choose the shoes that will best support and protect the horse and at the same time allow him to perform. A qualified farrier will examine the conformation and movement patterns of a horse, in order to select the shoes that are most beneficial.

**#3: Why do some horses need special shoes?**

In this situation, you may hear some farriers referring to the concept of "corrective" shoeing. Perhaps it is more easily explained if you consider this simple thought: "A horse is shod correctly if his shoes promote strong feet, strong legs and strong gaits (way of traveling)." If, for some reason, a horse is weak in any one of these areas, special shoes could help. These are three of the most common situations: a) Weak, tender feet often bruise easily. Flat padded shoes can prevent such occurrences. b) Weak limbs, resulting at birth or due to an injury, can be supported by various combinations of Bar shoes and/or Degree (wedged) pads. And c), occasionally, horses have trouble moving freely and this weakness in gait could cause the horse to experience a hitting (interfering) of his limbs. Various toe or heel adjustments of



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the horse's shoe can improve the support, timing, and direction of his footfall patterns.

### #2: If horses in the wild can survive without farrier work, why can't the others?

The truly "wild horses" as we know them are a thing of the past. In modern times, horses are products of human influence. Being as it may, horses are now managed and even bred selectively to meet human standards. Unfortunately, these standards are not always in the horse's best interests. As a result, over the centuries weaker traits have become more dominant. Remember that in the actual wild only the strongest of stallions and mares successfully bred. This was the natural order of selection, which in most cases produced stronger, healthier feet.

And the #1 question, most often asked is...

### Does nailing-on a shoe hurt the horse?

If done properly, the horse does not experience any pain. The keratinization process (division of dead cells) that occurs within the horse's hooves is the same as that of our finger and toenail growth. Within reason, you can cut through or re-

shape the nail. Each time a farrier works on a horse's foot, he or she learns the quality or "vertical depth tolerance" differences that exist from one horse to another. A competent farrier will spend hours practicing the mechanics of accurate nailing techniques. These hours of practice can be compared to the countless number of bullets a marksman will fire at a target in an effort to become a sharp shooter. The ability to develop a strategic approach toward nail placement, along with the ability to analyze the health of each foot, is the key to keeping the shoeing process "horse-friendly."

### Resources

- [www.farrierfocus.com](http://www.farrierfocus.com)
- [www.butlersprofessionalfarrierschool.com](http://www.butlersprofessionalfarrierschool.com)
- [www.myhorsematters.com](http://www.myhorsematters.com)
- *Shoeing In Your Right Mind*, Dr. Doug Butler
- *Six Figure Shoeing*, Dr. Doug Butler
- *American Farrier's Journal*

### Additional reading

Farrier-Friendly series, "Farrier Phobia," "How Your Farrier Will Choose Those Shoes," "Barefoot Facts," and "General Horse Foot Care."



### Family album:

COUNTRYSIDE: Every night at bedtime, these two cozy up together. For awhile, I thought Hallie was broody, and kept taking her out of the buck stall and putting her on a nest of eggs, she'd freak out and run back to the buck stall, finally figured out that she's in love with Holstein. — Joanna Wilcox, Boone, North Carolina; <http://boonedockswilcox.blogspot.com/>

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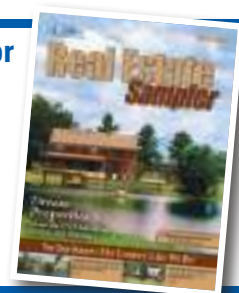


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The cow barn:

# What is a crossbreed or a composite?

BY HEATHER SMITH THOMAS  
IDAHO

Today we frequently hear the terms crossbred, hybrid, composite, synthetic—when referring to certain animals—and we often wonder exactly what these terms mean. Some of these names are used interchangeably, especially when speaking of new lines of cattle in which a planned mating method is designed to combine the desirable traits of two or more breeds into one animal, but these terms do not all mean the same thing (see sidebar on terminology and definitions).

Because of the advantages of hybrid vigor (heterosis) gained when utilizing crossbreeding in a beef production program, almost every major breed has jumped on the bandwagon to get in on the action by creating and promoting composites that utilize their breed as one of the components. They come up with fancy names

for these composites—Amerifax, Limflex, SimGenetics, Stabilizers, Rangemakers, Balancers, Southern Balancers, Chiangus, Equalizers—and it's like trying to choose between brand names at the grocery store.

So what exactly is a crossbred or a composite animal? Technically, a crossbred is an animal produced by breeding two purebred parents of different breeds. The term can also refer to an animal produced by breeding a crossbred animal to a cow or bull of a third breed, or might even refer to the result of mating two crossbred animals with each other. The term crossbred generally refers, however, to the first generation produced by mating animals of different breeds.

By contrast, a composite is an animal produced after several generations of selective crossing with two or more breeds, to come up with a uniform group of animals that have a fixed percentage of each of those breeds. Examples of composites

that have been around a long time include Beefmaster, Brangus, Santa Gertrudis, Red Brangus, Braford, and so on. These composites have now become accepted as uniform types of cattle that combine some of the advantages of the parent breeds and still retain a certain amount of heterosis.

Some composites have their own breed associations, with herdbook and registration of association members' cattle. Many of the original composites in the U.S.—like Brangus and Santa Gertrudis—were formed with a specific goal in mind. The purpose was to create beef animals that combined beef-production qualities of British breeds with the heat tolerance and insect resistance of Brahman (*Bos indicus*) cattle so these hybrid animals could thrive and be more productive in our southern climates.

Some of the newer composites have been created to simply produce a type of cattle with more hardiness and better performance in a variety of environments, taking advantage of the feed efficiency/gainability and increased fertility of the hybrid animal and seeking to blend the best (most desired) features of two or more breeds.

## Heterosis

Hybrid vigor, also called heterosis, is a phenomenon associated with crossing two breeds or species. A well-known example of the latter would be the crossing of a horse and a donkey to create a mule, or crossing bison and cattle to create a hybrid animal that some people have called beefalo. By crossing two different breeds or species (or sub-species), we are able to create traits in the offspring that are superior to or stronger than those of the parents.

For instance, crossbred cows tend



A composite cow and calf.

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I'm serious. This might be your only opportunity to get the new report on how to stay alive in a panic driven crisis. And let me tell you...

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As you can imagine, we've received nothing but glowing testimonials from the few readers who have read the report so far. These folks now know to take decisive action when things start to turn chaotic. I've had people tell me that they were blown away by the report because it was so brutally honest about what to expect from human behavior when you take some of the structure of civilization away from them!

I agree. There isn't anything else like it on the planet!

And the best part is, everything you'll learn in this report called "Gone Before You Get There" is easy to learn how to do. You'll master becoming prepared in no time with this report in your hands. Each tactic puts you in the driver's seat and you'll know exactly what to expect when polite society breaks down...

## Before Anyone Else!

You're going to love this new report. It's all about keeping your family alive and well when the grocery store no longer has the things you've grown to depend on. And let me tell you, it's amazing!

The report shows you a ton of ways to get out of any mess that a panic driven shortage or meltdown may bring your way. Even veteran "survivalists" get their eyes opened from this report!

Like when the power goes out and it's freezing cold outside. The report shows you how to stay warm when everyone else is getting cold!

Or, instead of not having a flush toilet, you can flush all you want whenever you want!!

You'll also learn...

- **The things you absolutely must have in your house before any crisis strikes.**
- How to have all the pure drinking water you need without buying an expensive filter!
- **Which 3 food items have an almost indefinite shelf life**
- 4 grains that have a two year shelf life

One section teaches you about using grills and solar cookers when you're hungry.

Sometimes in a crisis you can't buy medications. You'll learn what to do "for meds" in an emergency. PLUS, you'll learn how much cash to have on hand and exactly where to stash it!

Next, the report gives you 16 non-food items that your life may come to depend on. This list is so important that you are genuinely putting your family's lives at risk if you don't have the items on THIS list.

## How To Get Out Of The Most Dangerous Situations In The World!

Probably the most perilous predicament to be in during a panic is not having the basics of everyday living. Americans depend on drug stores, grocery stores and hardware stores. But think about what it would be like if... ALL of them were closed.

Listen: When desperate people can't get what they want... when they want it... they tend to freak out. That's life in America when the stores ARE open. Think about millions of spoiled rotten American consumers staring at "CLOSED" signs on all the stores they normally depend on.

During the coming food shortage, folks will really panic which will make matters worse by a factor of a hundred. Faced with

closed stores, some people will give up altogether... and wait for the government to save them. Others will get weapons and take from those weaker than they. As we have learned in recent history in the U.S., hungry people don't hesitate to take what they want.

But the report shows you a dozen devastatingly powerful but simple ways that can get you out of any situation like this - that's right, ANY shortage or crisis - in an instant! Plus, this report "turns the table on both the grid and the system"!

This information can only be found in this report. No one outside of the writer has access to this information. Honestly... you will be among a handful of people on the planet who are privileged to have this knowledge!

One of the things the report tells you to buy (which I can guarantee you've never seen before) can easily be the one single thing that keeps you alive!

The report also discusses society's "pressure points" that you must watch for to alert you of the coming storm. If you do, you'll predict panics and be able to prepare for trouble...

## Ahead Of The Crowd!

Even if you are caught with no food in the house, this report shows you easy ways to use your imagination and a little ingenuity to come up with more food than you can possibly eat.

Then, the report shows you what to do in the event you have to get the heck out of Dodge! Knowing when and how to evacuate becomes pretty darn important in a breakdown.

Or if you find yourself in a flood, tornado or earthquake - the report tells you how to get to safety in a hurry.

Or if you find yourself confronted by "desperate" strangers.

Plus, you'll learn how to turn an ordinary garden into a survival garden and grow enough food for everyone.

And here's a nasty situation to be in: You need food right away. Stores are closed and your house is completely out of food. The report shows you how to find a source of food that 99 out of 100 people won't know about. And find it fast.

Frankly, almost no one has a way out of this predicament. But the report has a clever section that enables you to have plenty of "new found" food when you need it most. This is awesome.

The report also shows you...

- **What to do when the power goes out.**
- How to make sure your family gets plenty of critical proteins.
- **8 survival habits that can save your life.**
- Exciting reasons to reconsider a solar backup.
- **Why you need more water in a crisis.**
- How to deal with severe cold!
- **Fascinating, clever and "dirty" little tricks that enable you to escape desperate situations!**
- Crucial ways to keep your pets alive in a melt down.
- **Cheap and easy "tools" to stock for self-defense when hunger hits the public.**
- And much, much more.

The best part is... you don't have to be a backwoodsman to get going and get prepared.

And most importantly you'll learn...

## The Top 77 items That instantly Vanish From Store Shelves in A Panic!

As you can imagine, survival after the crisis hits is going to be really business. The writer of this report has been involved in more than his fair share of high-intensity, life-or-death "survival situations" where you never carried food but always had to eat.

In a way, crisis survival is a little like hand to hand combat. That's why "Gone Before You Get There" is so perfectly suited for keeping you alive in a modern melt down. This is NOT a game. It's definitely not for wimps. It's a "take no prisoners" survival system that assures you and your family will survive in relative comfort when it gets tough.

Listen: When it comes to our families, we want a system that will keep them safe, and well fed.

## And That's How it Should Be!

"Gone Before You Get There" - I believe - is superior to all the other survival reports and systems we've ever seen and read. (I know I'm going to make a lot of people upset by saying that, but it's what I believe in my heart.)

I've looked at it from all angles, and this is the survival system I would trust with my life.

Seriously... with all the weird stuff that's been going on around here lately (I'm not comfortable telling you everything right now)... it's obvious that someone doesn't want you to have this report.

And when you read "Gone Before You Get There", you'll know why.

Listen, I don't want to draw a lot of attention to myself when I make this report available to our customers. I've got to be very careful how I go about this. I don't want to take the chance of creating too many red flags and getting my name on an "enemies" list again.

## Don't Be Left Out!

I would hate to have you miss out on this report - especially when I know how important this information can be to your personal safety and well-being. But I also have to look out for my safety and well-being... and right now I think I might be on someone's "target" list.

If I can get this information to you now, instead of later, I'd feel a whole lot better. Not that I'm asking you for a "favor." I wouldn't do that. I want you to buy this report for your self-preservation, not mine. But my strategy is to get this into the public before anything strange happens.

That's one of the reasons I'm going to give you an attractive price discount on this report. The other reason is that it's a "rough cut" with a few imperfections in it (because that's all we have to go with). You probably won't even notice them though unless you're a high school English teacher.

## \$40.00 Report... Now Free!

Now I must confess something: This report isn't "perfect" in its present state, and I don't feel right selling it to you at full price. Normally, I would sell it for \$40.00. But right now, I'm going to give it away when downloaded digitally, or you can have a hard copy of the report mailed to you if you just send us \$5.00 to cover shipping and handling.

You can call in to place your order for the hard copy by calling...(877) 327-0365.

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Sincerely,

Bryce Pearson  
**"Gone Before You Get There"**

P.S. Get your copy of "Gone Before You Get There" today while there is still time. This country is truly in for disasters of Biblical proportion. It's that serious.

## Livestock breeding terminology and definitions

**Crossbreeding:** The mating of two or more breeds.

**Crossbred:** An animal created by mating two purebred or straightbred animals of different breeds, or mating a crossbred with an animal of a third breed.

**Purebred:** An animal with parents of the same breed—which has been pure since the beginning of that breed. A purebred may be registered or unregistered.

**Straightbred:** An animal of just one known breed, though not necessarily purebred or registered.

**Composite:** A uniform group of cattle created by selectively crossing two or more breeds for several generations and establishing a certain fixed percentage of each breed (such as the Santa Gertrudis that carries 5/8 Shorthorn genetics and 3/8 Brahman, or the Brangus that carries 5/8 Angus genetics and 3/8 Brahman, or the Beefmaster that carries approximately 1/2 Brahman genetics and the other half a blend of Hereford and Shorthorn in roughly equal percentage). In essence a composite is a new “breed” designed to retain a certain amount of heterosis in future generations without crossbreeding, and can thus be maintained as a “pure” breed without further infusions of other breeds.

**Synthetic:** This term is used to describe a new line of cattle from an open breeding program where new breeds can be added at any time. No fixed percentage of certain breeds is required. Bulls used might be crossbred or purebred, to add another breed to the mix. Many producers use crossbred bulls to good advantage in this type of breeding program, creating whatever mix in the calves might be desired. For instance, a crossbred bull can be used on crossbred cows of the same two breeds, to keep the mix the same in the calves. Or a crossbred bull can be used on cows of different crosses, to add another set of desired traits to the mix. In this way the producer can often gain the most benefit from crossbreeding (the biggest “shot” of hybrid vigor) and also avoid some of the limitations associated with traditional crossbreeding schemes.

**Hybrid vigor (heterosis):** The degree to which a crossbred or composite animal outperforms the straightbred/purebred parents in any specific trait (such as growth, health and immune responses, fertility, longevity, milking ability, etc.)

**Inbreeding:** The mating of closely related individuals such as father-daughter, brother-sister, half brother-half sister, grandfather-granddaughter, etc. to try to double up desired traits. The downside of this breeding program is a decrease in genetic variations and also more possibility of doubling up undesirable traits, some of which may result in genetic defects.

**Linebreeding:** A form of inbreeding that concentrates the genetics of a certain ancestor; the mating of relatives to try to “fix” and retain the desired traits of that ancestor or bloodline. Like inbreeding, this type of breeding program must be done carefully, to avoid doubling up of undesirable traits that were hidden in the original animals.

**Outbreeding/outcrossing:** The mating of unrelated individuals within a breed to produce superior offspring by obtaining “new” genetics. Selective outbreeding is the best way to improve certain traits and retain vigor when staying within a certain breed, though the results are slower and less dramatic than with crossbreeding.

to be more fertile (reaching puberty sooner and breeding back quicker after calving) and to have a longer life of productivity, producing more calves in their lifetime, than purebred cows of either parent breed. Crossbred bulls are more fertile and tend to be more active and vigorous than bulls of the parent breeds. Crossbred calves are hardier and have a higher survival rate due to their stronger immune systems. They tend to gain weight faster and more efficiently, and adapt more readily to harsh environments.

Research has shown that part of the reason crossbred animals are hardier than purebreds is because of a stronger immune system. Animals that embody heterosis tend to develop better immunity when vaccinated or exposed to disease, and crossbred cows supply their calves with more antibodies in their colostrum—which in turn keeps the calves healthier through the risky days of early calthood. After the passive immunity wears off, a crossbred calf builds strong immunity of his own. This all adds up to higher survival rate in calves.

Heterosis beneficially influences traits like feed efficiency and longevity, which are important to beef production. In general, the more diverse the breeds being crossed, the greater the heterosis we see in the calves—as when crossing Brahman or other zebu-based breeds (*Bos indicus*) with British breeds or European breeds (both of which are *Bos taurus*). Greater heterosis response is also gained when crossing British breeds with European breeds than when crossing them among themselves, since the British breeds are more closely related to one another than they are to most European breeds.

All “breeds” were originally created with some degree of inbreeding and linebreeding to “fix” certain desired traits that were seen in the foundation animals. A breed is essentially a closed group of cattle, to maximize uniformity and to exclude infusion of any other traits. Keeping a breed “pure” always limits the genetic potential of these animals,

and tends to accumulate inbred traits over time. These traits include lack of hardiness, less immune response, less vigor.

Inbreeding has the potential to double up recessive genes in the limited gene pool, or undesirable traits that result from mutations. Mutations occur in humans and animals all the time, but rarely cause problems unless doubled up by breeding related individuals that both carry the mutated gene from the common ancestor. Inbreeding limits variety and increases the probability that inherited defects will crop up.

By inbreeding during the early history of a breed to establish uniformity and “fix” certain desired traits, some degree of beef production potential (the opportunity for maximum growth and vigor) was sacrificed. Thus crossbreeding is the opposite of inbreeding. It opens the door for wider genetic variation and results in heterosis, which in simplest terms is essentially the recovery of lost potential—the reversal of accumulated inbreeding’s depression of traits. In just one generation, the crossbred offspring exhibit the greatest degree of what was lost (in growth and vigor) through many generations of pure breeding within a closed gene pool.

**True composites take many years to create**

A true composite is not easy to develop because it requires several generations and a large population of cattle. A composite animal is produced by mating crossbred animals of similar breeding; the breed mix in both the sire and dam is the same, and has been standardized into a predictable blend over several generations of breeding crossbred to crossbred. The animals all have the same percentage of specific breeds—whether half-and-half, or 3/8 and 5/8, or some other fixed percentage of two breeds, or a specific mix of three or more breeds.

One example would be the MARC (Meat Animal Research Center) composites, such as the MARC II, which is a blend of breeds that produce individuals that are half British and



half European breeds. Leachman Rangemaker is a composite that is 3/4 British (a certain blend of Red Angus and Black Angus), and 1/4 European (a blend of Terentaise, South Devon, and Salers). Another composite example would be the Leachman Stabilizer that is 1/4 Red Angus, 1/4 Hereford, 1/4 Gelbveih and 1/4 Simmental. Another example is the Noble Line, in which the genetic components are approximately equal amounts of Gelbveih, Angus and Brahman blood. Many popular composites are in use today, including blends of Angus-Gelbveih, Angus-Salers, Angus-Chianina, and many other combinations of British and continental breeds.

The key to creating a reliable composite that retains a certain percentage of heterosis (and not losing it to inbreeding) is to maintain a large enough foundation herd size to adequately represent the genetics of each breed used—without doubling up those genetics. Inbreeding/



Crossbred cows pictured here and above.

linebreeding has to be avoided in future generations to maintain high levels of heterozygous genetics and heterosis.

Whenever a composite is formed, there is always some loss of heterosis when the crossbreds are mated to one another, but once the composite is established and the herd is closed (just mating the composites—animals that all have similar breed blends—with one another) the resulting heterosis will be consistent and constant. Unless the population of animals in the composite groups is very large, however, inbreeding will eventually reduce the effect of heterosis.

If the composite was formed with foresight, a complementary blend of breeds, planning, and adequate numbers, use of a composite can simplify the goal of producing cattle utilizing heterosis. It can be a feasible, low-management alternative to traditional crossbreeding schemes.

Advantages of composites include the ability to take advantages of desired traits in several breeds, offsetting the weaknesses of one breed with the strengths of another, and targeting a specific environment with cattle that can do well in that environment—along with some retention of heterosis over time and subsequent generations. For instance, a four-breed composite tends to maintain 75 percent of the hybrid vigor you’d see in a first-generation cross, and will retain it indefinitely if the composite population is large enough to avoid inbreeding.

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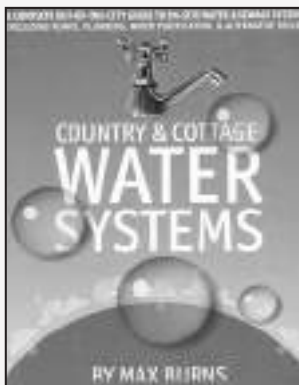
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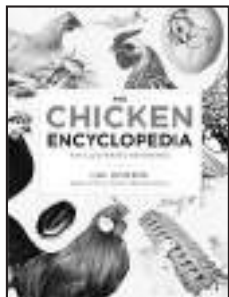
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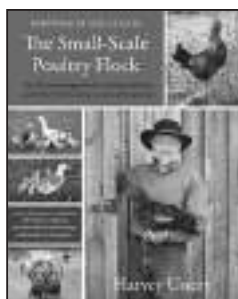
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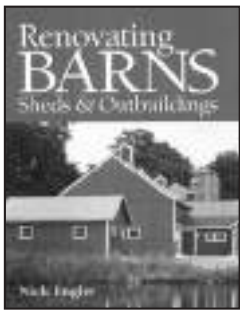


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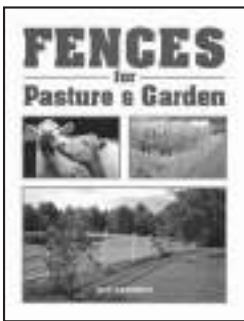
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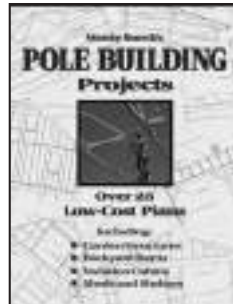


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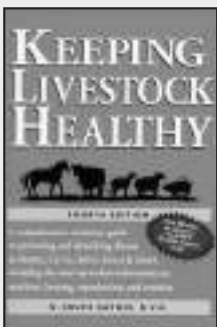


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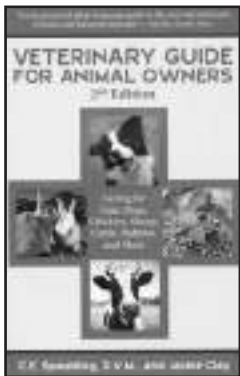
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The henhouse:

# Breedingmeatchickens

## ~ Leave it to the pros ~

COUNTRYSIDE: I have enjoyed your magazine for many years. Although I'm not doing as much "physical" farming as I did in earlier years, we still raise egg and meat chickens, geese and my husband has a big garden each summer.

Every spring we usually order 25 Cornish/Cross meat chicks as day olds to raise and to put in the freezer as roasters in about eight weeks. Have done reading that they are developed from crossing a White Rock or Delaware rooster with a Cornish game hen. I found Dark Cornish chicks and White Rocks at different hatcheries this summer—they are now eight weeks old and very healthy. Although the hatcheries say you can't arrive at the Cornish/Cross chicks by doing this crossing yourself, I am wondering why not? I had hoped to segregate a few White Rock roosters with some Cornish hens next spring, then incubate the eggs. The hatchery said the Cornish are poor layers and their size makes natural fertilization difficult, and they are used in the breeding program to create Cornish/Crosses for their unique flavor and it isn't recommended to try to breed them yourself to achieve this end.

Is this true or is this hype to ensure homesteaders keep buying the Cornish/Cross chicks from them? Do you have any insight on this question? Would be very interested to have more info on this subject, as I can't seem to find a definitive answer anywhere. If all else fails, I guess I will keep the White Rocks in my egg laying flock (as I love their look and dual purpose) and use the Cornish



**Dark Cornish hen named Penny.**

*Photo by Tammy Ellis, Falling Waters, West Virginia*

for the freezer. — Linda Steiger, Forestville, New York

**Good question!** It seems so logical: if a Rock/Cornish hybrid is nothing more than a cross between the two, what's the big deal? Why can't just anybody do it? (Some people will ask, "Why would you want to?" More on that in a moment.)

The problem is that it's not that simple. The first crosses (which incidentally used Cornish males and Plymouth Rock females, not the other way around, as you're proposing), had many problems, including fertility issues, slow growth, and disease susceptibility. These birds were gradually improved using mass selection, but the industrialization of the poultry industry soon gave way to much more sophisticated methods: birds might be examined with ultrasound or x-rays to study the shape of muscles and bones, and blood oxygen levels were measured to determine cardiovascular health.

In a nutshell, research and development became so important, and so expensive, that the primary breeders consolidated, until today, only three companies reportedly provide 80% of

the broiler breeding stock, world-wide: Cobb-Vantress (the Vantress part having won the \$5,000 prize offered by the Atlantic & Pacific Tea Company "Chicken of Tomorrow" contest in 1948); Aviagen; and Groupe Grimaud.

Each of these has several brands, but they are all specially developed and selected *strains* that are not what you'll get from any hatchery. And it gets more complicated.

The "primary breeding sector" breeds pedigree stock kept on high-level biosecure farms. Their eggs (and they are not good layers) are hatched in special hatcheries. The chicks go through great-grandparent and grandparent generations, also on specialized company-controlled farms. Only then do we get the parent stock that passes to the production sector.

So you might be able to duplicate this at home with your Cornish and White Rocks, but not quite in the way you envision it: not without a great deal of work, knowledge, money, and time. Despite the names, they are not at all the same birds used in today's Cornish/Rock cross.

Today, of course, with the publication of the full chicken genome in 2004, the primary producers are also involved in genomics research, as well as transgenics — moving or removing genes, creating Frankenfoods.

Which brings us back to the question, why would you want to produce a bird with well-known health problems, a bird that is too lazy to forage so it's all but useless as free-range meat, and a chicken that balloons into "a flavorless mound of mushy meat with drumsticks"? Their only advantage is economy, and keeping your own breeding flock(s) will soon take care of that!

A number of people have combined these with your concerns, coming up with crosses more suited to homesteaders than the poor industrialized Cornish/Rock. Some I mentioned in *The Complete Idiot's Guide to Raising Chickens* include the Corndel, which Tim Shell produced from Cornish and Delawares, with line breeding and careful selection; and the Black Walnut, from Gene McGraw. No doubt there are many others: if you don't care to re-invent the wheel, this would be the place to start.

— J.D. Belanger

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The apiary:

## What's happening to the honeybees?

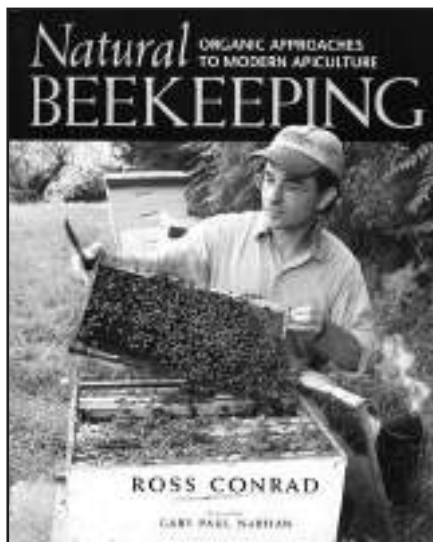
COUNTRYSIDE: I am a long-time reader and love your magazine — it is one of the best! That said, I had to write in regards to the November/December article "Impact of honeybee colony collapse disorder — fact or fiction."

I am a beekeeper who is currently taking my Master Bee Keeping Certification out of the University of Nebraska. I am also a board member for Partners For Sustainable Pollination, a non-profit that promotes education on pollinator habitat. At this time, in my opinion, there is not *enough* talk about what is happening to our honeybees and wild pollinators. It is not just the honeybee that is dropping in numbers, it is the wild pollinators too. They often eat from the same plants, though their home needs vary. Mr. Haldik forgot to mention in his list of suspect causes that nutrition is one of the major factors being looked at in this intensive research that spans 32 state universities working together. (That alone is almost unprecedented.) He looked at the crop production of almonds as the case that there seems to be no problem since the crop yields have increased. First off, the almond industry supplies about 80% of the world's almonds and they are constantly planting more trees in that area for production — I believe it is about one million acres now. This is a monoculture. Nothing else is allowed to grow between the rows of trees and the trees only bloom for a two to three week time in March. *All* pollina-

tors need a steady supply of pollen and nectar throughout the year and so there are no bees, wild or domesticated, living in this area year round. The bees have to be shipped in from all across the country at a time of year when they are usually dormant, fed sugar syrup and trucked thousands of miles just to pull off pollination for the almonds. But there is a problem in that there are no longer enough bees in the U.S. to take care of this feat. When colony collapse first appeared one beekeeper who owned 50,000 hives (anywhere from 55,000 to 75,000 bees per strong hive) had his bees in California for the almond pollination. In a two-week period he lost 40,000 hives to CCD. Do the math. I believe it was the following year that numbers had dwindled enough that it was evident that there was not enough bees to pollinate the almonds in the U.S. The USDA did something unprecedented in allowing honeybees to be shipped in from Australia just to fill the gap! This also brought exposure to new diseases like Israeli Acute Paralysis to all our honeybees that traveled there. Yes they are also experimenting with mason bees for pollination but it is not as easy to get a hive ready and on the ground as the honeybees. The fact is where there are monocultures there are not enough food sources for these pollinators to survive. That is the problem with monocultures — they are totally unsustainable. The almond industry would fail if these pollinators were not shipped in from all over the U.S. and Australia! As readers of this magazine may note, we are constantly looking at how to be prepared and live off grid — to be sustainable. One hiccup in that mass pollination migration would spell the loss of most of the world's almonds as well as the loss of a billion dollar industry yearly.

You can not look at the amount of crop land in the U.S. and compare it in a statement that it is all the same. Many places that were wild flower meadows have been turned into crop lands — the diversity of feed for pollinators in these meadows is not easy to reconstruct even with plantings.

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Bees travel two to five miles from their hive for forage and sometimes farther. Very few beekeepers move their hives for “source” feeding. Only large-scale producers move their hives around and most of them do it to pollinate a crop for pay. Any migratory bee keeper will tell you that bees get stressed when moved and most of them don’t like that they have to do it but it is their income. The USDA just awarded almost \$1,000,000 in grants to some of the leading scientists in CCD to try and develop integrative pollinator habitat into regular farming practices. That is how serious this is!

The spraying of chemicals is a factor for any beekeeper. Herbicides, fungicides as well as pesticides can kill honey bees and any other pollinator who gets too close. There are certain chemicals that are the most serious threat and they were not tested for the life of the honeybee or the life of a queen who can live for years. Chemical exposure in humans and animals can affect genetics—look at what happened with the use of DDT—a perfectly safe chemical we were told but it is still showing up in breast milk of humans—how many years ago was that banned? Or Agent Orange, that has affected multiple generations since vets returned from Vietnam, altering their bodies physically. More research has to be done on agricultural chemicals and how the long-term affect can change the health of pollinators.

And now to the food that would disappear. I am a chef and the fact is one-third of all we eat is pollinated by bees or the wild pollinators. From what I learned in my college nutrition class, I doubt we could survive on wheat, corn and other grains. Like the honeybees, we need a varied diet to supply the nutrients, minerals and vitamins necessary for life. It is an extremely naive person to think that we could survive without most of the fruits and vegetables we now consume. I believe it was Einstein, one of our greatest minds, who stated that if we lost the honeybee we would all die in four years! That is one theory I do not want to prove. I will continue

to fight for bringing facts to people about the plight of all our pollinators and continue to do research into the facts of this very serious issue. Here are some web sites that might interest you.

- [www.xerces.org](http://www.xerces.org)
  - [www.pfspbees.org](http://www.pfspbees.org)
  - [www.bees.tennessee.edu](http://www.bees.tennessee.edu) (Look for the Capps link to read scientific research being done around CCD.)
- Deborah McSweeney,

## Monoculture farming can't support honeybees

COUNTRYSIDE: I found the article “Impact of honeybee colony collapse disorder—fact & fiction,” disturbing because it was not only misleading but irresponsible. The author Maurice Haldik in his opening paragraph laid out his bias in support of monoculture farming, genetically modified food plants and pesticides by attempting to free them of any blame.

I decided to start a hive of bees this year by construction of a top bar beehive after supporting honeybees using the traditional Lanstroth approach several years before. I wanted to work with the honeybees again, and harvest some of that raw honey using a different approach that is inexpensive.

I have a developing orchard where I also trap insects for the Wisconsin Department of Agriculture and send in to my county every week through the growing season. Unlike most of the other apple growers that submit numbers to the Pest Bulletin, I do not spray my fruit trees with anything, ever, and the numbers of insects I record are much lower because beneficial insects are active. Last year I even identified an insect—the red-humped caterpillar (from a 1922 edition of the *USDA Farmers Bulletin*, which I believe is the most complete writing on insects that attack apple trees ever written) and sent larvae to an entomologist working in that program. Apparently the red-humped caterpillar is a rare sighting in Wisconsin, especially I suspect, in orchards that spray. This insect is a minor problem



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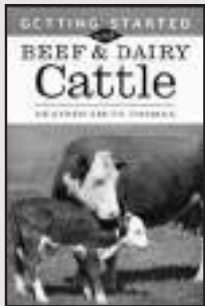
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that eats a little foliage.

From my observations, most of the pollination of apple trees in my orchard is carried out by bumblebees. Oddly enough, with a hive of honey bees within 15 feet of my plum trees, I never saw a single honey bee in those flowers, nor even bumblebees, in all the years I observed the plums in blossom; most of the plum pollination is carried out by flies, some that are easily mistaken for bees. Thus, I am very well aware of the importance of native pollinators, and also that there is a problem with some pollinators in certain parts of this country. I have read that certain native bumblebees have even disappeared from an area of Wisconsin.

Getting to the article, Mr. Haldik gave statistics he said are USDA statistics. What is interesting about his conclusion that he said was "far from an industry collapse," is not the conclusion of the USDA, who obviously work with the statistics they themselves collect. In the USDA report titled "Colony Collapse Disorder 2012 Annual Progress Report," during the winter of 2012, they recorded 22% losses (October 2011 to April 2012), the steering committee stated "...Nevertheless, the overall proportion of winter losses is still high, and the continued economic viability of pollination by honey bees remains threatened...."

Mr. Haldik provided what he said was a "peer-reviewed study conducted by the University of Maryland," where "GM corn pollen had no negative impact on honeybees." Well, I looked at that study and within the introduction in the very same sentence where it was stated there were no adverse effects, it was also stated the method of delivery has to be questioned because it did not mimic the way pollen is naturally processed and fed to larvae. The introduction continued: "Furthermore, exposure to Bt pollen could have other direct and indirect non-target effects in brood development in a honey bee colony. For young bees, the presence of Bt proteins in ingested pollen may affect hypo pharyngeal gland develop-

ment and thus the ability of nurse bees to make brood food. Effects on the orientation, foraging, and communications behavior could also impair the ability of worker bees to find and relocate food sources..." so the introduction stated.

What makes the misleading use of this study irresponsible is the fact that Bt (*Bacillus thuringiensis*) is a naturally-occurring insecticide used by some organic farmers, and Mr. Haldik used that study to lump together all GMO crops ("blame for this phenomenon on...genetically modified food plants...," "regarding GMO crops") as having no negative impact on honey bees, whereas he stated non-GMO corn is problematic when it requires insecticide treatment.

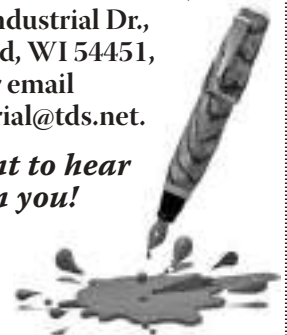
With his logic, Monsanto's RoundUp Ready GMO plants made with synthetic insecticides that could also include DDT (another synthetic insecticide), are safe for use around honey bees which is not indicated in that study by the University of Maryland.

Mr. Haldik also wrote that monoculture farming has been around for a century, as if longevity is a valid argument for this farming practice. I would also note that growers have been poisoning their fruit trees for over a century, too. The soil of an old orchard in the area was examined after all the Wealthy apple trees were removed and the soil had amounts of arsenic not recommended for any replanting unless the soil is cleaned up. — Mike Gellerman, Wisconsin

### Have a comment or question?

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**We want to hear  
from you!**



# When the going gets tough the tough make bacon



By JERRI COOK  
COUNTRYSIDE STAFF

**W**hen you make your living milking cows, you put yourself and your family in great financial peril. Not only are you subject to the consequences of any mistakes you may make, you're also at the mercy of the mistakes of others. No one knows this better than Adam McGrath and family. They were scraping by on their dairy farm—nothing glamorous, but they had no complaints. They had a beautiful daughter and another on the way. Their life was stable and they were happy with that. Then the cloud came—the cloud of chemicals, and things got tough in a hurry.

Adam was out in the pasture one windy afternoon, coaxing his herd to stop grazing and come into the barn, when he noticed a cloud. He smelled it before he saw it—a huge cloud of chemical herbicide being spewed from a neighbor's sprayer. The chemical drench wasn't reaching the GMO corn it was intended for. Instead, it wafted across Crow Raven Farm. He managed to hurry the cows away from the cloud and into the barn to safety, but not in time.

"The cows got sick first," he says. "They were twitching, bawling, not eating, had problems standing. It was bad." After a few days, the effects of the chemical tide seemed to wane, and the cows seemed normal enough. Adam, on the other hand, would never be normal again, and neither would Crow Raven Farm.

The road ahead was dark for the McGraths. Adam became violently ill. He endured several long hospital stays and bouts of chemotherapy. He couldn't milk cows. He could barely move. Adam's wife, Rebecca, who was expecting their second child, and their 10-year-old daughter tried to manage the herd. It was overwhelming, and eventually the decision was made. The herd had to go, and so did a healthy chunk of the land.

The family kept 11 acres of land and started over. Slowly, they built up a market garden and were able to keep their heads above water with the income. But without any cows, they had no fertilizer. While green manures are great fertility boosters, there's nothing like a little old-fashioned animal manure to keep a heavy feeding vegetable garden happy. They decided to buy a couple of pigs. They could feed them scraps from the garden, compost the manure, and have meat for winter.

Grace was excited about the prospect of a couple of pigs that she

could raise for her local 4-H club. Rebecca and Adam were excited that they would have fertilizer and bacon. This was a brilliant idea. Except....

They looked everywhere they could think of for a couple of pigs. Nothing fancy. No high-dollar genetics, just a couple of feeder pigs that didn't cost an arm and a leg. Even though they were willing to travel anywhere within a three-hour radius to buy the animals, they couldn't find any for sale. Frustration was setting in pretty heavy on one afternoon. They had made a drive out to the middle of nowhere hoping to score a couple of pigs, and were driving home with nothing.

"Maybe we should just buy a bunch of pigs and sell them ourselves." It was Grace from the backseat. Adam and Rebecca swear it clicked at the same time. They knew instantly that their little girl had a big idea.

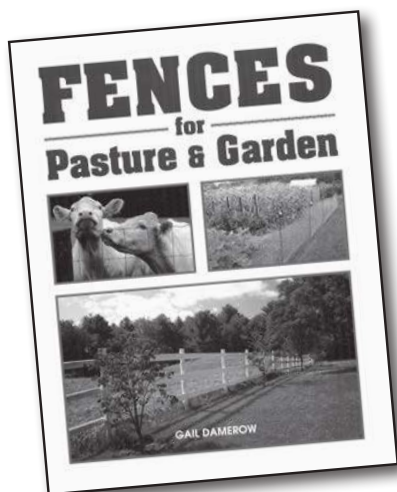
It happened quickly, the way things happen when you've made the correct choice on a dark path and are rewarded with light. By 2012, Crow Raven Farm had become the leading provider of feeder and butcher hogs in the area. It was the perfect transition from dairy farming for Adam. He took to it like a cheeseburger to bacon. The work was less physical, and the whole family could work together. Since Grace is homeschooled, Crow Raven Farm became her classroom.

Adam holds a degree in animal husbandry, and while he had put that knowledge to work in his dairy



Grace cleans her hog pens at a show.

## Goats & gardens don't always mix...



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business, he didn't know the first thing about raising hogs, so they learned together. "Grace's involvement in 4-H came in handy," says Adam. "We were trying to find the perfect breed that would thrive on our farm." While Grace showed her 4-H hogs, Adam would network with other families working on hog projects for 4-H. The McGraths took the advice of fair judges and participants, and now they breed and raise Hereford hogs exclusively.

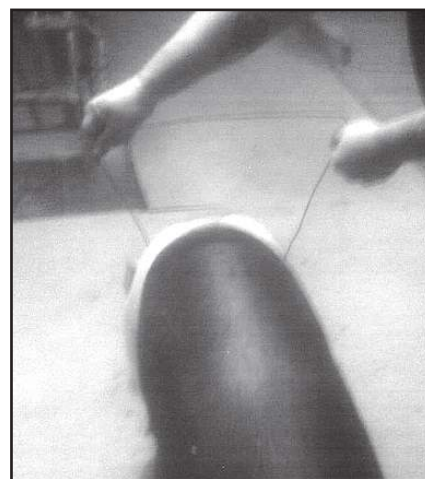
According to the American Livestock Breeds Conservancy, Hereford hogs, although unique to the United States, are on the decline here. This is probably due to their medium size. At maturity, the Hereford hog will weigh in at 250 lbs. However, this breed matures in a hurry. It only takes about six months for one of these animals to mature, and they do it on less feed than other breeds.

Named after its bovine counterpart, the Hereford hog is a striking animal with the same deep red-bronze markings as Hereford cattle. They are remarkably easy to handle. So much so that Grace, now 14, moves with ease through the pens, opening gates and sorting hogs.

Even though she is too young to be in direct contact with the hogs, Vera, a precocious four-year old, is eager to help. "She doesn't want to just stand here," explains Rebecca. "She knows she's part of the operation. She knows she has to help. It just comes natural to her." Vera enthusiastically helps clean pens and sweeps the walkway of the dairy barn that now houses hogs. Even at only four-years old, she takes great pride in doing her job correctly. The whole family does.

"When people buy their finished hogs from us, they're getting the best quality meat money can buy. We don't want our quality compromised during processing." The McGrath's work with two local meat processors to ensure customers get a quality finished product. "They both do an exceptional job," explains Adam. "We check up on them."

Consumers are understandably concerned that they have no way of



Measuring a hog with a hanger.

knowing that the meat they get from the processor came from the animal they bought on the hoof. Adam has devised a solution that works well. Because Herefords are naturally small and sleek, it's easy enough to measure your pork chops on the hoof. Adam uses a wire coat hanger (see photo) to measure the distance across the loin area before the hog is processed. "It's easier than trying to do it with a tape measure," he says. "Just measure at the widest point between the hanger ends."

After processing, he pulls out a pack of chops and places two of them together at the cut side. Then he measures at the same point on the reassembled chops as he did when the hog was alive. "At the outside most," he says, "your chops shouldn't be any more than one-and-a-half-inches smaller on the counter than they were on the hoof. If they are, you should start questioning your processor. The processors we work with have a policy in place and assurances that our customers are getting what they paid for."

The McGraths are none the worse for wear after trudging through hard times. They're excited about the Hereford breed, and are working hard to encourage homesteaders and other small farmers to consider raising them. If you'd like to learn more about the benefits of raising Hereford hogs on your homestead, you can contact Crow Haven Farm via their Facebook page or email at [crowraven.farm@facebook.com](mailto:crowraven.farm@facebook.com).

The sheep shed:

# Urban sheep rearing adventures

BY LINDEN STACIOKAS  
FAIRBANKS, ALASKA

I don't know if this is proof of my powers of persuasion or the patient resignation of my husband of 29 years, but when I suggested that our suburban lot could support a pair of miniature sheep, he agreed with barely a grimace. In short order we had Woolly and Bully, eight-week-old Babydoll Southdowns, grazing in the backyard. Since their arrival two years ago, I have found there are many things the books I read in advance of their purchase failed to mention.

1. I opted for sheep over goats because of the latter's reputation for mowing down every piece of vegetation in sight. I am here to testify that sheep are no laggards in the greenery destruction department. I thought I had sheep-proofed the garden and backyard. However, the first year turned out to be a race, where they would figure out a way to reach something green and I would then throw up a fence of some sort to protect the rest of that area. Who knew that sheep will gobble down garlic scapes, scallion tops, carrot and beet greens, dahlias and marigolds? Or that they will strip bark off trees, or leaves off thorned raspberries?

2. Male sheep are quiet but deadly. Bully rarely makes a sound, even when creeping up to head butt someone right behind the knees. You may at some point realize that the husband and the ram have been playing a head butting game, which is possibly why Bully was so deadly accurate.



*Above: The sheep wait hopefully for someone to open the back door, since the dog door has been blocked.*



3. If you have a large dog door, after they watch the Irish wolfhound go in and out of the house a few times, they will begin using the door themselves. You will come home from work to find the dog on your bed and the sheep on the floor next to the bed.

4. If you find them using the dog door hysterically amusing and don't block it off after the first home invasion, believing for some foolish reason that they won't do it again, they will come back in and bring a few of the chickens in with them. This time you will find one dog, two sheep and three Jersey Giant hens in front of the television, apparently waiting for you to turn it on.

5. A pregnant sheep is very much like a pregnant woman: tired, moody and hungry all the time. And they take a long time to stand up from a lying position.

6. The ewe will select one of the rainiest days of the year to deliver, and will not use the hut but the muddiest part of the yard as her birthing area.

7. The day she delivers, you will receive a panicked phone call from the husband (who did not grow up wanting an urban farm). "There is a baby, the mother has the placenta hanging out and you need to get home right now."

8. The straw from the bottom of their hut will smell and be a pain to rake up, but it will turn into the best compost you've ever had. However, if you don't shut the gate to the compost pile, the sheep will climb into the pile and kick much of it back out into the yard.

9. If they are wounded or the tail docking doesn't happen just right, flies will lay eggs in the dense curly wool. This will lead to vet visits, shots, and evening sessions of picking maggots out of your lamb's butt. This is a two-person job, one to hold the baby still and one to wash, pull out visible worms and spray Blu-Kote on the wound. At some point, the husband will say, "This was not exactly what I envisioned when I asked you to marry me."

10. They are impossibly cute. You will fall in love.

# A practical environmentalist

ROSE MARIE KERN  
ARIZONA ©2012

“What are you doing?” I asked my daughter. After living with me for 13 years, you’d think that she would automatically toss her aluminum soda can into the recycle bin. No, it was airborne and headed into the trash when the flash of sunlight on metal caught my eye.

Rolling her eyes she fished the can out and put it in the right place.

## The right place

Sometimes I catch myself thinking about how much has changed – not just technology or building developments, but mindsets. As a child I would not have thought about where I threw a can. As a child there were no soda cans, just bottles. Even then my parents did not purchase sodas for their kids; we drank water, milk or KoolAid. Hawaiian Punch was a treat served only on holidays.

In my parent’s youth everything was used, re-used and then torn apart and used some other way before it was ever thrown away. That was before advancements in technology turned us into a “throw away” society. Plastic was one of the biggest culprits. Suddenly you could make anything so cheaply that you didn’t have to bother to clean it up and use it again – just throw it away! Who cares – it’s only worth about a nickel and what’s a nickel?

About 20 years ago now it suddenly dawned on people here in the good ol’ USA that just maybe all that waste was bad for us. By “us” I mean not just the country as a whole, but for towns and communities that don’t have any place to bury their trash, some places have to pay to have their garbage shipped to other places with smaller populations and more land.

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discovered that splitting the atom may have created huge new energy resources, but the process creates more garbage of a kind that can make people sick. Then there are the fools who want to live in the southwestern desert, but believe in their souls that they have the right to use as much water as they want so they can have a lush green yard.

Technology has spoiled us on a number of levels. You go to a grocery

store these days and you can get any kind of fruit or vegetable at any time of year. You want fresh tomatoes in January, corn on the cob in April, young tender zucchini anytime... why not? So what if it takes a jumbo jet out of Hawaii plus a huge tractor trailer driving 1,072 miles to bring you fresh pineapple in Amarillo—it's only a couple bucks at the store. Of course, from picking to purchase it costs the world 9,504 gallons of jet fuel, and at least 180 gallons of diesel. That's a lot of stinky stuff to dump into the air.

Like a lot of people, I have absorbed all the statistics and come to the realization that we as individuals really do need to change how we approach everything from what food gathering options we have to how we dispose of waste. What bugs me is that the minute you mention that you save aluminum cans or recycle computer paper, people automatically equate you with the wild-eyed frenetic extremists who sit in trees and scream obscenities at passing loggers.

Applause to the radicals who bring attention to a problem—it is not how I prefer to live. They may draw attention to a situation, but it is the average citizen living in a community, who will slowly and steadily change it. People need to look around and see what they personally can do in daily life to make a difference.

I am an inhabitant of the high desert regions. My home has just under an acre inside a small town. The community is large enough to have

***Family album:***



Otis in Wisconsin, boils beets outdoors to keep the "red mess" out of the house during canning season.

choices of waste disposal companies and I prefer to use one that recycles. Even so, before I throw something away I consider whether or not it can be used in some other fashion. I do eat out on occasion and I use the containers they provide for other things. Did you know that the small containers Kentucky Fried Chicken uses for single servings of coleslaw make great butter dishes?

In my handbag you can usually find a small plastic food storage box—the kind you can re-use. If I know the restaurant's leftover containers are Styrofoam, I pull my box out and use it instead. The water in my community is tasty. I run it through a filter and drink it, rather than buying a lot of plastic water bottles. That does not mean I shun any use of the plastic ones, there are times when that is preferable to other options.

My husband and I prefer to buy locally, but if price differences are dramatically different we don't have any prejudices about bopping over to Wal-Mart. My own organic garden and the local farmers market provide most of my vegetables, and I like to can and dehydrate my produce. The garden is on a drip system and

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I employ heavy mulching, so my water usage is much smaller than my neighbor with the lawn.

The most amazingly short-sighted waste is in the area of clothing. People keep closets full of things they don't wear, or if they've worn it once or torn it slightly, they may throw it away! If something is torn, I pull out needle and thread and stitch it up—then wear it again! Twice a year I take inventory of what I have. If I haven't worn it because I got too fat or don't like it anymore, I give it to charity. You can get some really great clothes at thrift stores—from those people who wore it once.

I own a total of six pairs of boots/shoes. Sass shoes has a very practical black leather shoe I can wear all day long in the office and be comfortable. They are expensive, but great. Once a year I buy a new pair. The old pair becomes my gardening shoes. The others are a seldom-used pair of brown loafers, a pair of black pumps going on nine years old, a set of tennis shoes, and some winter boots. There is a pair of cowboy boots somewhere in the back of the closet that I haven't seen since 2003.

Creating a healthier environment starts in the mind. Look around and see what you can do in your own home to make a difference. Start small, but do it repeatedly until it becomes a habit. Years later my daughter and I were at a friend's house when her boyfriend chucked an aluminum can into the trash. We both flinched.

**Bakery plastic boxes:** If someone gets croissants or muffins from most grocery store bakeries, they come in clear plastic boxes. Use these under flower pots, or use as a soap mold. They can contain items you intend to giftwrap, and they're stackable.

**Office shredder:** Most paper and ink is non-toxic. If you have a large compost bin you can take the confetti made by an office shredder and toss it with other materials. This is especially good in summer when most of the material is green and needs balancing.

**Office coffeepot:** Place a large plastic container—like one of the ones pretzels come in from Costco or Sam's—next to the office coffeepot with the words "Coffee Grounds" written on the side. (*Ed. note: Or simply reuse an empty coffee container. They are made of waterproof plastic, have tight-fitting lids, and are recyclable. Those are much easier to come by in the COUNTRYSIDE office.*) In short order everyone will be throwing the grounds into the convenient jar. Take them home and either bury around the plants or toss in the compost heap for later. The filters are compostable too, but I usually soak the grounds off of them if I want to add the grounds directly to my roses.

**Pretzel containers:** Speaking of those big clear containers, they are large enough for a lot of things:

- Great place to store all sizes of screwdrivers, electrical outlets and switches, and power cords.
- Cut the thing in two. Use the bottom half under flower pots, set the top half over seedlings in the garden to protect them from bugs and high winds.
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1 mil poly bags size 12 x 18: Get a box of 1,000 for \$40. I got one three years ago and I am barely halfway through. ([www.uline.com](http://www.uline.com)) This size is great for:

- Storing bread after baking
- Setting next to the chopping board and collecting veggie bits and pieces (either use them for making veggie soup stock or just tossing into compost heap later)
- Picking up "dog bombs"
- Great for displaying T-shirts or other items for craft sales.

**Freezer:** The freezer uses less energy if it is full. If it has gaps, fill plastic jugs with water and set them inside until you order the next side of beef.

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### The hapless homesteader:

## Once a Marine

By GEORGE SIMS

I am a Marine. I know there are a lot of ex-Army, ex-Navy, ex-Air Force guys out there, but we were taught that there is no such thing as an “ex-Marine.” Once a Marine, always a Marine. Tough guys. Check out this horseshoe-shaped scar on the right side of my cranium. I got that in hand-to-hand fighting in 1970. Really. I was leading a squad of eight guys in a night assault against a hill that was held by a full company of the foe—almost 200 men. In the violent struggle, my scalp was laid open by a vicious blow from an enemy’s rifle barrel. My buddies managed to evacuate me from the battlefield, and Navy corpsmen sutured the gash with a dozen stitches. I never even whimpered. And this was in *California*, before I was ever sent overseas.

Marines never do things the easy way—always get by with little or no equipment—never say they’re sorry—never show emotion. I, therefore, had absolutely no problem in driving my oldest daughter 250 miles to begin college last weekend. My wife is not a Marine.

We removed the back seat from the mini-van, leaving enough room for the several dozen boxes of clothing, the refrigerator, the teddy bears, the makeup, the formal dresses. I remembered that I had travelled halfway around the world in 1970, lived for a full year, and had been allowed to take only one sea bag and a small valise. My daughter is not a Marine.

The campus, snug on a hilltop in



Jenny and George

the White River Valley of northeastern Arkansas, was even lovelier than we’d remembered. Beginning with our arrival early Friday morning, everything was first-class, and the college administration, students, faculty, and staff spared no expense or effort to make the transition to college life a pleasant experience. Upperclassmen appeared from nowhere and quickly made short work of unloading the van and transporting all the paraphernalia into the residence hall, where Jenny’s 18-year accumulation soon filled the small room. Soon, her roommate appeared. Katrina’s father and stepmother unloaded an equal amount of material from their vehicle, followed shortly by her mother and stepfather, who’d brought yet a third carload up from Lubbock, Texas. Look at all this stuff. Katrina is obviously not a Marine, either.

I stepped outside and watched a couple dozen of the older students as they helped the newcomers to settle in. An industrial-sized sound system had been set up and the kids began to dance the *macarena*. Having learned all the moves from a recent *Newsweek* article (and having secretly practiced a time or two before the mirror), I moved closer, preparing to jump in, until a stern look from Jenny stopped me in my tracks. She led me back inside and installed me in a corner of the room and admonished me to behave and not to embarrass her.

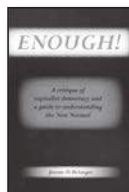
I watched Jenny and Katrina's enthusiasm while they and the politely-tolerated parental assistants began stowing a full lifetime's accretion of worldly goods; and a strange and somewhat cold, hollow sensation grew in the pit of my stomach and I seemed to be having trouble seeing clearly in the crowded room. "What's the matter, Daddy? Your eyes look kinda red and watery." "Allergy. Must be this mountain air."

Throughout the day-and-a-half of orientation, I had to keep a watchful eye on Trish, who was apt to burst into a most undignified snuffling and eye-rubbing at the least provocation. She never would have made it through the first week of boot camp.

On Saturday morning, the students participated in a Matriculation Ceremony, which was one of the most unique rites I've ever witnessed. The college operates under an Honor Code, which holds each student to his personal oath to behave with honor and integrity. When examinations are given, the instructor leaves the room, and every student is honor-bound to abstain from fraud or cheating. During the Matriculation Ceremony, each freshman walks to the front of the chapel and formally signs his name to a pledge to uphold the Honor Code, promising, among other things: To tell the truth. To maintain the sanctity of other's property. To abstain from all forms of cheating and plagiarism. To uphold the in-

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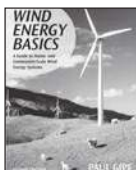
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tegrity of the degrees granted by the college by reporting any cheating or plagiarism violations.

What more can be desired in a person above honor, truth, and integrity? And how rare it has become to find an institution which places such a high and such a public value upon those virtues, and which pays more than lip service to their indispensability in a person's character. These are the qualities I have always expected to find in my children, and I have not been disappointed.

We parents assembled in the beautiful chapel about half-an-hour before the scheduled start of the ceremony. The organist approached the magnificent pipe organ, with its 30-foot tower of pipes, and began to play. As he concluded, a total silence filled the room, followed by an eerie sound from somewhere outside the building. The noise grew louder, and finally became recognizable as the otherworldly music of bagpipes. The pipers entered the church, and advanced down the aisle, their music summoning the ghosts of every ancestor who ever trod the soil of the Home Islands. Close behind, the president of the college marched, accompanied by the speakers of the day, all clad in the splendor of their academic gowns and stoles.

The students then entered, the pipers' music still heralding the procession, and took their places. They were followed by the remainder of the distinguished faculty and staff, robed in the fantastic medieval garb of academia. The spectators were hushed and awed as their sons and daughters marched down the aisle to shake the presidential hand and to publicly pledge their honor before God and the world. The hair rose on the back of my neck as Trish resumed her intermittent snuffling. She looked over at me. "Are you all right? Your eyes look funny." "Darn allergy."

After the speeches, the president politely but firmly reminded the parents that they would be *persona non grata* on campus after the ceremony and the brief reception, but would be welcomed with open arms on

Parents' Day in October. The business of education was at hand, and the administrators realized that long goodbyes can be hard on non-Marines.

We walked back to the van, where Jenny retrieved one last ancient cassette from the tape box. I stood aside while Jenny and Trish said their farewells in the parking lot. I was gratified to see that Trish finally had that infernal snuffling under control, and the two women laughed and chattered for a minute before Trish climbed behind the steering wheel.

Jenny walked over to me. No need to drag this out, I reminded myself as she gave me a big hug that lasted an 18-year lifetime. "Well, this is what you've worked for. Is this where you want to be?" "Yes. I love you, Daddy." "I love you too, Jen," I mumbled into her neck. "You're not *crying*, are you?" "Of course not. I've got to get out of this suit and tie. It's so hot out here that my eyeballs are just sweating a little. See you in October."

#### (Six weeks later):

The leaves are red and golden in northeastern Arkansas in October, and frost covered the car when I walked out of the motel room at daybreak on Saturday morning. I felt like Dorothy in Oz. I sure wasn't in Louisiana anymore. Autumn in the hills makes me regret that I am not



a north Arkansan, or a Virginian, or a North Carolinian.

This was our first trip back to Batesville since dropping Jenny off at college in August. Thankfully, my summertime "allergy" seemed to have cleared up, and I only had one attack during the entire weekend. We'd arrived on Friday evening, waiting for Jenny in her permanently-unlocked dorm room as she wrapped up her last class, which ended at five. Rather than stay in the somewhat claustrophobic room, I wandered outside to the quadrangle, watching her as she approached. She looks good.

We went through the obligatory motions that night, taking Jenny and Cadyn out for pizza, then sitting through a curious college entertainment in the student union. Student entertainments, I suppose, often appear curious to deaf, middle-aged men, but everyone present seemed to be enjoying themselves, and I managed to stay awake in a rocking chair in the corner.

Ellie was overjoyed to be able to stay in the dormitory for the weekend, and was prepared to do her best to pass for a co-ed. At 5' 10", she probably would have been able to accomplish the masquerade, had not Jenny persisted in introducing her to one and all, "This is my sister, Ellie. She's 14!" Ellie's pout grew more pronounced as the weekend progressed.

At 8:00 on Saturday morning, the college sponsored a 5-kilometer race. (That's about 3.1 miles, for those of you who are metrically challenged.) Since Ellie is a neophyte member of the BHS Cross-Country Team, I knew that she would be thrilled to have the opportunity to participate, and this would be a wonderful opportunity for some father-daughter memories to be forged. To my surprise, she opted to sleep until noon, leaving her aged dad to run the race alone.

Some 16 years ago, while yet in my 20s, I spent a year as an obsessed runner, and had established a "personal best" time of under six minutes per mile for the 5K dis-

tance. I haven't run in years, but had convinced myself that "Once a Marine...." Running is mostly mental, and I anticipated a pleasant jog, hoping to break nine minutes per mile, with some effort.

I approached the starting line, looking at the expensive, high-tech footgear on the competitors. I suddenly became painfully aware of my no-name sneakers, with holes in each toe, in which I had mowed the lawn for the past three years. Instead of the light, breezy running outfits worn by the other racers, I was wearing a pair of cotton drawstring shorts that I normally sleep in. No longer did I race shirtless, rather covering my "spare tire" with an ancient t-shirt, size extra large.

The morning was as beautiful as a morning can be. The temperature hovered around 40, and the pure, clear air was the Fountain of Youth. The other runners were greyhounds, whippets, Thoroughbreds. As the gun sounded, I found myself swept along, in my pajamas and holey sneaks, side-by-side with a beautiful blonde gazelle clad in form-fitting spandex tights. We ran at the same pace for about a quarter-mile, as I prayed that she would quickly pull away so that I could quit trying to suck in my jiggling gut as I ran. She soon granted my wish and disappeared into the distance.

Batesville is a hilly town, but the first mile was magic. I felt great as we ran through lovely autumn neighborhoods of brilliant gold and red. The greyhounds and whippets were far to the front, but I was still within sight of a thoroughbred or two. At the first mile, I couldn't believe my ears when the timer called out "6:51." "Impossible. I'm not capable of lugging this 200-pound carcass at a 6:51 pace."

The tempo moderated slightly during the second mile, but I reached the second milepost with a still-respectable speed of less than 7.5 minutes a mile. *Fantastic*. Thoughts race wildly through the mind of a runner, and I suddenly realized that my unimagined speed was largely due to the fact that the first two miles

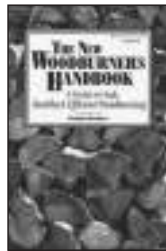
of the course were essentially *downhill*. Since the starting line and the finish line were located at the exact same point, I quickly realized that the final 1.1 miles would be somewhat more challenging. To get an idea of just how challenging, please assemble in the fountain area of the Bastrop City Hall, facing to the north, toward the three-storied Seligman's department store. Jog casually toward the wall. When you reach it, do not stop, but proceed to run directly up the wall, cursing all things hilly and Arkansan as you try to ignore your screaming lungs and legs, and the common-sense thoughts which advise you to stop and walk. I maintained a semblance of running, although the thoroughbreds, along with some of the larger competitors and several small children, soon were out-of-sight in the distance. I did manage to accomplish my original goal. Barely.

Jenny's schedule was full on Saturday. She was selected to give morning

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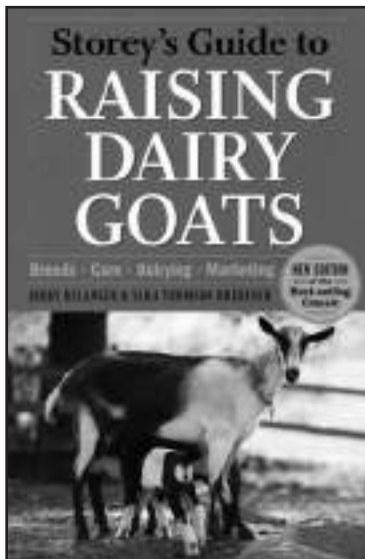
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tours to prospective students, and was called to an afternoon rehearsal of a theater production in which she is involved. My wife was, I think, quite disappointed that Jen would be unavailable for most of the day, although I felt strangely reassured by her activities. I walked around the campus, watched a soccer game with Ellie, and later found one bench after another from which to watch the students go about their interrupted routines on this "Parents' Weekend."

Comfortably benched, I pored over the college newspaper, the *Highlander*, and was delighted to read the editorial comments of senior editor Ron Hanks, who said, "It's true, once a Marine, always a Marine, (but) it pays to know the difference between who truly is a Marine and who just went through boot camp." Two obviously great intellects running on parallel paths, eh?

Marines are taught to fully assess a situation, then proceed, using whatever resources are at hand. Her mother and I assessed this situation somewhat dif-

ferently, I think. Although we didn't discuss it, her mother believes that we are "lending" Jenny to college, and that her "real place" is still at home. I, on the other hand, am greatly, and perhaps strangely, comforted to realize that her home is now Lyon College. She is grown and gone, leading her own life, and any time we spend with her from this day forward will be temporary, whether for an hour, a day, or a summer. This is the way it should be.

I was, for the most part, even able to withhold unsolicited advice. She knows that her Spanish mid-term grade stinks, but that's her problem, not mine. If she were to decide to get a tattoo or shave her head (heaven forbid!), there's really not much I can do to change her mind. She has her own choices to make, and her own role to play, and nobody can, or should, do that for her. As parents, we are now relegated to an essentially supernumerary role.

I think Jenny would be too polite to broach the subject, but Don Williams surely expressed the unspoken sentiments of many a newly-fledged young adult when he sang,

*I don't want to hear another word,  
Don't need your well-thought-out  
advice.*

*Though I thank you all for being kind,  
I can make mistakes myself just fine.*

And that, again, is the way it should be. It's nice to be able to sit on the bench and watch your kids live and grow, knowing you did a good job.

By the way, Jenny says "hey" to everybody, and she asks how "your momma'n'em's doing." She'll see you at Thanksgiving. Maybe. (She was kidding about the tattoo, wasn't she?!)

*Well, Jenny graduated from Lyon College in 2000, married a month later, and is now living in the Midwest with her husband and two super kids. George Sims can be contacted, as always, at Route 2, Box 237-3, Mansfield, Missouri 65704-9564, or at [bonneideefarm@hotmail.com](mailto:bonneideefarm@hotmail.com).*

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# Poor Will's COUNTRYSIDE Almanack for Deep Winter & Late Winter 2013

BY W. L. FELKER

I sing the cycle of my country's year,  
I sing the tillage, and the reaping sing  
— Vita Sackville-West

## The Ephemeris for January The Phases of the Crow Gathering Moon and the Spinning Crane-fly Moon

Resident crows continue to congregate throughout the deepest part of winter, joined as January ends, by migrant crows returning from the South. Crane-flies, insects that look a little like mosquitoes and that spin in the sun on the coldest afternoons, are also common throughout much of the country now.

### January

4: The Crow Gathering Moon enters its final quarter at 10:58 p.m.

11: The Spinning Crane-fly Moon is new at 2:44 p.m.

18: The moon enters its second quarter at 6:45 p.m.

26: The moon is full at 11:38 p.m.

### The Sun's Progress

Solar perigee (the Earth's position closest to the sun) occurs on January 2 at 12:00 a.m. The sun enters its sign of Aquarius on the 20<sup>th</sup>, ushering in the last subseason of winter (aptly called "Late Winter"), at which point the day's length is approaching a spring-like 10 hours all along the 40<sup>th</sup> Parallel! And on the 31<sup>st</sup> of January, the sun reaches one-fourth of its way to spring equinox.

### The Planets of January

Venus is the morning star in Sagittarius throughout January. Jupiter begins 2013 as the evening star in Taurus, keeping that role until the first week of June. Find Mars in the early night sky in Capricorn and then in Aquarius later this month. Saturn rides across the southern sky in Libra after midnight, reaching almost half-way across the horizon by dawn.

### The Stars

If you look due south along the horizon when you get up for chores or exercise, the brightest star you see is Spica in the constellation of Virgo. To the southeast, near the tree line, you should be able to make out a box-like formation: that's Libra. Then near Libra in the southeast is lanky Scorpio. If you look west from Spica and up into the heavens, you should be able to see Regulus of the constellation Leo, then Cancer, like a man walking into the western horizon, then right at the place where the sky meets the land, Castor and Pollux of Gemini.

### The Shooting Stars

The Quadrantids are the meteors of January. Look for them in the northeast after midnight on the 1<sup>st</sup> through the 5<sup>th</sup>. On the 3<sup>rd</sup> and 4<sup>th</sup>, you might see up to 40 shooting stars in an hour.

### A January Calendar of Holidays and Special Occasions for Gardeners, Ranchers & Homesteaders

13<sup>th</sup>: Mardi Gras season begins around this time, lasting until the big celebration on February 12. Plan to market kids and lambs for barbeques throughout the month. Or be the one in your area to sell the popular Mardi Gras beads!

24<sup>th</sup>: Muhammad's Birthday (Mawlid Al-Nabi): Sunni Muslims celebrate Muhammad's birthday today.

29<sup>th</sup>: Muhammad's Birthday (Mawlid Al-Nabi): Shia Muslims celebrate Muhammad's birthday on this date. For both of these holidays,

you might expect an increase in the demand for halal meat.

### Meteorology

The season of Deep Winter begins January 1. This season has six to seven significant cold waves, and it lasts from New Year's Day through around the 25<sup>th</sup> of January. Average temperatures in this season are the lowest of the year everywhere in North America. If strong storms occur this month, weather patterns suggest that they will happen during the following periods: January 1-2, 8-12, and 19-24 (the transition time to Late Winter). New moon on January 11 and full moon on January 26 are likely to intensify the weather systems due around those dates. The coldest January days usually fall between the 7<sup>th</sup> and the 10<sup>th</sup>, as well as between the 15<sup>th</sup> and the 18<sup>th</sup>.

### Key to the Nation's Weather

The typical January temperature at average elevations along the 40<sup>th</sup> Parallel, the average of the high of 38 and the low of 22, is 30 degrees. Using the following chart based on weather statistics from around the country, one can calculate approximate temperatures in locations close to the cities listed. For example, with the average of the 40<sup>th</sup> Parallel as the base of 30, you can estimate normal temperatures in Minneapolis by subtracting 18 degrees from 30. Or add 15 degrees to find out the likely conditions in Atlanta during the month.

Minneapolis, MN:	-18
Green Bay, WI:	-13
Burlington, VT:	-12
Des Moines, IA:	-9
Chicago, IL:	-4
Average along the 40 <sup>th</sup> parallel:	30
St. Louis, MO:	+2
Louisville, KY:	+6
Washington, DC:	+7
Atlanta, GA:	+15
New Orleans, LA:	+25
Miami, FL:	+35

**Peak Activity Times for Livestock,  
Fish, Game and Dieters**  
Fish, game, livestock and people

tend to feed more and are more active as the barometer is falling one to three days before the weather systems that arrive near January 1, 5, 10, 15, 19, 25, 31. Fishing and hunting may be most rewarding and dieting could be most frustrating near these dates at midday when the moon is new, in the afternoon and evening when the moon is in its first quarter, at night when the moon is full and in its third quarter, in the morning when the moon is in its fourth quarter.

**The Ephemeris for February  
The Phases of the  
Spinning Crane-fly Moon  
and the Lenten Rose Moon**

One of the first flowers to bloom, the Lenten rose, or hellebore, opens as aconites and snowdrops blossom in protected areas. Maple sap runs when hellebores bloom, and most of the nation's lambs and kids are born when those flowers appear.

**3<sup>rd</sup>:** The Spinning Crane-fly Moon enters its last phase at 8:56 a.m.

**10<sup>th</sup>:** The Lenten Rose Moon is new at 2:20 a.m.

**17<sup>th</sup>:** The moon enters its second quarter at 3:31 p.m.

**25<sup>th</sup>:** The moon is full at 3:26 p.m.

**The Sun's Progress**

On February 18, Cross-Quarter Day, the sun reaches a declination of 11 degrees 53 minutes, its halfway point to equinox. It enters the Early Spring sign of Pisces at the same time.

**The Planets of February**

Moving into Capricorn, Venus remains the morning star until the middle of the month, when it blends with the sunrise and disappears from view; it reappears as the evening star at the end of the first week in May. Mars is lost in the sunset during the second week of February, remaining out of sight until it comes back before dawn in June. Jupiter is still the evening star this month, and Saturn keeps its position in Libra, leading Sagittarius through the dark early mornings.

**The Stars**

By midnight during February's first week, giant Orion begins to move west from its dominating January position in the center of the southern sky. The star grouping of Canis Major takes its place along the horizon, with Sirius, the Dog Star, the brightest light in the whole night sky. Sirius, along with Procyon (the large star to the upper left of Sirius) and Betelgeuse (the reddish left shoulder of Orion) form what appears from our position on earth to be an equilateral triangle.

**A February Calendar of  
Holidays and Special Occasions  
for Gardeners, Ranchers &  
Homesteaders**

**10<sup>th</sup>:** *Chinese New Year* (The Year of the Snake): The Chinese market is often strong throughout the winter, favoring goats and sheep in the 60 to 80-pound live-weight range.

**12<sup>th</sup>:** *Mardi Gras*: This is the last day of the month-long pre-Lenten season that closes with celebrations before Ash Wednesday and the start of the Lenten fast. The beginning of Lent announces Roman Easter (and the Easter market for lambs and kids) at the end of March and Orthodox Easter at the beginning of May.

**27<sup>th</sup>:** *Dominican Republic Independence Day*: Areas that have a sizeable population of residents from the Dominican Republic may show an increase in sales of new kids and lambs that weigh between 20 to 35 pounds.

**Meteorology**

Late Winter contains five to six cold fronts and lasts from January 26 through February 18, at which time cold waves typically become weaker and warm fronts stronger. A relatively long season of eight to 10 major fronts, Early Spring lasts from mid-February through the end of March. If strong storms occur this month, they will be most likely to strike on or around February 2-4, 6-9, 14-18 and 24-25. New moon on February 10 and full moon on February 25 are likely to increase the intensity

of the weather systems that typically arrive near those dates.

**Key to the Nation's Weather**

The typical February temperature at average elevations along the 40th Parallel, the average of the high of 40 and the low of 21, is 31 degrees. Using the following chart based on weather statistics from around the country, one can calculate the approximate temperatures in other locations close to the cities listed. For example, starting from the base of 31, you can estimate normal temperatures in Burlington by subtracting 13 degrees from the base average. Or add 8 degrees to find out the likely conditions in Louisville during the month.

Minneapolis, MN:	-15
Burlington, VT:	-13
Des Moines, IA:	-7
Chicago, IL:	-3
Boston, MA:	-1
Average along the 40th parallel:	31
St. Louis, MO:	+6
Louisville, KY:	+8
Washington, DC:	+9
Atlanta, GA:	+18
New Orleans, LA:	+28
Miami, FL:	+39

**Peak Activity Times for  
Livestock, Fish, Game and Dieters**

Fish, game, livestock and people tend to feed more and are more active as the barometer is falling one to three days before the weather systems that arrive near February 3, 6, 11, 15, 20, 24.

**The Almanack Daybook**

When Christmas is ended, bid feasting adieu,  
go play the good husband, the stock to renew.  
Be mindful of rearing in hope of a gain,  
dame profit shall give thee reward for thy pain.

—Thomas Tusser, 16<sup>th</sup> Century

Match this daybook with notes about events you observe in your own habitat. Comparing the items listed here with similar occurrences or practices where you live, you should be able to fine tune your sense of real time, add things of interest and

importance to you, and create your own daybook.

## January

**1:** The New Year's front is usually one of the most severe systems so far in the winter, and it is preceded by sleet or snow as far south as northern Florida. After its passage, temperatures are typically quite cold. A secondary disturbance often causes additional precipitation on the 2<sup>nd</sup> and 3<sup>rd</sup>.

**2:** Consider forage testing soon if you suspect that quality is declining. Increase grain to feeder stock in order to have them at desirable market weight in Late Winter and Early Spring. Many people believe that feeding energy foods in the evening produces the best results.

**3:** The best lunar times to work with your livestock during January will be around the time the moon enters its second phase (tomorrow) and its fourth phase (January 18). According to a number of studies, the moon exerts less influence on ocean tides and on human and animal behavior during these periods between new and full moon.

**4:** As the year's second major front approaches, milder temperatures and precipitation are likely; thunderstorms are not uncommon in the South. After the January 5 high passes through, however, the cold returns with a vengeance, and the 8<sup>th</sup> and 9<sup>th</sup> are associated with some of the most chilling weather so far in the winter.

**5:** Do your pruning and take out suckers, as well as dead and crossing branches, as the moon wanes. Don't prune what will bloom before June. Wait for July or August for the maples.

**6:** In the greenhouse, the Season of Jade Tree Bloom is over as Camellia Season flowers in the Deep South and Black Bear Hibernation Season ends in southern forests. Almost all of early winter's honeysuckle berries have been eaten by birds or have fallen in the wind by now, and foliage of Japanese knotweed and oakleaf hydrangea is finally ceding to the cold.



**7:** Sparrows, stimulated by the lengthening days, begin chattering and courting near dawn. Foxes and coyotes look for mates as the days lengthen. Owls are establishing their territories and nesting. Another sign of spring: pines often begin pollination near this date.

**8:** Osage fruits are becoming squashy — a sign that Late Winter is only two weeks away. And another gauge of the season: Almost all the goldenrod and aster seeds are gone.

**9:** Under lights, sow flats of bedding plants as the moon waxes during the second and third week of this January. Flowers such as salvia, coleus, carnations, petunias, geraniums, snapdragons, and delphinium can be started now. Seed cold-weather broccoli, kale, collards, cabbage and celery for setting out in eight to twelve weeks.

**10:** The period between January 8 and 12 is one of the main storm windows of the year, and new moon on January 11 is expected to increase the odds for bad weather. Not only are blizzards likely to occur at this time, but also below-zero morning lows are most likely to freeze pipes and car batteries.

**11:** Today is new moon day, the first new moon of 2013 and a good time to renew your New Year's resolutions. Follow the progress of your decisions as the moon revolves through its phases. If you break your promises under this moon, try again under the next moon.

**12:** Throughout the nation, florists and grocery stores are introducing flowering daffodils and tulips, either potted or as cut flowers. Next year, they could be selling the bulbs that *you* started in the fall indoors.

**13:** Between the middle of January through the middle of May, spring

moves from New Orleans at a rate of about six miles per day or one degree every four days. The seasons are variable and unpredictable, but those average rates of progress hold. Whatever is lost with one cold wave is gained in a later thaw.

**14:** The day prior to the mid-January cold front is very likely to bring clouds and precipitation. After its passage, this weather system typically initiates a two-week period during which average temperatures are the lowest of the year.

**15:** Striped bass are starting to migrate up the Mississippi River in the Deep South.

**16:** Even in an average year, daffodil and tulip foliage emerges throughout the South. Garlic planted in late November has pushed out of the ground. The first rhubarb leaves are unfolding. The Algerian iris will soon be blossoming in Virginia. Aconites and snowdrops begin to bloom in the Carolinas.

**17:** Opossums and raccoons become more active as Deep Winter wanes, and they appear at night along the back roads. Once you sight these small mammals, then you know for sure January thaw is near and that the next phase of the year is on the way.

**18:** Skunk cabbage is up in the swamps, blackened by the cold but still strong. Watercress holds in the streams. Where the ground is not frozen, new mint grows under the protection of a southern hedge or wall. In the pastures, basal leaves of thistles and mullein are deep green beneath the snow.

**19:** Although the United States lies in the middle of its most frigid time of the entire year, the possibility of mild weather is enhanced by the incursion of powerful southerly winds from the Gulf of Mexico. The resulting turbulence creates the "January Thaw," a brief space during which much milder temperatures and an increased likelihood of blizzards, thunderstorms, tornados and flooding occurs.

**20:** The sun moves into Aquarius as crows start migration. In the South, perennials are coming up; if you see

them in the northern states, however, cover them quickly with straw so they will make it through the cold days ahead.

**21:** Get your pans or bottles ready for hand-feeding kids and lambs. But be sure to heat-treat the colostrum or milk before you use it. And be ready for kidding and lambing with heat lamps, blankets, disbudding boxes, nipple waterers, iodine or other disinfectant to treat the naval cord.

**22:** Now is the time to clean out your bluebird nesting boxes: Bluebirds are on the wing.

**23:** By this time of year, the first dandelions could be flowering, and snow crocus and henbit could be budding in the country's midsection. Sometimes moss is growing on logs, and pussy willows are popping from their hulls. Sometimes tulip and grape hyacinth leaves are pushing out of the ground. Sometimes day lily foliage is up three inches, daffodil spears four to eight inches.

**24:** When the afternoons are sunny, flies hatch to warm themselves on the south side of your house, and the pale Asian ladybeetles crawl out from hibernation in search of early prey, their soft presence on the delicate scales of time tipping the balance to spring.

**25:** Expect sap to run in the maples throughout the South as the traditional January Thaw moves across the nation and the moon waxes during the fourth week of the month.

**26:** The cold front that follows the January Thaw makes the 25<sup>th</sup> and 26<sup>th</sup> some of the month's chillier days, and full moon on the 26<sup>th</sup> is likely to increase the likelihood of unsettled conditions. Secondary frontal conditions, sometimes carrying moist Gulf air, can set off powerful blizzards around the 27<sup>th</sup>. No matter the weather, cardinals ordinarily begin their mating songs half an hour before sunrise on this date.

**27:** January 27 is a pivotal statistical date in the fortunes of winter. Throughout the country, average temperatures, which had remained stable from the middle of January, climb one degree. That rise may not be obvious in any particular year,

but it does represent the cumulative wisdom of all the years on record, revealing the inevitable turn of the earth toward June.

**28:** Late Winter has arrived across North America. This is a period that still may bring terrible cold and storms but which, overall, paves the way for the more benign weather of Early Spring.

**29:** Earliest robins and bluebirds arrive in the lower Midwest. Canada geese reach their peak in Louisiana rice fields.

**30:** As Christian Lent approaches, indoor farmers' markets often display hot-cross buns and other tempting pastries. Consider expanding your baking and marketing approaches as the pre-lenten season ends.

**31:** As the final front of January weakens, it often brings the brief "Groundhog Day Thaw," a warm spell often potent enough to bring skunk cabbage into bloom as far north as the Great Lakes. And the weakening moon should help make the Groundhog Day Thaw a significant one this year.

## February

**1:** The moon is especially favorable for the seeding of bedding plants and the taking of cuttings from mother plants during the first week of the month and after new moon (which occurs on the 10<sup>th</sup>). Frost seed pastures and seed the lawn along and above the 40<sup>th</sup> Parallel. The dark moon and the mild weather could be ideal for butchering across the South, but don't let the first bad cold front of February freeze your meat.

**2:** Plant oats and barley as conditions permit in the South. Spread lime, phosphate and potash as needed. Although the Groundhog Day Thaw could bring very warm temperatures, don't spray your fruit trees for a couple more weeks: February 3-5 often brings a cruel cold snap that could damage sprayed buds and branches.

**3:** February 3 consistently pushes a strong high-pressure ridge across the Mississippi, sharply raising the possibility of below-zero tem-

peratures, and initiating a weeklong period of increased possibilities for bitter daytime highs. Precipitation is to be expected before the arrival of this front, and February 3 is one of the February days most likely to bring dangerous storms to the Plains and tornadoes to the South.

**4:** Under the dark moon, treat ash, bittersweet, fir, elm, flowering fruit trees, hawthorn, juniper, lilac, linden, maple, oak, pine, poplar, spruce, sweet gum, tulip tree, and willow for scales and mites. Spray trees with dormant oil when temperatures rise into the upper 30s or 40s. The best chances of experiencing those temperatures in northern states will occur between February 15<sup>th</sup> and 23<sup>rd</sup>.

**5:** In all but the northernmost states, tap maple trees throughout the month. Expect sap flow to slow down after Snowdrop Winter, which typically occurs between the 24<sup>th</sup> and the 27<sup>th</sup>.

**6:** The second barometric high of February arrives near the 6<sup>th</sup> and generally reinforces the cold.

**7:** In northern Mexico, monarch butterflies are moving toward the Texas border. They will reach the Gulf coast in small groups during mid to late March, and their offspring will find the Midwest in middle summer.

**8:** Skunks can be out in gentle, wet nights. Sparrows are mating in the trees, and the great morning chorus that lasts deep into summer is well underway, the grackles whistling and chattering, the crows and cardinals and doves joining in. Male blue jays are bobbing up and down, talking to their mates. Doves begin to call after sunrise, not every morning, but once or twice a week until the first days of Early Spring, after which they sing through the end of Late Summer.

**9:** Flies and bees come looking for snowdrops when temperatures warm to 50°F. Deer gather together throughout the month to feed in herds. Turkeys continue flocking now, but they will disband and scatter into smaller family groups by April. Groundhogs come out of hibernation. You may see them eating the new grass by the side

of the road. Opossums, skunks, beavers and raccoons seek their mates.

**10:** The Lenten Rose Moon is new today, just three days before the beginning of Christian Lent. Work throughout the coming six weeks to sell your kids and lambs to the Easter Market that grows with the development of Early Spring throughout the nation.

**11:** The third cold wave of the month, ordinarily the last severe system of Late Winter, arrives near this date, bearing a high chance for precipitation and sunless skies. Yesterday's new moon is expected to intensify this front.

**12:** Horned larks and red-winged blackbirds, meadowlarks, starlings and bald eagles begin migrations. Skunk Cabbage will be recovering from the deep cold and might well be blooming in the wetlands.

**13:** Today is the beginning of Christian Lent.

**14:** The hay harvest often begins in Arizona near this date. Soon spring oats and barley planting starts in California, spring oats seeding in Kansas

**15:** As December 15 marks the beginning of the darkest and chilliest portion of the year, February 15 marks the beginning of the end of winter. Across the South, the floral

cycle is now starting, and along the Canadian border, the frequency of highs in the teens or below starts to drop. Since mild winds from the Gulf of Mexico often clash with Arctic air during this period, the days between the 14<sup>th</sup> and 18<sup>th</sup> bring an increased likelihood of serious storms.

**16:** Around the yard, bulb season opens this month as far north as Chicago, with the first aconites opening in sheltered microclimates.

**17:** Ambystoma salamanders mate at night in the first mild rains. Mallards scout for nesting sites. Moths and water striders appear on warmer days.

**18:** Today is Cross-Quarter Day. Depending on the year and region of the country, growth occurs on ragwort, dock, sweet rocket, asters, winter cress, poison hemlock, sedum, mint, celandine, plantain, poppies, pansies, daffodils, tulips, crocus, aconite, hyacinth, and strawberries. All those hardy leaves are expanding a centimeter here or there, such measurements seeming unimportant until they can measure spring, and then there is no insignificant degree.

**19:** Depending on the year and your location, killing frosts could be over for the year in six to eight weeks. Always plan to have some plants ready to go into the ground early. Many years, they will survive and give you a bonus harvest.

**20:** Although high pressure does sweep across the nation near this date, the low that precedes that front often brings some of the warmest temperatures of the month.

**21:** In southern California, the wildflower season is well underway in wetter years, with large white desert lilies in full bloom and bright purple sand verbena blossoming where moisture is adequate. Fields of daffodils are open in southern Georgia.

**22:** Mountain bluebirds are coming back to Yellowstone. Bald eagles are laying eggs there, and ravens pair up for spring, frolicking as they court. Snow midges appear as the weather becomes milder along the mountain streams; they provide early food for birds and fish that become more ac-

tive as equinox approaches.

**23:** Mares show signs of estrus, as the days grow longer. The last of the lambs and kids conceived in Middle Fall are born. Chipmunks come out to play and mate in the sun. Rabbits are breeding; foxes will be hunting them. In South Carolina, bee season has started. Honeybees and carpenter bees collect pollen from dandelions, yellow-flowered wild radishes, red maples, henbit, blue toadflax, white clover, and mouse-eared chickweed.

**24:** After the benign days of February's third week that often force snowdrops and aconites into bloom, the chilly February 24 front almost always pushes a brief Snowdrop Winter deep into the South. Tomorrow's full moon is almost certain to intensify the cold.

**25:** Today is full moon day. Expect a little more trouble from children, parents, pets and livestock. Medical and social services personnel could expect more calls for their services.

**26:** Killdeer, rusty blackbirds, and canvasback ducks migrate. Horned owlets hatch in the woods. Sweet corn has been planted along the Gulf coast. Redbuds and azaleas are in full bloom in Georgia, rhododendrons just starting to come in. In the lowlands of Mississippi, swamp buttercups are open, violets and black medic, too.

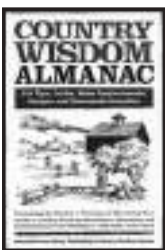
**27:** The front that arrives near the end of this month is almost always more gentle than the February 24 front, and its transit signals the end of Snowdrop Winter. Clear skies are a hallmark of this front's arrival, and bright conditions usually follow on the 28<sup>th</sup>.

**28:** As the moon wanes, trim hooves, slaughter, worm, and treat for external parasites. Continue pruning and preparations for the birth of lambs and kids.

#### Lunar feeding patterns for people and beasts

The following weekly key to lunar position shows when the moon is above the continental United States, and therefore the period during which all creatures are typically most active. The second-most-active

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times occur when the moon is below the earth. Fishing and hunting may be more successful, and livestock, children and other family members may be slightly friskier with the moon overhead.

**Date: Moon Above; Moon Below  
January**

1-4: Midnight to Dawn; Afternoons  
5-11: Mornings; Evenings  
12-17: Afternoons; Midnight to Dawn  
18-25: Evenings; mornings

**January 26-February 2:**

Midnight to Dawn; Afternoons  
3-9: Mornings; Evenings  
10-16: Afternoons; Midnight to Dawn  
17-24: Evenings; Mornings  
25-28: Midnight to Dawn; Afternoons

**Winners of the November-  
December Sckrambler**

A total of 106 readers responded to the November-December challenge by my deadline of October 25, and a prize of \$5 was promised to the 4th, the 27th, the 49th, the 71st, the 105th and the 170th person to unscramble the sckrambled words.

The 4th person to respond correctly was Ralene Davis of Cedar Vale, Kansas; the 27th was Roxann B. Gooding of Beloit, Ohio; the 49th was James Huskey of Madisonville, Texas; the 71st was Donald Hennings of Mena, Aarkansas, and the 105th person was Margie A. Neff of Junction City, California. If a 170th person responds correctly before the answers are printed in the next COUNTRYSIDE, he or she will win \$5, too, and his/her name will appear in the next issue.

**Answers to the  
November-December  
Sckrambler**

ENSKCICH: CHICKENS  
OLFKC: FLOCK  
GESG: EGGS  
SAHM: MASH  
OORRDEB: BROODER  
LERRIOB: BROILER  
OROETSSR: ROOSTERS  
SENH: HENS  
ARAPSETIS: PARASITES  
OUPLTRY: POULTRY  
AIGNYL: LAYING

IUAORTBCN: INCUBATOR  
TOML: MOLT  
KSCICH: CHICKS  
TAHYREHC: HATCHERY  
LOWF: FOWL  
EREF NAREG: FREE RANGE  
LPCKUGIN: PLUCKING  
LUPLEST: PULLETS  
SETIM: MITES

**The January-February  
Sckrambler**

SGPI  
WATCOHC  
EBINAIR  
ERHSRETSECOULG  
MATHTROW  
UORDC  
ERD TTLEAW  
OCALEBM  
UIEANG GHO  
RACEALND  
HSKROERIY  
SHIREBERKE  
AELRG ETWHI  
FTOOMUEL

EERHDRFO  
PMAHRIHSE  
DNALOP INCHA  
DASLEDBACK  
STREEHC WHITIE  
STOPDTE

If you are the 1st, the 11th, the 44th, the 77th, the 100th or the 150th person to return your correct Sckrambler solutions by my deadline of December 25 to Poor Will, P.O. Box 431, Yellow Springs, OH 45387, you will win \$5. There should be no typos in this puzzle, and no typo prize will be awarded. If you happen to find a typo, however, you may simply skip that word without penalty. Send your entries by regular mail (postcards preferred) to Poor Will at P.O. Box 431, Yellow Springs, Ohio 45387. The names of any winners whose correct responses are received after my deadline to COUNTRYSIDE will appear in a later issue.

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**Coming up:**

- MARCH/APRIL:  
Garden planning, a look at little living places. (If you've downsized lately, send us your thoughts on the subject.)
- MAY/JUNE:  
Recipes for excess milk; tips for keeping livestock cool; and a homemade hay-baler.

~ Deadlines are the 25th of the 2nd preceding month. ~

**Share your knowledge!**  
Write to: COUNTRYSIDE Editorial,  
145 Industrial Dr., Medford, WI 54451;  
csyeditorial@tds.net.

# Countryside's Breeder's Directory

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TIERRA SECA FARMS, Sandra Moerbe, 531 Ham Ln., Uvalde, TX 78801. 830-278-6419. <smoerbe@stx.rr.com><www.tierrasecafarms.com> Nigerian Dwarf goats.

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WILD GERANIUM HOLLOW FARM, Season Treder, N6476 Cty. Rd. n, Princeton, WI 54968. 920-229-4930. <wild\_geranium\_hollow@yahoo.com><www.wildgeraniumhollowfarm.com> Miniature Nubian, Nigerian Dwarf Goats. Perfect milking goats for your small farm.

**Hogs**

**Arizona**

THE ROCKING ROBIN RANCH, Prescott, Arizona. 928-925-6886. <www.minijersey.org> Registered: Heritage KuneKune pigs, mini Jersey cattle, Nubian goats & Bulldogges.

**Arkansas**

FARMERS HEREFORD HOGS, Thomas Hardin, 13776 E. Hwy 56, Ash Flat, AR 72513. 870-322-8423. Registered Hereford hogs.

**Idaho**

IDAHO PASTURE PIGS, Gary & Shelly Farris, PO Box 765, Rigby, ID 83442. 208-716-1733. <idahopasturepigs@hotmail.com><www.idahopasturepigs.com> Idaho Pasture Pigs—A smaller, friendlier, pasture based meat pig for your farm.

**Missouri**

CROWLEY'S RIDGE MINIATURE FARM, David Stoltzfus, 32169 Co. Rd. 337, Advance, MO 63730. 573-421-2365. Exotic KuneKune pigs and rare Red Wattle hogs. Farm pets and quality breeding stock. Docile grazing.

HEREFORD HOGS, Steven Dabney, 7415 High Point Dr., Raymondville, MO 65555. 417-457-6703. <aar7ac@yahoo.com> Registered Hereford hogs—gilts & boars available.

**Nebraska**

MEADOWLARK FARM, Larry Rauert, 4767 N. Quandt Rd., Grand Island, NE 68801. 308-381-1518. <meadowlarkfarm@lycos.com> Registered Hereford hogs. Boars, gilts, feeder pigs, multi-bloodlines.

**Large Black Pigs**

**Kansas**

UNDERHILL FARMS, Lynn & Karen Kaufman, 187 21st Ave., Moundridge, KS 67107. 620-345-8415. <info@underhillfarms.com> <www.underhillfarms.com> Large Black hogs.

**Michigan**

HORTON FARMS, Robert & Christine Horton, 11650 Remick Rd., Blanchard, MI 49310. 989-561-2386. Large Black Hogs.

**Miniature Cattle**

**Arizona**

THE ROCKING ROBIN RANCH, Prescott, Arizona. 928-925-6886. <www.minijersey.org> Registered: mini Jersey cattle, Nubian goats, Heritage KuneKune pigs & Bulldogges.

**Colorado**

TWO SHOES RANCH. Registered Miniature Herefords. Bill & Dona Shue, 696 Co. Rd. 22, Craig, CO 81625. 970-824-0105. 2shoesranch@gmail.com http://2shoesranch.com

**Pennsylvania**

WELSH MOUNTAIN FARM, Amos T. Ebersol, 590 Red Hill Rd., Narvon, PA 17555. 717-768-3652. Mini Jersey Cattle.

**Miniature Horses**

**Wisconsin**

TRAILS END STABLE, Shirley Kreuzer, W8897 Apple Ave., Medford, WI 54451. 715-785-7286. Reg. AMHA-AMHR Miniature Horses.

**Miniature Pigs**

**Washington**

NORTHWEST MINI PIGS, Melissa Nading, 103 Ridgecrest Ln., Longview, WA 98632. 360-609-1971. <www.northwestminipigs.com> Raising quality mini pigs for your family.

**Miniature Sheep**

**Kansas**

SHEEPFIELDS, Diane Spisak, Wellsville, KS. 785-883-4811. <www.akbashdogs.net> Babydoll Southdown Miniature sheep, Akbash Dogs, Polish bantam chickens.

**Pigeons**

**Arkansas**

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CHICKEN SCRATCH POULTRY, Larry & Angela McEwen, RR3 Box 44, McLeansboro, IL 62859. 618-643-5602. <larry\_angie@chickenscratchpoultry.com> <www.chickenscratchpoultry.com> Coronation Sussex, Light Sussex, Lavender Orpington, Black Copper Marans, Blue Copper Marans, Blue Laced Red Wyandotte, Welsummers, Blue Ameraucana, Black Ameraucana, Rumpless Araucana, Olive Egger.

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FISHER TEXELS, W. Eugene & Niki Fisher, 2275 N. Grays Creek Rd., Indian Valley, ID 83632. 208-256-4426. <fishertexels@gmail.com> <www.fishertexels.com> Texel.

## Indiana

FINE LINE FARM, Mike & Linda Wehner, 6624 N. 800 W., Madison, IN 47250. 812-873-0012. <lcoxwehner@yahoo.com> Club Lambs Hampshire/Suffolk cross.

## Michigan

SANDHILL MIST, Ken & Elizabeth Rosenow, 725 West Free Soil Rd., Free Soil, MI 49411. 231-464-5466. <liz@savage99.com> <www.sandhillmist.com> Icelandic.

THE LAVENDER FLEECE, Laurie Ball-Gisch, 3826 N. Eastman Rd., Midland, MI 48642. 989-832-4908. <www.lavenderfleece.com> Icelandic, Leicester Longwool. Also Icelandic Sheepdogs.

THE WHITE BARN FARM, Kim & Irv Preston, 10080 S. Wyman Rd., Blanchard, MI 49310. 989-561-5030. <The6PslnAPod@power-net.net> <www.TheWhiteBarnFarm.com> CVM/Romeldale. Breeding stock/fleece.

## Missouri

MISSOURI KATAHDIN BREEDERS ASSOCIATION, Randy Wehner, 12 Morningside Ln., Long Lane, MO 65590. 417-345-1515. <MoKats@case-agworld.com> <www.case-agworld.com/MKBA.html> Katahdin Hair Sheep. Why shear when all you want is meat? Missouri Katahdins are hardy, good mothers and excel on forage.

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TRIMBUR FARM FINNSHEEP, Heidi Trimbur, 58 Biting Rd., Alburts, PA 18011. 610-845-3607. <www.trimburfieldfinnsheep.com> <trimburfield@gmail.com> Finnsheep: quality breeding stock selected for temperament, conformation, fertility, premium colored/white wool, grass-fed programs and parasite resistance.

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AMERICAN BLACK WELSH MOUNTAIN SHEEP ASSOCIATION, Eugenie McGuire, Sec./Treas., PO Box 534, Paonia, CO 81428-0534. <info@blackwelsh.org> <www.blackwelsh.org>

AMERICAN EMU ASSOCIATION, 1201 W Main St., Suite 2, Ottawa, IL 61350. 541-332-0675. <info@aea-emu.org> <www.aea-emu.org> Emu.

AMERICAN HIGHLAND CATTLE ASSOCIATION, Historic City Hall, 22 S. 4th Ave., Ste. 201, Brighton, CO 80601-2030. 303-659-2399, fax: 303-659-2241 <info@highlandcattleusa.org> <www.highlandcattleusa.org> Benefits of Highland Genetics: Enhance Beef Quality; Infuse Grass Genetics; Increase Browsing & Foraging Ability; Improve Calving Ease; Add Maternal Longevity.

AMERICAN MINIATURE HORSE ASSOCIATION (AMHA), Pam Pruitt, Registration Supervisor, 5601 South Interstate 35 W., Alvarado, TX 76009. 817-783-5600, Fax 817-783-6403. <Information@amha.org> <www.amha.org>

AMERICAN MINIATURE JERSEY ASSOCIATION & REGISTRY, LLC., Maureen Neidhardt, Registrar, 3571 Hwy. 20, Crawford, NE 69339. 308-665-1431. <rarebreed@bbc.net> <www.miniaturejerseyassociation.com>

ANKOLE WATUSI INTERNATIONAL REGISTRY, Becky Lundgren, 22484 W. 239 St., Spring Hill, KS 66083-9306. 913-592-4050. <watusi@aol.com> <www.awir.org>

BARBADOS BLACKBELLY SHEEP ASSOCIATION INTERNATIONAL, registry for American Blackbelly & Barbados Blackbelly hair sheep. Carol Elkins, Secretary, 808 30th Lane, Pueblo, CO 81006 <info03@blackbellysheep.org> Directory of breeders at <www.blackbellysheep.org> No shearing, economical, addictive meat quality.

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FINNSHEEP BREEDERS' ASSOCIATION, 6861 Old Pipestone Rd., Eau Claire, MI 49111. 269-461-4101. <FBAsecretary@finnsheep.org> <www.finnsheep.org>

HEARTLAND HIGHLAND CATTLE ASSOCIATION, for free information on Highland cattle call 417-345-0575 or email <heartlandhighlandcattle@gmail.com> Check the webpage, <www.heartlandhighlandcattleassociation.org>

ICELANDIC SHEEP BREEDERS OF NORTH AMERICA (ISBONA), Membership Secretary, 253 North St., Mechanic Falls, ME 04256. 207-740-5110. <membership@isbona.com> <www.isbona.com>

INTERNATIONAL FINNSHEEP REGISTRY, Deb Olschefska, Secretary, 3937 Ridgewood Rd., York, PA 17406. 717-586-2117. <www.internationalfinnsheepregistry.org>

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NORTH AMERICAN BABYDOLL SOUTHDOWN SHEEP ASSOCIATION AND REGISTRY (NABSSAR). Protecting, preserving, and promoting the Babydoll Southdown. Educational quarterly news journal, information, and breeder list. <www.nabssar.org> NABSSAR Registry: 641-942-6402.

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NORTH AMERICAN SHETLAND SHEEPBREEDERS ASSOCIATION (NASSA), P.O. Box 51, 222 Main St., Milo, IA 50166. 641-942-6402. <www.shetland-sheep.org>

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## Index 2012

**Adverse possession:** Questions, 96/2:20, reply 96/4:8

**Alpacas:** fine fleeces; 96/6:51

**Alternative energy:** Domestic hot water tank, 91/6:22; Life during a power-outage, 96/1:34; Living off-grid, can you hack it? (advice), 96/5:42; complete solar powered generating systems available, 96/6:8; analysis of future energy, economics, peak oil, population, 96/6:30; multi-fuel technology, 96/6:64

**Animal & Plant Health Inspection Service (APHIS):** about law, 96/2:75

**Apples:** growing in gold regions, 96/3:45; repair eaten bark, 96/3:48

**Arbor:** Building frugal, 96/2:50

**Auctions:** ultimate recycling, 96/2:91

**Beef:** organic at White Oak Pastures, Georgia, 96/2:57

**Beets:** growing tips, 96/2:48

**Bees:** Elements of honey, 96/1:60; Warre hive, 96/1:62; honeybee colony collapse disorder fact/fiction, 96/6:80

**Books:** *After the Tea Party is Over*, Devon J. Noll, 96/1:9

**Camelina:** high protein hay, 96/3:82

**Cast iron:** caring for, 96/5:40

**Cows/cattle:** Guernsey, perfect homestead cow, 96/5:53; handle without injury, 96/4:61; Highland Cattle: Breed review, 96/1:59; mob grazing improves pasture, 96/2:63; Remedies for, 96/1:57 (reply 96/2:10); treat mastitis w/vitamin D, 96/5:52; cow warts, 96/6:50; British White, 96/6:54

**Compost bins:** Building, 96/1:52

**Crafts:** ideas, 96/4:82; candles, beeswax, 96/6:85

**Dairy:** see **recipes/milk**; healthy alternatives to margarine, 96/4:48

**Dogs:** aggression in livestock, 96/2:74; Lagotto Romagnolo (water dog), 96/6:56

**Donkey:** guardians, 96/4:63

**Essential oils:** dairy barn remedies, 96/1:57; Uses of, 96/1:48

**Farmer:** Tips to becoming a, 96/2:52

**Finances:** Feed a family of 6 for \$400/mo., 96/1:42; money-saving grocery tips, 96/2:90; odd ways to make quick money, 96/5:76; earn money with livestock; 96/6:20

**Food:** money-saving grocery tips, 96/2:90

**Food preservation:** Oven canning, 96/1:44, 96/2:8; solar drying how-to, 96/3:42

**Frogs:** raise bullfrogs, 96/4:68

**Fruit tree:** repair eaten bark, 96/3:48

**Garden:** covered boxes, 96/4:42; preparing soil for, 96/2:40, 43; Row covers, using, 96/2:37; soil-borne pathogens, 96/2:35; succession planting & foodsheds, 96/5:36; winter preparation, 96/6:74; raising worms under rabbits, 96/6:77

**Garlic:** growing, health uses, oil, 96/4:44

**Gluten-free diets:** recipes, 96/1:39

**Goats:** hoof trim w/concrete slab, 96/5:59

**Grain mills:** Comparing, 96/1:36

**Health:** alternatives to margarine, 96/4:48; Chiggers: Relief from, 96/1:10; allergy sufferer alternatives, 96/6:10; medicine cabinets, contents, 96/6:46; medicine cabinet must-haves, 96/6:46; Redmond clay toxins, 96/6:46

**Herbicide:** Unintended consequences, 96/2:28

**Hoe:** make garden, 96/4:34

**Hogs:** Rare breed in English park, 96/1:78; pastured pig experience, 96/6:59

**Homestead blunders:** tips on, 96/4:28

**Homesteading:** life in 1800s, 96/6:16

**Horse:** Dream Catcher program/sanctuary, 96/2:69; hoof health, 96/5:61; miniature, 96/2:66; supply & demand problems, 96/2:70; Something About Walter, 96/5:62

**Jerri's (Cook) soapbox:** misc. news, 96/3:71

**Light bulbs:** new use law 1/1/12, 96/2:93

**Livestock:** ethics, 96/5:48; life-cycle/butchering, 96/5:51; waterers from upright freezers, 96/1:17

**Maple syrup:** making, 96/2:82

**Masonry stoves:** Tulikivi brand, 96/1:27

**Milk:** make powdered, 96/3:36; raw laws, 96/1:53, 96/3:70; recipes, 96/3:30

**Mules:** on the homestead, 96/3:65

**Orchard:** see **fruit trees**; apples; Porcupine in, 96/4:31

**Oxen:** farming with, 96/2:61

**Pasture:** free-range poultry, 96/5:68; improve with mob grazing cattle, 96/2:63

**Pets:** cat's urinary tract infection remedy, 96/6:49

**Poor Will's Almanack:** 96/1:100; 96/2:102; 96/3:102; 96/4:100; 96/5:94; 96/6:94

**Potato:** Dirty Kids' Club grow, 96/3:51; growing, 96/3:53

**Poultry:** Asian Game chickens, 96/1:73; free-range, 96/5:68; Laying mash & scratch recipe, 96/4:59; raising basics, 96/1:76; self-watering system, 96/4:60; build protein dispenser, 68/6:61

**Predators:** on the homestead, 96/1:79

**Pumpkins:** Growing, bread, 96/1:50

**Rabies:** in horses & cattle, 96/1:64

**Recipes:**

*Bread:* Cornbread, 96/3:40; Debbie's "Rib Stickin'" Bread, 96/3:41; Sow's Ear Whole-Mal/Potato Bread, 96/1:38; Steamed Pumpkin Bread, 96/1:51; Swedish Pancakes, 96/4:57

**Candy:** old-fashioned candy; 96/6:83; Candied Orange Peel, 96/6:83; Vinegar Taffy, 96/6:84; Vinegar Candy, 96/6:84; Peanut Brittle, 96/6:84; Sugared Nuts; 96/6:84

**Condiments:** Pear Honey, 96/5:38

**Dairy:** cheese, sour cream, yogurt, 96/2:35; Ice Cream (Butter Pecan, Chocolate, Lemon Orange, Strawberry, Vanilla, Instant Cubes), 96/5:38; powdered (dry) milk, 96/3:36; Saffron Flavored Eggs, 96/4:52; Sherbet (Goat Milk Lime, Orange, Tangy Citrus), 96/5:39; Yogurt (5), 96/3:32; French style soft cheese, 96/6:82;

**Peanut Butter Pie** from French style soft cheese, 96/6:82;

**Cheese Balls** from French style soft cheese, 96/6:82;

**Dessert:** 3,2,1 Cake, 96/3:39; Banana Cake, 96/3:38; Buttermilk Pound Cake, 96/3:37; Egg Custard Pie, 96/3:37; Grape Salad, 96/3:37; Hot Milk Cake, 96/4:58; Ice cream toppings, Butterscotch, 96/5:39; Pina Colada Pudding, 96/3:37; Pie crust, 96/3:40; Pudding, 96/4:57; Pudding Pie, 96/4:57; Pumpkin Spice Cake in jar, 96/3:38; Zucchini Cake, 96/3:38

**Gluten-free:** Mom's Bread: 96/1:40; Mommy's Muffins, 96/1:40; Radicchio Salad with Frisee & Apples, 96/1:41; Royal Rose Radicchio Risotto, 96/1:41; Sugar-Free Cake, 96/1:40

**Grains:** Cooked Broad Beans, 96/4:52; Rice Flavored With Turmeric, 96/2:87; Turmeric Flavored Lentils & Cabbage; Turmeric Flavored Chickpea Stew, 96/2:88; Turmeric Split Peas, 96/2:87; Saffron Lentils, 96/4:52; Saffron Rice, 96/4:52

**Jelly/Jam:** Blackberry Jelly, 96/3:37; Blueberry Jam, 96/3:37; Cooked Raspberry Jam,

96/4:55; Cooked Sweet Plum Jam, 96/4:55; Red Wine Jelly, 96/4:56; White Wine Jelly, 96/4:55

**Main dishes:** Chicken and Almond Couscous, 96/4:53; Paella, 96/4:54;

**Pickles:** Bread & Butter, 96/5:38; Crisp, Sweet Relish, 96/5:38;

**Salad:** Summer, 96/5:38;

**Side dishes:** Dumplings, 96/4:57

**Soups/Stews:** Bean w/ Bacon Soup (add 5 C celery), 96/5:38; cream soup mix base, 96/4:57; Turmeric Flavored Vegetable Stew, 96/2:90

**Vegetables:** Chickpeas and Broad Bean Stew, 96/4:53; ; Fried Green Tomatoes, 96/5:37; Grilled Market Veggies, 96/5:37; Moroccan Vegetable Soup, 96/4:52; Potatoes, various, 96/4:57; Roasted Basil Tomatoes, 96/5:37; Spicy Turmeric Potatoes, 96/2:87; Sweet-Sour Beets, 96/2:49; Turmeric Flavored Moong Beans with Onions, 96/2:88; Vegetarian Cabbage Rolls with Turmeric, 96/2:88

**Repurpose/recycle:** new use from discarded objects, 96/3:79

**Retirement:** tips for, 96/4:81

**Saffron:** history and recipes, 96/4:51

**Sawmill:** portable, Norwood brand, 96/6:66

**Scours:** Causes of, 96/1:18;

**Seed:** saving & propagating feature, 96/5:22; varieties, list of, 96/2:44

**Sheep:** Bighorn overview, 96/5:71; Finnsheep, 96/4:66; manage flighty, 96/2:72

**Soil:** manure & leaves, 96/2:43; Pathogens, 96/2:35; preparing garden, 96/2:40

**Storage:** increase pantry space, 96/4:46;

**Sweet potatoes:** rooting tips, 96/4:15;

**Technology:** & tradition collide, 96/4:69; no such thing as free energy, 96/4:72;

**Tomatoes:** see recipes

**Tractors:** tips for buying used, 96/1:80

**Turmeric:** recipes and history of, 96/2:86

**Vechur cattle:** mini breed, 96/3:67; related to Zebu, 96/4:62

**Water:** feature story – conservation, grey, 96/4:34; make hand pump (reprint) 96/4:41; “rings” for garden, 96/4:40; storing for emergency, 96/2:19; pump water without power, 96/6:8

**West Nile Virus:** in horses, 96/1:67

**White Oak Pastures:** organic beef in Georgia, 96/2:57

**Wood:** ideal firebox conditions, 96/5:44; Splitting tips, 96/1:29; woodturners, 96/3:76

**Worms:** raising under rabbits, 96/6:77

**Yogurt:** Recipes, 96/1:45

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By JIM WEST

MARSTONS MILLS, MASSACHUSETTS

Like most farmers in these tight monetary times, I'm always searching for ways to save money.

To start: Whenever I had to have tree stumps removed, I would hire someone with a Bobcat or backhoe. Naturally this got expensive, so I decided to buy a used tractor and do the work myself. After all, I reasoned, when I was a teenager I had worked on my grandfather's farm and I used his tractor all the time. How hard could it be? It wasn't as if I was an amateur.

I bought a 1948 Farmall tractor, Model H, the same model I had used on the farm. Folks, this is a big tractor and it looked a lot bigger than the one my grandfather had owned. But, after reading the manuals and taking a few trips around the property, I was confident enough to try to pull a few stumps with it.

Do you know how far the taproot of the pitch pine grows into the soil? I found out. I hooked a chain to the pine stump and then to the three-point hitch on the tractor. I looked back at my wife, Mary, and asked her to let me know when the stump began to lift. I put the tractor in low gear, revved the engine and gave it the gas. Nothing happened. The tractor strained against the chain, blue smoke began pouring out of the exhaust stack, and the stump remained solidly entrenched.

"Jim," Mary hollered over the roar of the tractor "the stump isn't moving." No kidding.

I gave the Farmall more gas. Ah, I said to myself, that stump is moving now. I can feel it. I'll just give a little more gas.

Suddenly, I found that the front end of the tractor was higher than the back, and I was looking up at the sky. The rear wheels of the tractor had pulled completely away and I was sitting on the ground. Mary was talking loudly—screaming actually—that the tractor had broken. I calmly stepped off the tractor—which wasn't not too far, considering it was sitting on the ground—and walked slowly back to the stump. (I was shaking too much to hurry.) It had not budged.

Like most farmers, I'm stubborn, and never one to give up. I had the Farmall hauled away to a tractor graveyard and decided that no stump would get the better of me.

Round two. I decided to dig the stump out. Two days and three feet later, I still had not reached the end of the taproot. At that point even a stubborn farmer knows when he is defeated. I got the chainsaw, cut about about a foot off the stump, and filled the hole back in. That was the end of my tractor experiment.

Moving on: I was listening to the farmers' report on the radio one morning, and the talking head was mentioning how popular purple snap beans were becoming. They were being used in fancy restaurants and were even showing up at farmers markets. In fact, there was such a demand for them, they were turning out to be a great cash crop for the small farmer.

"Ah, perfect," I said, dollar signs dancing in my head. There are plenty of restaurants and a farmers market nearby. This will be a piece of cake. I ordered the seeds from the local hardware store, plowed up about a half an acre near the barn, and planted my purple bean seeds. Now all I had to do was wait for the money to come in. Wrong!

Oh, the seeds grew fine and I had a bumper crop of beans. Mary and I picked purple beans until our fingers ached. What came next was the problem.

Did you ever try to sell *purple* beans to someone who had always bought *green* beans? Talk about skepticism; I couldn't give those beans away.

Questions like, "What made your beans turn people?" "Did you use chemicals on your beans?" And the final one, "Are you sure your land isn't on a nuclear waste dump site?"

I told all the skeptics that once the beans were cooked, they would turn green. I gave them free samples—at least to those who would take them. Mary showed them purple bean recipes. Forget it. I had enough purple beans to feed an army. I eventually dug them up and put them on the compost pile. So much for making a fortune on purple beans.

And finally: Do you know how much

tree companies get paid to cut down trees? I do, so I cut down most of my trees. I followed all the rules, used safety equipment, and got out of harm's way when the tree started to fall. And I have never had a problem. The tree always falls where it is supposed to. Well, maybe once I had a problem.

There was an oak tree that leaned over the house and every time the wind blew, it would snap, crackle, and pop. One sleepless, windy night, I had had enough and vowed to put the tree out of its misery. The next morning I got the chainsaw, ladders, safety helmet, ropes, and took on the tree. Did I forget to mention that the oak tree was near our electric lines? Mary mentioned that little fact to me along with the suggestion I hire a professional to cut the tree down.

I told her not to worry. I had earned an A in physics. I dug out my old physics book (I never throw anything away), found the chapter on triangulation, measured off the tree, added in a safety measure, started up the chainsaw, and began to cut away.

"I think that tree is going to hit the wire," Mary said.

"Mary, there's no way the tree will hit that wire," I answered smartly.

How could she tell anyway? She was only eyeballing the tree. I used the Scientific Method... and the tree came tumbling down along with the electric wires. I had missed my safety measure by 20 feet. So much for my A in physics. (Or was it a D? Hmm.)

The electric company came, looked the situation over, and with nary a word (they couldn't talk, they were laughing too hard), repaired the damage. Before the repairmen left, the foreman suggested that the next time I should call a professional to cut trees that close to the wires.

Very funny.

I could go on and on about my schemes and projects to save money. There was the time I tried to dig a well by using the dowsing method, and Mary reminded me about the summer I grew the giant sunflowers to sell (my wife never forgets).

I'm sure you get the point. We're all the same when it comes to searching for ways to save money. As a matter of fact, you'll have to excuse me now, I just bought a fascinating book on how to make a fortune raising rabbits for meat. I can't wait to begin reading it. I wonder if rabbits will eat purple snap beans?

*Jim West and ever-suffering wife, Mary, can be reached at elzena@comcast.net.*

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