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COUNTRYSIDE

& Small Stock Journal

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JANUARY/FEBRUARY 2015

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COUNTRYSIDE

In this issue
Vol. 99 No. 1 • January/February 2015

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



Off-grid cooking, pg. 27



Surviving a water shortage, pg. 35



Farming holistically, pg. 48

Departments:

Country conversation 8

Alternative energy:

Off-grid refrigeration 20

The woodshed:

One weird trick for cutting wood 25

DIY solutions:

DIY solutions for off-grid cooking 27

DIY vehicle emergency tips 30

Homestead water:

Water system for a low-flow well 32

Installing a backup hand pump 34

Surviving a water shortage 35

Jerri's soapbox:

Full metal colander 36

Make a simple drying rack 38

The shade tree mechanic:

Old machines—Lubrication 41

Wash with nuts—soap nuts! 43

Apple orchard leads to organic business 44

Homestead business:

Farming holistically on a small scale 48

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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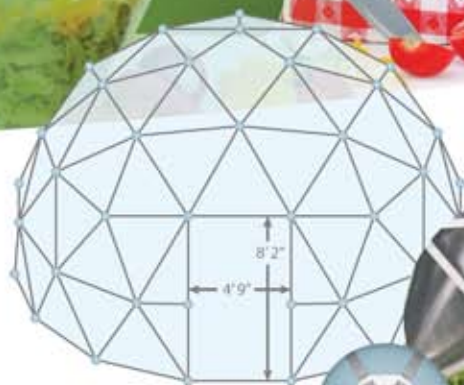
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On the cover:

Grinding your own grains helps to ensure healthful baked goods. (See page 83.)



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The garden:

Gardening: A vital step to the freedom of self-sufficiency..... 52
Quality seeds are everything..... 54
Get an early start with carrots 56
Anyone for okra? 57
Dressing up the winter garden..... 61

A journey with the bees:

Deep winter and preparing for spring..... 64
Dadant & Sons, Inc. history 66
Master apiarist shows pioneer spirit 68

The henhouse:

Saddle up your chickens 70

The horse barn:

'Tis the season for wintertime hoof care 71
Patching up Pacheboy..... 73

The goat barn:

Pneumonia in goats 75

Homestead pests:

Flea control..... 77

The homestead kitchen:

Waste not; want not..... 79
Gift packages include dried soups ... 80
Upscale soup on a homestead budget..... 81
Grind your own grain..... 83
Cooking Blue Hubbards..... 85

Book reviews:

Four guides to better knitting..... 88

Country neighbors:

Okmulgee, OK is A-OK 94
Poor Will's Almanack 97
Capture your countryside..... 100
COUNTRYSIDE 2014 Index 112

After chores:

Down on the farm 114



Starting with carrots, pg. 56



Pneumonia in goats, pg. 75



Grind your own grain to make bread, pg. 83



How to knit a coaster, starts on pg. 88

Here's "almost everything you ever wanted to know" about self-reliant Country Living!

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- Build a fieldstone smokehouse
- Start your own business

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- How to choose a grain mill
- Build a solar shower

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- Choose the right knife

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- Stand-alone solar water pumping
- Raising rabbits step-by-step

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- Choose the best cow for your homestead

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- Composting the Easy Way, *Let Your Hens Do the Work*
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- Solar Panels: Buy or Build?
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Country conversation & feedback

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Readers want to hear your experiences

COUNTRYSIDE: Thank you for a beautiful magazine. The new paper and darker print make it much easier for failing eyes. The paper, better print and bright colors make it a real pleasure to read.

I think I can understand some objections as people are afraid you will improve their favorite magazine out of existence. I have already cancelled some of my old favorites because they have become a mish-mash of overlapping articles, ads and pictures. They are just too busy for comfort.

The last issue was nearly perfect — please do not change one thing more. I especially enjoy the letters and articles by readers. It is much more satisfying to read about people's actual experiences than an article someone has gleamed from the writings of others with no real input of their own.

Keep up the good work. — *Shirley Benson, Wisconsin*

Hear that, folks? "Everyone" wants to hear about your homesteading experiences! (That's a statement we hear quite often. What's better than real-life experience?) Tell us what works — and just as important — what doesn't work on your homestead. Send them to the address at the top of this page.

Grandpa's lifestyle was her guide

COUNTRYSIDE: Your magazine has been a big help to us for so many years, I have stacks of them saved up. Every winter I get them all off the shelf and go through them. Nothing like snow on the ground, an old COUNTRYSIDE to browse through, and a cup of hot cocoa. Now I don't mind one bit if the paper is slick, it's what it says that counts to me. I just had carpal tunnel surgery and I can still turn the pages! So here is my letter to all of the good readers.

I'm 78 years old, born and raised in Kentucky. My husband is a disabled Marine. We live off-grid and don't feel we are on the fringe of society or don't have a true grasp of what's happening in the world around us, as a reader mentioned in the Nov/Dec 2014 issue. We've been married for 32 years, spent most of it off-grid, as it's a peaceful life. When I was 11 years old, I visited my granddad who lived off grid: oil lamps, old cabin, gardens, wood cookstove. As I looked around his place, I thought "Someday I'm going to live like this." With COUNTRYSIDE magazine, a set of the old Fox Fire books, off we went on our journey. I was 45 or so then. Now I'd say I'm an off-grid pioneer lady, as I can handle most tough situations. Living this way has made me a stronger person, I think.

I love books and read a lot. I love to garden, collect seeds, love little Pekingese dogs, country decorating, canning, dehydrating, herbs, home-

made meds, good friends who write to me, helping the needy, thrift shops, and much more.

We live in a three-room cabin we built on 12 acres. Yes, I do believe 100% in "prepping," being prepared for a rainy day or able to help someone else down on their luck and hurting.

I'd like to hear from *female* pen pals who have lived this way and love it. I would also like to receive garden seeds from anyone who would like to share any kind. I need Cinderella pumpkin, Banana cantaloupe, hollyhock flower seeds, vegetable seed so we can plant and share the produce

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with those who need it. We've been doing this for over 25 years, so we often run out of seeds.

I don't know if I can answer all, but will, if you include a stamp with your first letter. I have many recipes to share that I've been making for over 50 years. Yes, life is good; I wouldn't trade it. So COUNTRYSIDE, keep on with your good magazine. We love it, whatever you print it on! — *Lillian Faubus*, 132 MC 5029, St. Joe, AR 72675

Integrity is important

COUNTRYSIDE: Referring to the comments made about your "new" glossy paper: In January 2012 I sent a letter to the *American Free Press* and it was published. In part it said "Snide comments were made about Ron Paul's seemingly less than dynamic campaign speeches." Nevertheless, I

quickly informed these commentators that many years ago, a politician who was exceedingly uncomfortable speaking to groups of people, a gentleman of quiet demeanor who had a less-than-forceful voice, did become successful. Why? Because the people during his time were more appreciative and aware of the content of a speech and the integrity and sincerity of the speaker than a "whatever sounds good to get elected" presentation. That man was Thomas Jefferson, our third president!

Evidently some readers are more interested in the cosmetics of the paper rather than the content. I don't care if you are printed on burlap, as long as I can read it. I subscribe for the varied and interesting information you cover. Keep up the good work!

— *Glenna K. Long, Michigan*

Is there anything they haven't done?

COUNTRYSIDE: First off, I have subscribed to COUNTRYSIDE since 1969 or 70. I love it. My thoughts on the shiny paper is that there is a glare and I need to keep moving it to be able to see. I like the old paper better.

I miss Jerome Belanger's *Beyond the Sidewalks*. He was so with it. (Ed note: Great news! *Beyond* is back in book form, with updates! See page 18 for more information.)

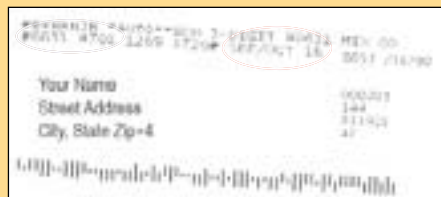
I will be 71 next month and have read your magazine since I was in my 20s. I have tried to be self-sufficient all these years. I now have a summer kitchen to can in and another building just for jars and equipment. I live on a farm with cows, pigs, chickens, goats, cats and a dog. I bought a Jersey cow two years ago to be able to milk and make butter. I had a root cellar made last year. I keep bees, a garden, can, knit and quilt. I told my husband all I could think I needed now was a smoke house (grin).

We had a man witch for water a year ago so we could put up a windmill. We haven't had the well dug yet. We live in a two-story old brick house built in the 1800s. It has solid brick walls. We heat with wood with



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Ongoing: KEEP AN EYE OUT FOR UNAUTHORIZED MAGAZINE RENEWALS (We never know when they'll pop up.)



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a propane furnace back up. My husband is a farmer. I couldn't have lived the life I have always dreamed of without him. Your magazine was what started me on this wonderful journey. As the economy gets worse and worse, I have tried to show people how to take care of their families by being more self-sufficient. This is the first time I have written, although I have thought of it several times. I especially like articles on how people are doing on their homesteads. Keep up the good work.

We went to the COUNTRYSIDE reunion a few years ago and were very disappointed. The place had junk all around. We didn't stay very long. The couple running it were very nice though. — Carol, Indiana

As the saying goes, one man's junk is another's treasure—especially on the homestead. (And yet another reader who wants to year from you!) Happy birthday, Carol.

Trade in COUNTRYSIDE?!

COUNTRYSIDE: When I received last month's magazine I was really surprised by the appearance. Like the other people who wrote you, I do not like this magazine. It feels and looks so cheap. Not only that, I don't like the heading print in the different colors you use. I have visual problems, which make reading difficult. Those colors remind me of another magazine format, because it is difficult to read that magazine. I quit taking it. I miss the smaller articles which makes hearing from many more people in your magazine. I fear COUNTRYSIDE magazine will fold if this keeps up. It is not nearly as interesting as it used to be when you could contact the writers. Not saying you should emulate *Backwoods Home* magazine, but take a look at it. It is a wonderful magazine. They had a great canning article not long ago.

I'm sure many others feel the same as I do. Please don't print my name. — via email

We like BH too! If you want to contact writers, send a stamped envelope that we can forward to them.

They have a “get home” raft!

COUNTRYSIDE: I really enjoyed this article and as a result added a few items to the backpacks we keep in our cars. Around here there are a lot of rivers. If we're stranded due to an EMP, no big deal—the bridges will still be standing. But if it's an earthquake, they may not be.

So we've included an inexpensive pool raft and large plastic construction bags. Crossing a large river with a lot of debris is dangerous, but it might be the only way to get home. At that point, probably nothing will be easy. Our idea is to use the raft and bags to float the backpack across the river while we hang on. Just hope it's not winter.

Would love to hear if anyone else has a solution for this problem.

By the way, we call it “Shiffa” for “Iffa the you-know-what hits the fan.” Just easier to say. — D.C. Parnell, Tennessee

Reader shares her “what's important” list

COUNTRYSIDE: After reading the two articles about the Get Home Bag and the 50 Things for TEOTWAWKI (Sept/Oct 2014), I thought of what I would consider important.

First, build a community where you live and work. Know your neighbors wherever you live and learn to work together on everyday things—including entertainment.

Learn a basic skill or more than one; how to repair things, knitting, gardening, herbal medicines, cooking and food preservation or whatever interests you and what you enjoy doing. Then use the skill regularly throughout your life.

Use solar energy in your daily life—a home built solar food dehydrator, solar oven, solar electric fencer or solar battery charger. Learn what sun power can do easily and become comfortable with it. We have a couple



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12 The successful man is one who had the chance and took it. Roger Babson

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- People-powered way to move stuff—garden cart, bike with bike trailer, large wagon, dolly, come-along, wheelbarrow and a manual tire pump. (Spare tire?)

- Supplies—duct tape, peroxide, baking soda, white vinegar, Everclear or good quality vodka for tinctures etc., sterile wound dressings, salt, glass bottles with corks or caps.

- Tools—basic and specialty tools depending on your interests and abilities.

Creativity, adaptability, and problem solving skills will go a long way in daily life and in a crisis. Smile, have fun and be prepared. — Jan

We don't need all the "frills" at the end of life

COUNTRYSIDE: In response to Jerri Cook's article "Life regrown": People talk about the expense of a funeral, burial, or death expenses in general more than they discuss what the current President is doing to our country and others, more than the price of automobiles or food, and more than what they can do for their neighbor. It's one of those things that is going to happen, we just don't know when, so if at all possible planning ahead makes the process so much easier.

Most of the expense in the death care industry could be avoided if not for government regulations, laws, and the public bowing to certain standards of what people will think if they don't have a certain type of service.

A story surfaced on the internet about cremated remains of folks that committed suicide in Jonestown,

Guyana some 35 years ago being found in a shuttered funeral home, but not all funeral homes or employees of those homes are created equal.

The good funeral homes have to pay or be scrutinized for the bad ones. The death care business is there to give the family and friends of the deceased closure, funeral/memorial services are as lavish or simple as the family decides they are to be. Most people today feel that a body has to look a certain way, be laid in state for a certain length of time, in a certain looking casket and be interred in a certain cemetery.

Poor old Joe, the town drunk (hypothetically speaking) is found dead in an alley downtown, but he is survived by six grown children living within one hour of town, and all the children have minimum wage jobs. Then there is Dr. Bob survived by a wife and one child who is a great doctor in their own right: With these two scenarios, are these two individuals going to receive the same treatment (from me they will)? Are they going to choose the same services (98.9% probability *not*). The town drunk will not be buried with all the lavishness that the good doctor will because of his status in the community, and there's no reason other than the good doctor has to go out in a "blaze of glory." Society says things need to look a certain way, but it doesn't say a doctor can be interred simply.

At one time years ago you could get a vehicle without all the "bells and whistles." Now vehicles come with power this and that, air conditioning, white letter tires, bucket seats, etc. Funerals can come without all the "bells and whistles" also, but most people (even those that can't afford the expenses) want the extras that increase the cost of the funeral. The area of the country that a person lives in and the different rules and regulations of each state and cemeteries will dictate the expense also.

I've seen funeral expense bills totaling over \$13,000 and over \$2,000 of that was just for newspaper obituary notices, those notices being sent to newspapers in three states. I buried

my mother 10 1/2 hours after death for around \$1,200.

Cremation may not always be the cheapest/least expensive route. It has been reported in the last six months that New Zealand funeral homes now charge approximately \$9,000 for a cremation, because their society has gotten so far away from traditional funeral services and a place to inter their loved one is hard to come by.

How green, how simple, how lavish, or how anything a funeral service will be determined by what the family wants or what their pocketbook can afford. — *Farron Wroblewski*

Timely info, unfortunately

COUNTRYSIDE: My dad just passed away and we found out just how expensive death can be. Want to thank you for your article "Life Regrown" in the Sept/Oct 2014 issue. My dad showed it to my mom and the very same day he died. My mother is now holding on to his ashes and will wait until she passes also, so they can be "planted" at the same time. It's a great way to continue their lives. Everyone I've mentioned the Bios Urn to loves the idea. Thanks. — *Dawn Hauger*

We're sorry you had to use the information so soon, but we're glad your father found it useful.

Tree supports as tree protection?

Maybe, with modification

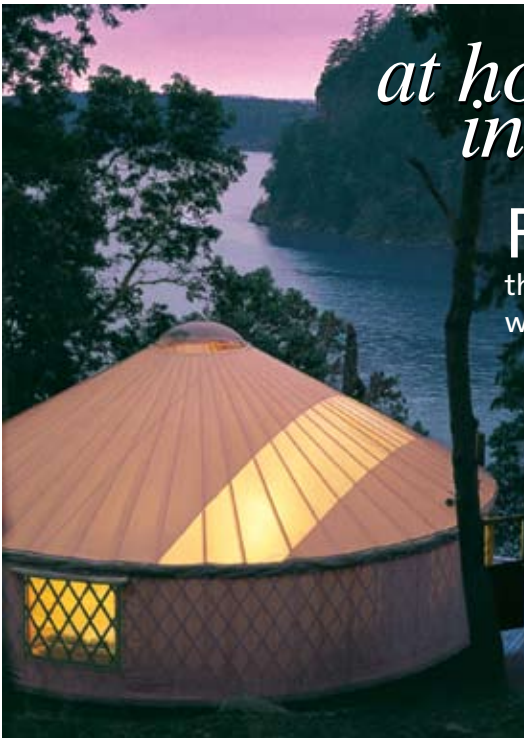
COUNTRYSIDE: I enjoyed very much the latest issue of COUNTRYSIDE (Nov/Dec. 2014), lots of great articles therein. I especially liked the Boaz combine article, the writer told it like it was, no sugar coating.

What I am especially intrigued by is the photo on page 76, where in the background it appears there are poles protecting trees in the pasture from grazing damage. I've never considered such an option to protect trees, but it might be worth investigating. Do you know where this photo

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Saplings with supports.

originated from, the *Permaculture Handbook* perhaps?

Anyway, I'd like to contact the owner of that photo to gather some more information about tree protection possibilities. Let me know if you can assist me with this contact information. — *Rod Angerth*

Ben Hoffman (author of the *Boaz* article) said the price of the machine increased by over \$2,000 by the time the magazine was off the press.

As for the trees, they seem to be supports, rather than protection. Although, depending on the grazing livestock species, maybe adding more horizontal supports would work as a deterrent in some cases. (And it's a stock photo.)



Source: Google map

A good life in the Philippines

COUNTRYSIDE: I especially liked the article on "Battery Banks," by Dan Fink in the March/April 2014 issue. Dan is famous from *Home Power Magazine* and somewhat of a hero to us solar power advocates.

There were also a number of letters on high taxes in that issue. I live in the Philippines. We have better weather than Florida or California, and of course that depends on exactly

where you live. I happen to live on the small island of Siquijor, very near to the north coast, with a fantastic 200-degree view of the sea and nearby volcanic islands. The temperature never exceeds 90°F, nor does it drop below 75. I have a very nice home that requires neither heating nor cooling at any time of the year. I grow my garden crops 365 days per year. Yes, some seasons are better than others for certain crops, nevertheless there are always fresh vegetables of some kind every day, and so many kinds of fruits, you have never heard of most of them.

The property tax here is low. If I lived in Florida or California, my home and property assessment would be well over a million dollars. My total annual property tax, including a new car, old truck and motorbike is a grand total of \$57 (yes annually), and includes my old home over on the highway.

Many foreigners live here in the Philippines because they cannot afford to live in their home country, and/or because they like the climate. Everyone here speaks English (it's one of the official languages of the country — and all government documents are in English. Labor is another attractive issue for older people with little money, as basic labor is less than \$5 per day for an eight-hour day. Even an experienced carpenter can be had for well under \$10 per eight-hour day.

If you must stay in the U.S. and you are retired, I would suggest that you look at states that do not have sales tax, such as Washington state. They must have low property taxes also, because many of my Missouri friends have their expensive boats, motor homes and other vehicles registered in Washington or Oregon. I know this is partly to avoid the horrible sales tax on an expensive vehicle.

I think property tax is the domain of counties and municipalities. Try to avoid living any place close to a municipality — they can annex you and increase your property tax by many hundreds of percent, and they have so many restrictions on home-stead lifestyles.

Generally, the Midwest, Central and South Central states have lower property values, consequently lower property taxes than the Northern or Coastal states and at the same time cater to farmers or rural residents more than their more affluent neighbors. I'm from rural Missouri and property taxes were never a major concern there, unless you owned an expensive newer vehicle. — *Bill McDaniel, Larena, Siquijor, Philippines*

Defeat worms with wasps

COUNTRYSIDE: Please be advised that trichogramma wasps are a very good control for army worms as it took just two seasons to eradicate the worms from an entire orchard and farm and into surrounding areas as well (November/December issue, "The Great Army Worm War"). We won our war with less overall effort on a much larger scale. The wasps could be purchased from nursery supply companies under beneficial's or beneficial insects. I would start looking for them early if you had any at all last year. They are sent fairly early in the season as they need to hatch out. Perhaps COUNTRYSIDE could locate suppliers? — *David Shepard*

Trichogramma Wasps lay their eggs in the eggs of the army worms, which kills them. There are a number of plants that will attract the wasps, including: common yarrow, dill caraway, coriander, Queen Anne's lace, tansy, parsley, pennyroyal, fennel, lemon balm, and Cosmos white sensation.

There are numerous sources for the wasp eggs including: Planet Natural, 800-289-6656, www.planetnatural.com; GrowOrganic.com, 888-784-1722; Arbico Organics, www.arbico-organics.com, 800-827-2847.

Dealing with snakes

COUNTRYSIDE: Last summer I opened a shed door to be met with a cloud of flies and the stink of rot. Upon investigation, my brother discovered three dead black snakes, one about seven



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feet long. All three of the snakes had their heads tangled in a roll of bird netting, the black plastic netting you throw over bushes to keep birds from the berries. I figure the more the snakes worked to free themselves the more they became tangled, eventually dying from the extreme heat inside the closed shed. On further reflection I believe that balled up bird netting, stuffed into openings in a hen house, might be a good way to trap snakes.

— Charlene Alcorn

What about rabbits?

COUNTRYSIDE: Love your magazine and have subscribed for many years off and on. In the older issues you used to have a section for rabbits, called The Rabbit Hutch or something. Wish you could add that back in again. I know of more and more people who are now starting to breed rabbits for meat, because of the economy and the uncertainty of the times. Seems like all the magazines are talking about chickens a lot but not many are writing much about rabbits, feeding them, foods you can grow at home for them (mangle beets?), butchering, recipes, etc. I started breeding for meat a couple of years ago and was hungry to learn and read more and more. I know several people who might subscribe if that was in there. Meat goats are getting more popular too, and hair sheep that don't have to be sheared. Those might be good articles or departments too.

I love the new color pages. God made colors for us to enjoy and your magazine is just a reflection of the colors in the world. It's beautiful! — Becky DeWitt

You bring up a good point Becky. Rabbit meat is a delicious product, their manure is great for the garden, and they won't wake up your neighbors like chickens might.

Do you raise rabbits? How do you do it? Do you raise them in the city limits? Send us pictures or schematics of your rabbit coop to: COUNTRYSIDE Editorial, 145 Industrial Dr., Medford, WI 54451; csyeditorial@tds.net.

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Don't landowners have rights?

COUNTRYSIDE: We continue to have problems with pipeline utility companies with easements not compensating us for damages when they come on our property. These companies either refuse to pay us or offer such a small amount that it would insult any landowner.

Sunoco filed a frivolous lawsuit in Ft. Bend County, almost 200 miles from our farm in Hill County. Sunoco has had a pipeline exposed on our property for five years and refuses to put 24 inches of cover on it per the easement agreement.

Atmos Energy has filed a lawsuit for us documenting that they were on our property. Our attorney had told us to do this to document our damages. They have not paid damages since 2006 even though they are on our property on a regular basis. Atmos will not stay on their easement.

Does anyone have any ideas on what can be done and if there is any organization to help us? Your assistance is greatly appreciated. — *Alvin Kaddatz, akaddatz@yahoo.com*

Raw milk article creates a stir

COUNTRYSIDE: Jerri Cook's assertion that asking a court or legislature to grant us the right to consume whatever we want (raw milk in this case) is a dead-end strategy seems a little too strong, as well as a bit beside the point. It seems beside the point because these kinds of rights are ours already, not granted by government. You know, The Declaration of Independence, the right to liberty and the pursuit of happiness, though law school education tends to wring that natural rights view out of students. Her view is a bit strong because we already have the legal right to consume things that are harmful, indeed deadly. Tobacco and alcohol come to mind, but Mr. Bloomberg has a longer list. Furthermore, her preferred strategy of working with regulators has its own



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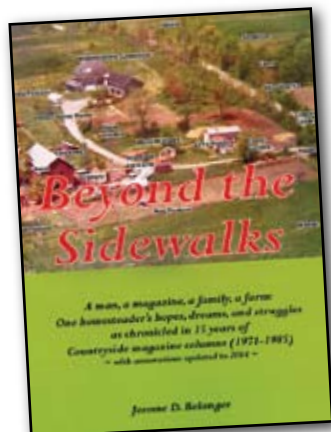
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problem of working with institutions largely captured by the conventional dairy industry. Perhaps an "all of the above" strategy would be useful. Pursuing the regulatory path does not require giving up the principle that our rights precede government. That is a principle that cannot be reiterated enough. — *Bill Jahn, Iowa*

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Alternative energy:

Off-grid refrigeration

BY DAN FINK

When buying appliances for a new home or a remodel, most people cruise the big box store looking for the right combination of features, style, color and — as an afterthought — an Energy Star sticker, then maybe a yellow Energy Guide sticker to at least be sure the model they want isn't one of the worst energy hogs out there.

Off the grid, though, your appliance choices will have a huge impact on how much your renewable energy system will cost, how easy it is to live with and how often you have to run a noisy, high-maintenance backup generator to keep your battery bank healthy. Most renewable energy installers recommend that you choose your appliances before you even begin planning your power system.

Back in the day, it was actually very common for off-gridders to order appliances like refrigerators, freezers, dishwashers and washer/dryer combos from Europe, and pay exorbitant prices plus outrageous shipping charges. Why? Because back then, U.S. manufacturers lagged far behind Europe in building efficient machines, and all that extra cost paid for itself in the reduced cost of solar panels, batteries and the rest of the power system. Fortunately, manufacturers saw this happening, the government started requiring some basic standards, and now many U.S.-made appliances rank among the best in the world for efficiency.

Energy awareness

To thrive when living off the grid, you must always be aware of how much energy you are generating, how much you are using and how

much you have stored. Remember: houses don't use electricity, people do. But you can design your house and choose what you put in it in a way that helps you reduce your energy consumption drastically. For example, most off-grid families cultivate the habit of doing chores that require a lot of electricity — for example, laundry, vacuuming, dishes — on sunny days when their battery bank is already nearly full and there's plenty of power coming in.

But what about appliances that you have no control over when they run? Refrigerators and freezers are essential ones. My electric fridge uses more energy daily than anything else in the house, and I had to expand my solar array to be able to run it. The fridge/freezer combo is reasonably efficient, using about 350 kilowatt-hours per year, which translates to about one kilowatt-hour per day. That's not a problem *most* of the time, but during extended periods of

snowy or rainy weather with no sun or wind, it keeps me scrambling. The unit is nothing fancy nor from Europe, just a standard Frigidaire from the local big box store, but I had to visit many stores, make lots of phone calls and do hours of internet research to find the most efficient model at an affordable price.

All refrigerators and freezers are required to have a yellow Energy Guide sticker (Photo 1) from the U.S. Department of Energy that gives you that kilowatt-hours per year figure, but keep in mind your usage may vary depending on the ambient temperature of your house. You can search their appliance database and even download spreadsheets for your own, more advanced analysis, from their website at www.energystar.gov. Go to the Product Finder search page, and have at it. From their spreadsheet, I selected my fridge/freezer sorting by both cubic feet capacity and kilowatt-hours per year, then compared with what was available locally.

Tricks of the trade

Most off-gridders are both satisfied with and proud of their lifestyle, and are eager to share tips and tricks with others. Internet discussion boards are an excellent place to get information and ask questions, for example my company's board at www.fieldlines.com. Anywhere you go, please search and read past postings before posting, as basic questions have probably already been answered...multiple times. Once you've done your homework, you are very likely to find free, expert advice online. Here are a few electric refrigeration tricks I've learned over the years:

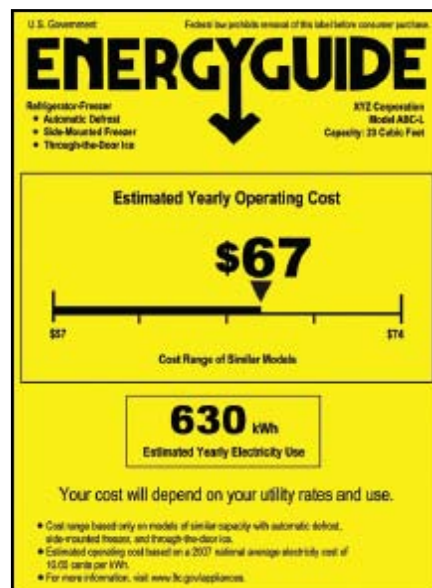


Photo 1: Energy Guide sample label for a refrigerator. Courtesy of U.S. Department of Energy

Try to avoid simple, energy-wasting design mistakes like locating the fridge right next to the oven and range, or even worse, right by the propane space heater or wood stove.

Avoid “side-by-side” refrigerator/freezer combos and through-the-door ice and water dispensers. They waste energy that you had best conserve off the grid.

Don’t be fooled by thinking a smaller refrigerator uses less energy. I frequently see tiny “dorm” refrigerators with only two-to-three cubic feet of capacity that use more energy than my 18 cubic foot model. Official government Energy Guide stickers are the bottom line in predicting energy usage.

Thermal mass is important in case your battery backup storage gets perilously low. Keep the fridge and freezer as full as you can, while still leaving space for air circulation. When I have extra space, I fill plastic jugs with water and put them in the back of each. The frozen ones are very useful in the jobsite lunch cooler, and the cold ones are great for drinking water. However, my favorite thermal mass in the freezer is big packages of local elk, venison and moose...

Don’t be afraid to unplug the fridge and freezer for the night if your battery bank is getting low and you won’t have sun or be able to run the generator until the next day. Since I keep a lot of thermal mass in there, mine can easily keep safe temperatures for 24 hours when unplugged, provided I am judicious about only rarely opening it.

Some folks have gone so far as to put the fridge on a timer, so that late at night when there’s no solar power coming in and nobody will be opening the thing anyway, it’s turned off. I’ve tried it, and it can help. But be *sure* to put a minimum-maximum recording thermometer in both the refrigerator and freezer compartments so you and your family don’t get food poisoning from thawed and re-frozen or overly warm food. The U.S. Food and Drug Administration recommends that the refrigerator compartment never get above 40°F,

and the freezer remain at zero °F or below.

Automatic defrost cycles use a lot of energy for 30 to 45 minutes every few days, which is usually not a problem. On mine you can even see the red-hot heating coils in the back of the freezer turn on. Unfortunately these cycles seem to come at the most inopportune times here (snowing, no sun or wind, generator won’t start), and there’s no way to select when they run. On older refrigerators, off-gridders used to disconnect the defrost heating coils and put a manual switch in, but with most modern computerized models that won’t work. For example with mine, cold air is pushed only into the freezer, and is then pushed down a plenum in the back of the unit into the refrigerator compartment. If that plenum clogs with ice crystals, over a few days the fridge goes to room temperature and the freezer to -20°F. Not good. The best option is to just unplug the fridge until you get some sun or can get the backup generator started.

Technical problems

When I finally moved to electric refrigeration from propane two years ago, I immediately had to deal with a variety of electrical issues. Modern refrigerators have computers in them, rather than electro-mechanical switches, and we all know how finicky computers can be.... Here are a few technical issues to consider:

Modern refrigerator computers are picky about power quality. If your house runs on a modified sine wave inverter (see COUNTRYSIDE, July/August 2014 issue, page 23), there’s a good chance your fridge computer will balk, with any number of mysterious symptoms and the possibility of damage to the fridge. Pure sine wave inverters provide excellent power quality and run your appliances more efficiently to boot.

Refrigerator compressor motors draw a high startup surge of power. For example, while mine uses at most 350 watts (during the defrost cycle), a 1,000 watt inverter wouldn’t start

it up, and the inverter shut down from overload. I ended up having to replace the inverter with a higher-capacity, pure sine wave model.

If you have other loads that use a lot of energy and/or have a high startup surge (for example, your well pump) be sure your inverter can handle all those loads and surges combined. If you exceed its limits, it may shut down until it cools off.

Many modern refrigerators also don’t like the Ground Fault Circuit Interrupters (GFCI) required by National Electric Code (NEC) in kitchen areas where water could be splashed. Mine has a warning about this right in the owner’s manual, and sure enough it wouldn’t run. It was plugged into a regular 120 volt AC outlet, but a GFCI outlet upstream tried to protect everything *downstream*, even regular outlets.

Code doesn’t require a separate, dedicated branch circuit for refrigerators, but NEC 110.3(B) says: “Installation and Use. Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling.” And chances are the instructions in your fridge owner’s manual say to use a dedicated circuit. A great idea if you have one available or are designing wiring for a new house, as it addresses both the startup surge and GFCI issues – but nothing is going to burn down or blow up if you can’t provide a dedicated circuit. Probably.

Propane refrigeration

I lived with propane refrigerators for 21 years, starting with an RV-size model (about three cubic feet of capacity) including a tiny freezer shelf, then moving to a “mid-size” 10 cubic foot unit (Photo 2) when I built my house. I am *so* glad to be done with propane, as by nature it comes with a number of problems, extra costs and inconveniences. But if you have a small renewable energy system or a limited budget, it may be your only option, and it certainly does work. A few issues you might run into are:

Gas refrigerators are quite expen-



Photo 2: Small, 3-fuel RV refrigerator. Runs on propane, with both 12 volt DC and 120 volt AC electric for backup. *Courtesy Dometic Group*

sive, with prices for a mid-size 10 cubic foot model (photo 3) starting at about \$1,200, and larger ones approaching \$3,000.

Larger propane fridge sizes can be problematic—some retailers recommend buying two smaller ones instead.

RV “two-fuel” or “three-fuel” fridge models (photo 3) that can be switched between propane and 12 volt DC or 120 volt AC electricity are a viable option, but not when running on electricity. They work fine burning gas, but have terrible electrical efficiency. That electric option might get you through in a pinch (if you have enough energy stored in your battery bank at the time) until you can hook up a portable propane bottle, but it’s a poor choice for everyday use.



Photo 3: Mid-size, 10 cubic foot propane refrigerators. *Courtesy Dometic Group*

Propane is expensive compared to solar electricity, with rapid and unpredictable seasonal price changes. Not to mention maintaining access for the propane truck after a deep snow when your snowplow truck threw a clutch.

There’s no defrost cycle, either manual or automatic. And as the “glacier” of ice crystals builds up on the heat exchanger inside, the burner uses more and more propane until you defrost the interior, while taking up more and more space as it creeps towards the door.

The real defrost “cycle” consists of shutting off the burner and letting it cool, cleaning the chimney, scrubbing the burner orifice with a toothbrush and rubbing alcohol, and putting big pots of boiling water inside to melt the ice, then re-lighting it. You can’t scrape or poke the ice off with sharp metal implements—if you puncture a heat exchanger tube, your expensive fridge will need an expensive repair.

Maintaining and repairing propane refrigerators is turning into a lost art. Only RV repair shops seem to have the knowledge, tools and test equipment to do it anymore, but on the bright side some of these offer mobile service calls to your location.

One tried and sometimes-true trick with a propane fridge that won’t cool is to empty it, disconnect everything, then turn it upside down (on its top) for 24 hours. This does work well occasionally, but not always, and is not exactly an easy procedure.

Old propane refrigerators made by Servel from 1933 to 1957 (photo 4) were recalled by the U.S. Consumer Product Safety Commission (CPSC) in 1990, after dozens of deaths from carbon monoxide (CO) poisoning in Canada and the U.S. occurred over the years. They will send you big orange “Killer Fridge” stickers to paste on the door as you duct tape everything shut, and if you provide a receipt from a landfill or recycling center that the unit was disposed of properly, they’ll send you a \$100 check plus a cost of disposal reimbursement. Tens of thousands of



Photo 4: Vintage Servel propane refrigerator ad. These fridges have been recalled due to carbon monoxide concerns, but properly maintained units from the 1930s to the 1950s are still in operation. *Courtesy Servel*

Servels have been destroyed.

The cause of those tragic CO poisoning incidents was simply lack of regular maintenance—the burners could clog with dust, debris, mouse poop, burnt moths and such, because of inadequate protective screens and infrequent use, especially in remote locations. Most of those old relics could have operated perfectly for another few decades with regular



Photo 5: A combination carbon monoxide and explosive gas detectors. *Courtesy First Alert, Inc.*

maintenance...and I have seen models from the 1930s still operating perfectly. When a propane refrigerator burner starts to clog, the odor is *very* distinctive (I’ve never smelled anything similar) and is detectable before dangerous CO levels are reached or CO alarms go off. Regular maintenance is the key.

If you have any gas appliances in your home at all, old or new, be *sure* to install combination CO/ propane detectors in every room where propane is used! (Photo 5)

Super-efficient refrigeration

The most efficient and reliable option for off-grid refrigeration is to go with a specialized DC unit that runs

directly from your battery bank and doesn't rely on a 120 volt AC inverter. These fridges and freezers were originally developed for transporting and storing vaccines in remote areas of the world. Some are available in 120 volt AC models also. All are very expensive, and once again a few issues often come up with their implementation, for example:

Chest freezers are very efficient because you don't open them very often, and most of the cold air stays in the tub by the food when you open the top. You can get a chest refrigerator too (photo 6), with pull-up baskets for all your goodies and energy usage at about 1/3 of a regular upright unit. If you can deal with the lifestyle changes needed for organizing your food, these are a great choice. Remember, though, you'll likely need a second one set to be a freezer. Some custom cabinetry and slide-out shelf innovation can do the trick to combine both, but that won't be cheap since you are buying two units, and hopefully you can do the cabinetmaking yourself. Check out the SunDanzer brand for a variety of options.

There are also excellent DC upright refrigerator/freezer combos on the market, but the price is also very dear. Sunfrost and NovaKool are popular brands. These units are roughly twice as efficient as standard refrigerators. Sunfrost custom builds each one for you, so a huge variety of colors and coverings are available (photos 7 and 8). They are available in 120 volt AC versions also.

DC units are available only in 12 volt and 24 volt models because of the compressor used. For a 48 volt off-



Photo 6: A super-efficient, 12/24 volt DC chest refrigerator. Courtesy SunDanzer

grid electrical system (which most are these days) you'll need to add a DC/DC converter that drops the voltage to 24 volts.

Beware of 12 volt DC, thermocouple coolers that can also be used as food warmers by reversing the polarity. They are very inefficient, and have difficulty maintaining safe temperatures. Fine for a camping trip, but not for a house.

It's possible to build your own super-efficient refrigerator, and both Novacool and Adler-Barbour offer component kits at about \$1,000 that you can install in your own insulated box (photo 9). These are often used in yachting applications so check marine suppliers for availability, and be sure to read the detailed construction instructions so you know what you're getting yourself into. And do keep in mind, a big part of the price of any refrigerator is the interior walls and components – with any do-it-yourself application, you *must* be exceptionally careful that the interior can be easily cleaned and sterilized regularly. If there are cracks where condensation can seep in and mold can start forming in the insulation, you have a health disas-



Photos 7 and 8: Super-efficient 12/24 volt DC upright refrigerator/freezer combos (also available in 120 volt AC), custom faced by the factory to match your kitchen. Courtesy Sun Frost




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Photo 9: All the components of a super-efficient 12/24 volt DC refrigerator in a kit with detailed instructions, you build your own box, shelves and drawers. *Courtesy Nova Cool Mfg.*

ter waiting to happen.

What's the best choice?

That depends on the capabilities of your renewable energy system and capacity of your battery bank, your preferences for size, configuration and style, and (unfortunately) your budget. My preference would be a large freezer compartment and small refrigerator compartment, but I was not able to find anything in an upright unit with that configuration. A SunFrost, either AC or DC, would've been great and is available in a half fridge / half freezer configuration, but the \$3,600 (plus shipping) price tag was far out of my reach. A pair of SunDanzer chest units would have worked fine, but the cost (\$1,600 plus shipping) was still too high, and I would've had a major cabinetmaking project on my hands. My house does have a couple of DC circuits in the walls, but if yours does not that



Photo 10: The author's plain old fridge from the big box store. It wasn't the ideal solution, but operates just fine off the grid and was very affordable. U.S. manufacturers now make some very efficient models. *Courtesy Frigidaire*

would be another complicated project and expense.

So at the end of the day, I settled for the most efficient standard model with a big freezer compartment available at the big box store (photo 10). Life is full of compromises...but I must say, after 21 years of propane refrigeration, it sure is nice to not hassle with defrosting and worrying about expensive propane deliveries. And those magic lights that come on when I open the doors for a midnight snack, and the automatic ice maker... priceless! 🍷

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By ANDREW JONES



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The woodshed:

One weird trick for chopping wood

It's all in the angle

DANIEL STRAUSS
LOCKPORT, NEW YORK

Spend anytime on the internet and you will see weird tricks for losing belly fat or saving on car insurance or some such thing. What I want to tell you is the weird trick for making wood chopping just a bit easier. We aren't going to cheat using a hydraulic wood splitter (of course if I owned one I wouldn't consider it cheating), but using wedges and a maul. Before I tell you this trick let's review chopping wood manually, in general.

First, it is best to set the chunk you wish to split on something hard like a larger piece of wood. You can chop directly on the ground, I often do, but you get the best transfer of energy by having the wood on a solid surface and not having the soft ground absorb some of the impact.

The next step is what I call "read the wood." You examine the chunk: first look at the bark, most bark splits easily, but some is like having a rope tied around the chunk and cutting the bark first on these types of tree stumps helps split them easier. Next look for limbs on the sides and knots on the top. The chunk usually splits harder where there are limbs emerging from the side or where knots show on the top of the chunk. Next look for natural cracks starting in the center of the chunk, splitting along these is usually easier. The straighter the grain of the wood the easier it is to split. Notice picture one, the wedge



is in a natural crack, and is avoiding the limb extending out of the left of the chunk.

I have found the first split on large chunks is easier if done with a wedge. Once you have decided the path of least resistance by reading the wood, place your wedge preferably on a crack and tap the wedge into the chunk.

You can use a sledgehammer, or

a maul. In case you're not familiar, a maul is an axe/sledgehammer combination. They come in various weights. I have both a six-pound and an eight-pound head and have recently seen one I'd like to get with a 10-pound head. Using the blunt side pound the wedge into the chunk. This will split the chunk. (See picture 2) Sometimes a chunk has such a twisted grain due to limbs you may need a second wedge to finish. (See picture 3.)

There are different wedge designs; the two I use are the simple narrow smooth "V" shaped kind with a wide blade, or a "V" shaped wider design that comes to a point. The blade type, I have found, works well for the initial split and the pointed works well if you need an extra wedge to finish the split. (Picture 4)

Smaller chunks and those that have already been divided in half with a wedge can be split with just a maul. Again, read the wood and plan to chop along natural cracks in the wood. Practice will make your aim with the maul better.

Now we get to the weird trick. An old man taught this to my father when he was young, he taught it to me, and now that I'm older it's time to pass it along.

When you chop by bringing the maul straight downward, tilt the blade about 30 to 40 degrees off of center so that when it impacts the wood, the blade is not vertical but at an angle. (This works for an axe as well.) This does two things: first



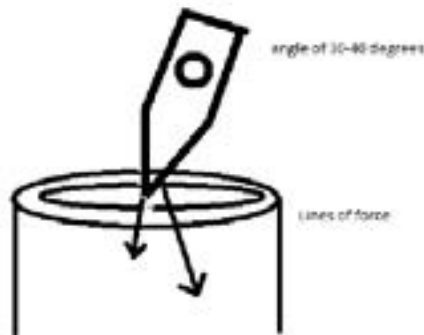
it lessens the chance of the blade sticking into the chunk; and secondly when the edge of the maul contacts the wood, the angled side of the blade forces the wood apart like a wedge, applying more force to one side of the chunk than the other. (See drawing 5.)

Experience is always best, so me describing it to you is not half as much fun as doing it yourself. Once you get the hang of splitting wood by hand, you'll probably find it fun.

Trick for chopping wood



Direction of movement



Using the maul will build upper body strength and is a good workout for the heart. What if you get a real twisted piece of wood that defies splitting? That is what chainsaws are for. So you can spend nearly a thousand dollars on a good wood splitter or save the money and split your wood the old-fashioned way with wedges and mauls. Nothing beats the satisfaction of looking at a pile of wood you have chopped yourself. 🌲

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DIY solutions for off-grid cooking

But first, have an Altoids mint

By JIM COBB

Quite often, utility services are among the first things to go in the wake of a disaster. Tornadoes, blizzards, even just a bad thunderstorm can all result in power lines going down, hopefully just for a few hours but sometimes it can take days before the lights turn on again. A few years ago, a friend of mine had a bad ice storm hit her area and it took three full weeks before power was restored.

If you have a wood stove, of course, cooking while off the grid poses little trouble at all. For those who do not, though, this can pose some problems. When the microwave oven and the electric stove top aren't options, how will you heat water for coffee or warm up a can of soup? Sure, if you have a patio grill you're probably still in business rather easily. You do realize you can cook more than just a rack of ribs on a grill, right?

However, if you lack a propane or charcoal grill and also don't own any sort of camp stove, you may need to get a bit creative when it comes to cooking.

Campfire cooking

Anyone who has done so knows the almost mystical quality of food cooked over an open fire. Even the humble hot dog just seems to taste so much better, doesn't it? A backyard campfire is surely a great option for off-grid cooking, provided you have the fuel and location for doing so. If you live in an apartment or condo, this might not be the best solution for you. For those who want to explore this option, I would encourage you to get some practice doing so now. There is just as much art as there is

science to campfire cooking.

Patio fire pits

In recent years, it seems almost as though a law were passed that requires any homeowner who has a patio to purchase a fire pit for it. These come in all sorts of sizes and configurations but, really, all they amount to is a campfire on your patio or deck. Again, as with campfire cooking, these fire pits require fuel and a bit of finesse when preparing the food. Something that makes cooking much easier is the addition of an old grill grate to the fire pit. If you or someone you know replaces their grill, save the grates. They work very well when stretched across the top of the fire pit, making it much easier to place pots of soup and such over the fire.

DIY brick rocket stove

If you have ten dollars to invest in the project, you can assemble a quick and dirty rocket stove that works very well. Rocket stoves, whether they are DIY or store-bought, are all essentially the same. They have a small combustion chamber at the bottom and a chimney of sorts for updraft. They are a great option for off-grid cooking because they use far less fuel than campfires or patio fire pits. For this project, you'll need 20 small bricks. Not cinder blocks or anything fancy, just twenty plain bricks. Patio pavers work great. You do not need to purchase special fire bricks for this project. The fire temperatures you'll reach will be far less than cause a brick to explode. You can find suitable bricks at any garden store and they should cost less than 50 cents per brick.

You'll need to cut one of the bricks in half. This is much easier than you



Brick stove layer 1



Layer 2



Layer 3



Layer 4

might think. Simply score the brick with a file, then use a hammer and chisel to break the brick along the scored line.

Find a flat spot in your backyard for the stove. You can do this right on the ground or on your patio, though I'd suggest you not place it on a wood deck. Start by laying the first four and a half bricks like layer 1.

Your next layer will look like layer

two. Please pay close attention to the placement of the other half brick you have. Then, layer three.

And, finally, the fourth layer:

You should have three bricks left over, right? Place one of them at the opening in the front of the stove to provide you with a shelf on which you'll place fuel for the stove. The fuel consists of small twigs and branches, about the size of a pencil or maybe a hair thicker. As I always recommend when you're building a fire, gather plenty of fuel and have it ready before lighting.

What I do is place a small handful of tinder, such as dryer lint, at the bottom of the combustion chamber. Feed a few twigs in through the front and drop in a lit match. The tinder should light easily and start the fuel burning within a couple of minutes. As the fire builds, feed in more fuel until the fire is hot.

Then, place the last two bricks on top of the stove, on either side of the chimney, like so:



Layer 5

This provides you with a stand for your cook pot. If you were to place the pot directly over the chimney, you could smother the fire. If it is fairly windy, you could angle those upper bricks a bit to create a windscreen.

With a strong fire burning, it shouldn't take much more than maybe five minutes to bring a pot of water to a rolling boil. Just be sure to continue feeding the stove so the fire doesn't get too low.

The beauty of this DIY rocket stove is you don't need to have a permanent home for it. Just have the bricks stacked in the corner of your garage or shed until they're needed. A downside, though, is that the

stove isn't insulated so you aren't going to have complete combustion of the fuel. This means that, over time, the chimney is going to fill up with charred fuel remnants. In other words, you aren't going to be able to cook a ton of different things, one after another, without emptying the charred sticks. However, this setup works great for heating water for coffee or cooking a pot of canned stew.

Buddy burner

This one has been around for quite some time and many a Cub Scout has built one or a variation of it. A buddy burner is simple to assemble, with all of the components readily available in the average home. You'll need corrugated cardboard, a tuna can, and some old candles or crayons.

If for some reason you don't have a tuna can, any can of similar size will work, such as for cat food or canned chicken. Start by cutting the cardboard into strips. The strips should be not quite as wide as the can is deep. The cardboard should be cut across the corrugation, so when you look down at the long edge of each strip, you see all the "holes" of the corrugation.

Next, begin wrapping those strips around the inside of the can. Start at the outer edge and work your way to the middle, adding strips until the can is completely full of cardboard.

Now, you need to melt wax for the burner. Old candles and crayons work very well. I've found one of the easiest ways to do this, without damaging any of my cookware, is to place a small pot on the stove, filled with a couple inches of water. Bring the water to a gentle boil. Fill an old soup can about halfway with broken crayons (paper removed) and/or pieces of candles and put the soup can in the water. Use a twig or stick to stir the wax as it melts.

Once the wax is fully melted, carefully pour it over the cardboard, working from side to side and front to back to completely cover and fill each of the corrugated holes. Once the wax has cooled and hardened,



A buddy burner, made from a tuna can, cardboard and wax.



the buddy burner is ready for use.

To light it, strike a wooden match and hold it just above the wax, until you see the wax start to melt. Then, lay the lit match right on the wax. Within a minute or two, you'll see a strong flame as the wax burns. To cook over the buddy burner, you'll need a couple of bricks to hold your pot above the flame.

To douse the flame, simply place a piece of aluminum foil over the burner and hold it down along the sides of the can.

What is nice about the buddy burner is you can use it indoors, unlike the other methods outlined earlier. All the buddy burner really amounts to is a large candle. If you find the wax is starting to run low in the burner, simply add more once it has cooled down.

Altoids tin alcohol stove

Altoids tins are almost, though not quite, as useful as duct tape to us preppers. We find all sorts of uses for them, from mini survival kits to candles. Here, we're going to use one for cooking. You'll need an empty Altoids tin, some perlite, a piece of window screen, and de-

Don't Buy Survival Food... Until You Read This!

Bad news...

There are some people out there who think folks like you and me are a bit "odd".

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The fact is, if you don't take action or if you stockpile the wrong foods, you could be setting your family up to starve. It sounds harsh, but the truth is too many people with good intentions are making critical mistakes with their food stockpiles.

MISTAKES LIKE...

- Buying MREs (meals ready to eat) with a 5 year shelf life (depending on where you buy them, they could be nearly expired)...
- Getting gross survival foods that taste terrible and are so high in salt, MSG and preservatives you could clog your arteries and get yourself sick...
- Or simply buying the wrong foods and leaving a critical hole in your meal plan, which means your family can become malnourished...

Well, I decided to stop worrying. Obviously, waiting for the government to give me a handout in a disaster just wasn't an option for me. And I was completely turned off by the crazy prices of survival food sold by most stores.

So I got in touch with my buddy Frank Bates and put my order in for his Food-4Patriots survival food kits.

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But what if you decide right now to secure your food stockpile instead? Just **imagine how much better you'll feel right away.** And if a crisis hits and your family asks, "What are we going to eat?" you'll calmly reassure them that they're safe and they will have plenty to eat.

Listen, I can't predict the future. I don't know exactly when or how a crisis will hit. But from everything I see, it could be soon and it could be a big one. That's why I really want you to get the same peace of mind that I do.

P.S. Got a call from Frank and you'll never believe who just tried to buy up his entire supply of food! You'll be shocked!

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natured alcohol.

Start by filling the tin with perlite, up to just below the rim of the tin. Perlite is commonly available at any garden center and is a soil amendment. Here, it is being used due to its absorbent qualities. Some folks like to pick through the perlite and use just the larger chunks for the stove. I've never had an issue just pouring some direct from the bag, without sorting through it first.

Next, cut a piece of window screen to fit over the top of the per-



Cut some metal window screen to fit.

lite. Round the corners a bit and cut it so it just slightly overlaps the tin's edges. The screen should be metal, not plastic. A piece cut from any old window screen you have sitting in the back of the shed should work nicely. If you don't have any available, you can buy a small window screen repair kit and use the patches from it for this project.

Place the screen over the perlite and use a popsicle stick or similar item to tuck the edges down between the tin and the perlite.

The fuel for this stove is denatured alcohol, available at any hardware store. In a pinch, you can use the fuel additive HEET or even rubbing alcohol. However, those tend



Once your bricks are layered insert the perlite-filled Altoids container.

to be "dirty" fuels and you'll notice more smoke than if you used denatured alcohol. Pour about three tablespoons of fuel right over the top of the perlite and screen. After sealing your fuel container and moving it away from the stove, just to be safe, drop a lit match on the screen. The flame will be mostly blue and might be difficult to see at first. Just a few tablespoons of fuel will be enough to bring water to a boil.

As with the buddy burner, you'll need a couple of bricks or something to raise your pot above the stove for cooking.

You can smother the flame by flipping the lid closed. However, this does result in unburned fuel staying inside the tin. While that shouldn't be much of a problem, personally I like to just let the stove burn off any remaining fuel. Bear in mind, too, that it is only the liquid fuel that burns, not the perlite.

This is the stove I keep in my primary survival kit, along with a small plastic bottle of denatured alcohol for fuel. I've found it works very well in many weather conditions and is much easier than trying to get a campfire going in the rain.

Even if you have a patio grill and/or a camp stove, it is best to plan multiple ways to cook food during a grid-down emergency. Whenever possible, strive for at least three ways to accomplish a basic survival goal. 🍲

DIY vehicle emergency kits

By JIM COBB

Torrential rain, ice storms, engine breakdown, blizzards, flash floods—all of these and more could result in you being stranded on the side of the road for hours on end. Where I live in the upper Midwest, one of the first things someone does upon buying a car is store emergency supplies in the trunk. It really isn't a matter of *if* you'll get stuck somewhere, it is just a matter of *when*. Taking the time to assemble and store a small vehicle emergency kit could mean the difference between a possible tragedy and nothing more than an inconvenience.

You may have seen pre-assembled vehicle emergency kits for sale in any number of stores. They aren't too expensive but you get what you pay for when buying them. Often, the contents are poor quality and cheaply made, increasing the chances the items will fail when you need them the most. Personally, I have had wrenches from those kits bend up into pretzels under just moderate use and flashlights that won't turn on even with fresh batteries. It is a far better idea to assemble your own emergency kit using good quality products.

Now, what should be in a vehicle emergency kit?

Let's start with the tools and gear you'll need to get back on the road as quickly as possible in the event of a breakdown. A small toolbox can

be purchased for just a few dollars. Fill it with:

- Screwdrivers (slotted and Philips) – various sizes
- Combination wrench set (SAE and Metric)
- Socket wrench with sockets
- Pliers – standard and needle-nosed
- Sharp, sturdy knife
- Duct tape
- Multi-tool
- Safety glasses or goggles
- Work gloves
- Flashlight or headlamp (with extra batteries)

Keeping with the repair theme, you should have a can of spray lubricant, such as WD-40, a bottle of diluted antifreeze, a can of Fix-a-Flat or the equivalent, and at least one or two quarts of oil.

Of course, a spare tire, along with a jack and tire iron, is common sense. Be sure to inspect your spare regularly to ensure it is properly inflated.

Remember, too, that even if you are unable to complete the necessary repairs yourself, someone who stops to assist you might have that knowledge and skill set but may not have tools with them. By having these basic tools on hand, you will be in a better position to help someone help you.

On the market today are several types of collapsible gas cans, made of durable plastic. Because they fold up, they take up very little space. If you run out of gas, grab it before walking to the nearest station. While many gas stations do have small gas cans you can borrow or purchase, Murphy's Law dictates that won't be the case at the station you visit. Never store fuel in your trunk long-term! That can lead to very bad things, such as explosions.

Moving on to survival and comfort items, first on the list is a blanket. I suggest using a wool or wool blend, rather than an actual "emergency blanket" like those sold by survival and prepper outlets. While those blankets work very well with trapping body heat, you'll probably find more comfort in using a soft fabric



material to curl up into as you wait for help to arrive. A fabric blanket can also serve as a cushion for your knees should you need to change a flat tire. A bottle or two of water and a few granola bars or other snack type food will keep you from adding hunger and thirst to your list of complaints.

While the odds are pretty good you'll never need to use them, I always suggest including fire making supplies in each and every survival kit you assemble. These items include one or two butane lighters, some strike anywhere matches, and a few fire starters such as tinder tabs or a pack of InstaFire. If you end up stranded for a substantial length of time, a small campfire can provide both light and warmth, as well as a degree of psychological comfort.

A complete change of clothes can be easily stored in a plastic bag and kept with your other gear. At a minimum, a pair of pants and an extra shirt should be included. If you accidentally spill fuel or other fluids on your clothes, or tear a giant hole in your pants, having extras to change into will be appreciated. Don't forget a knit hat and warm gloves as well, to help ward off chill.

If you are stranded someplace, it makes sense to have with you items with which you can signal for assistance. A brightly colored cloth or flag can be tied to your antenna, which is a universally recognized symbol indicating help is needed. Road flares are another great addition to the vehicle emergency kit. A DIY approach to flares is to use a snaplight, also called a glow stick, and a length of cord. Activate the glow stick and tie it to one end of the cord. Grasp the cord about two or three feet from the glow stick and spin the cord in front of you. This creates a large glowing circle, visible for quite a distance. Of course, this is only suitable for use after the sun has set.

Last, but by no means least, is a car charger for your cell phone. This might prove to be the single most important component of your vehicle emergency kit. Many people forget to charge their phone regularly and you don't want to be looking at 5% battery level as you're desperately trying to get in touch with AAA.

Most of these items, if you don't already have them at home, can be purchased inexpensively if you shop around. Tools and the like are often found at rummage sales for pennies on the dollar, for example. I cannot stress enough, though, that quality is key. Don't go on the cheap for tools and such. If you are staking the safety of you and your family on the items in this kit, spend the money to get tools that will last.

With the exception of the spare tire and jack, just about everything could be stored in a plastic tote, keeping it all in one place. Personally, I went to my local dollar store and purchased a laundry basket for this purpose. It works very well at preventing everything from getting scattered all over the trunk.

Taking the time to assemble and store a vehicle emergency kit will serve well to get you back on the road with a minimum of hassle and a maximum of safety. Be sure to inspect your kit on a regular basis, at least a few times a year. Doing so will ensure the emergency items will be there when you need them. 🚗



BY GAIL DAMEROW

What do you do if your well doesn't fill fast enough for normal household use? How do you get a building permit if the flow is less than local code requires? The answer to both questions is to store water in a sizable tank, or cistern, where the water will accumulate as it becomes available for use as it is needed.

Our household water is furnished by a well that doesn't draw enough water for a single start-to-finish load of laundry. The problem isn't insufficient water. The well steadily produces approximately 720 gallons every 24 hours. That's more than enough to satisfy our household daily average of 180 gallons.

By installing a 1,500-gallon storage tank, we are able to draw water from the well 24/7, using as much as we need during the day and making up the deficit at night while we sleep. We also have enough water to survive most any water emergency. Additional bonuses are having sufficient flow to satisfy the building inspector, plus qualifying for a reduced fire insurance rate.

While the 1,500 gallons would typically last our two-person household about a week, in a real tight pinch we've been able to stretch it to nearly a month. A larger household with more demanding water needs

Homestead water:

Water system for a low-flow well

would need a bigger storage tank. The accompanying "Estimating Water Use" table (page 33) offers a start in figuring out how much water your households uses each day.

Having decided we needed a cistern, the next decision was what type to install. Our previous place came with an above-ground wooden cistern that forever needed clearing of frogs, insects, dead rodents, rotting leaves, and algae. Besides, it was highly visible from the front door, and took up surface space we could find better uses for.

This time we wanted a sealed under-ground tank. We looked for something economical, durable, and tight. Plastic is a potential health hazard. Steel and fiberglass tanks are durable and tight, but expensive. Wooden cisterns are cheap, but tend to leak and eventually rot. Concrete is durable, tight, not subject to rot or rust, and relatively inexpensive.

In some areas you can buy a concrete cistern ready made. Another possibility is to construct your own. An online search for "how to build a concrete water holding tank" yields several sites offering step-by-step illustrated instructions. Wanting something that would go in fast, we opted for a single-chamber concrete septic tank, which required only minor modifications to turn it into a water storage tank.

We hired a backhoe to excavate a

hole near our well, deep enough to put the tank under 18 inches of soil, which in our area is well below the frost line. At that depth, the water doesn't freeze in winter, and remains cool and algae-free all summer. Farther north, the tank might need to be deeper to get below the frost line, and additional precautions would be necessary to protect pipes from freezing.

Modifications

We were lucky enough to accomplish all the necessary modifications and get the tank filled during dry weather. I say "lucky," because subsequently we installed a second tank at our barn, and before it was filled with water and backfilled with soil, heavy rainfall floated the tank out of the ground in a sea of mud. Getting the contractor to come back and reset the tank cost nearly as much as the initial installation.

Not all tanks are designed alike, so the required modifications may differ, but the basic concept remains the same. The tank we used had five openings. Since for our purpose we needed only three, we sealed off the unneeded two openings with concrete ready-mix.

Of the remaining openings, two were at the ends of the tank top. One would become our pipe chase, the other would accommodate a backup hand pump. The third opening, at

Estimating Water Use	
Use	Gallons
average per person	50-100/day
dishwasher	20/load
dish washing by hand	2-4/load
kitchen sink	2-4/use
bathroom sink	1-2/use
shower or bath	40/use
shower, low-flow showerhead	25/use
toilet flush	3/use
toilet flush, low-flow	1½/use
laundry, top load	40/load
laundry, front load	20/load
laundry, hand tub	12-15/load
<i>Livestock</i>	
Cow, milking	25-30/day
Cow, dry	10-15/day
Pig	3-5/day
Sow, pregnant	6/day
Sow with litter	8/day
Sheep or goat	2-3/day
Horse	5-10/day
Laying hens, 1 dozen	1½/day
Turkeys, 1 dozen	2½/day

the center of the top, was a large manhole — with a heavy concrete cover — which we use to access the tank for periodic inspection.

Since the manhole would be under 18 inches of soil, to improve access and also prevent surface water seepage, we surrounded the original manhole with a concrete collar extending four inches above grade. To keep soil, insects, and wildlife out of this extension, we made a second concrete cover. Both covers are heavy enough to be child proof, and in fact require a winch to lift.

An opening at one end of the tank houses the three necessary water pipes. One is the pipe that moves water from the well into the cistern. The second pipe moves water from the cistern to the pressure tank at the house. A third pipe serves as a combination overflow and vent — a precaution against excess water or air pressure building up inside the tank. The overflow lets surplus water run into a French drain (essentially a gravel bed), and has a T extension

as an air vent. The vent ends in an upside-down U, to keep out rainwater, capped with fine-mesh screen to keep critters from crawling into the pipe.

To accommodate these pipes, before filling in the pipe chase with concrete we inserted pipe sleeves consisting of lengths of PVC pipe. Using sleeves the next size up from each pipe's diameter easily accommodates the water pipes with no wiggle room for things to fall or crawl in around the edges. Around the pipe chase we constructed a concrete collar extension reaching above grade, and capped it with a concrete cover.

We wanted to include a water level indicator to warn us if the cistern is getting low. Electronic sensors are readily available, but we wanted one that would continue to work during a power outage. So we made our own. It consists of long, threaded rod with a toilet tank float screwed into the bottom, and is positioned to float freely without interference from pipes or the tank wall. It extends straight down into the tank through a length

of ½-inch PVC pipe that was inserted into one wall of the pipe chase collar as the concrete was poured.

A red surveyor's flag attached to the top of the indicator lets us see from a distance if the tank is full or if we're drawing down water too fast. When the flag starts riding low, we look for a leaky toilet, or a faucet or hose inadvertently left open. Or maybe it's just a warning that we did too many loads of laundry in a row, or watered the garden too extravagantly. Or maybe the well pump needs repair, in which case we start conserving water until it gets fixed. When the water level drops, the threaded rod is long enough to prevent the indicator from disappearing into the tank.

How it works

Being experienced in plumbing and electrical work, we were able to make all necessary connections ourselves. Otherwise we would have hired qualified contractors to make sure the system is hooked up right.

Basically it works like this: A
Continued on page 35

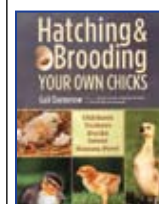
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Turkeys, Ducks,
Geese, Guinea Fowl



By Gail Damerow

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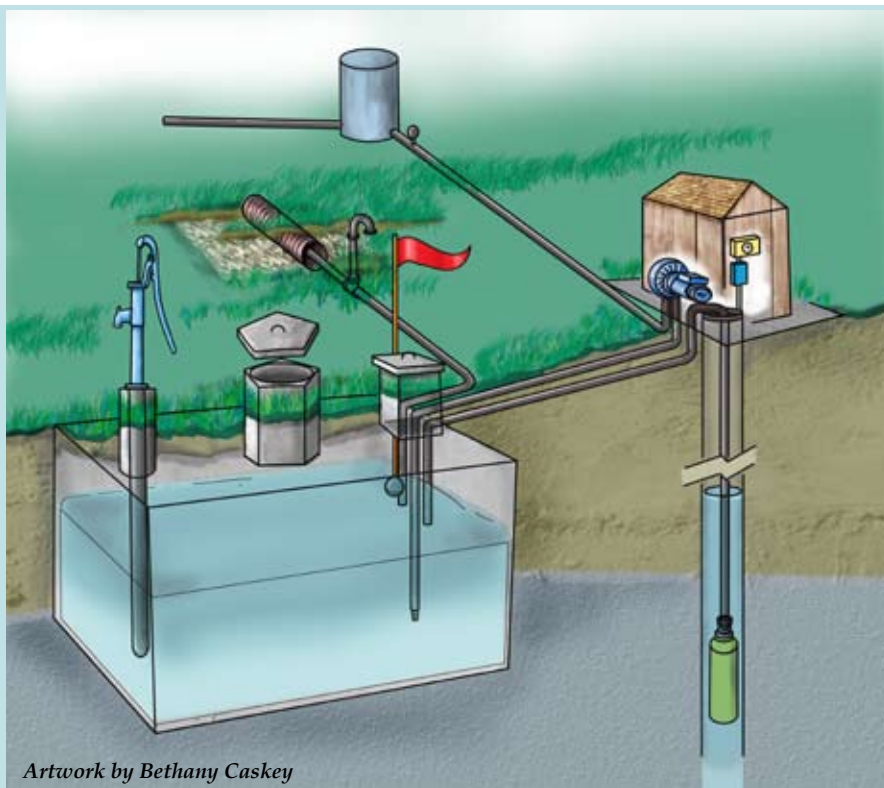
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Artwork by Bethany Caskey

Installing a backup hand pump

One of the disadvantages of having an electric well pump is that when the power fails, the pump stops delivering water. If the water from your well goes directly into your pressure tank, you have only as much water as was in the pressure tank when the power went out — unless you have a way to pump more water by hand.

When we installed the water storage system described in the accompanying article, we included a hand pump to draw water from the cistern during power outages. Doing so was a simple matter of putting a PVC sleeve through a hole at one end of the top of the storage tank, pouring a concrete column around the sleeve, and bolting a hand pump on top of the column with the pipe going down through the sleeve, as shown in the illustration above.

An alternative backup hand pump, which may be used without a cistern and regardless of the well's flow rate, is a deep well hand pump inserted directly into the well. Bison Pumps (bisonpumps.com), Flojak (flojak.com), and Simple Pump (simplepump.com) all make hand pumps that fit into a standard well casing right alongside the electric pump, provided the well is not more than 350 feet deep.

If pumping water manually isn't your thing, Simple Pump offers a solar motor that will do the pumping for you. And with any of these pumps you can skip the bucket brigade by using a potable water hose (available from RV suppliers) to move water directly from your well to your house. How cool is that?!

When installing a hand pump, consider how you'll be standing while you operate the pump. The column we constructed for our cistern pump raised it just high enough above grade to get a bucket under the spout, which meant awkwardly pumping the handle while bending over. If we had to do it again, we'd raise the pump high enough to work the handle from the more comfortable position of standing up.

As it turned out, though, power outages that required using the hand pump invariably occurred during stormy weather when no one was eager to be outdoors pumping and hauling water. Further, before the pump would draw water from the cistern it needed to be primed by pouring in a little clean water, which meant remembering to store a jar of water in the first place. And whenever we'd forget to bring the priming water, we'd have to run back to the house to fetch it — soaking wet, freezing cold, and wishing we'd spent the extra bucks on a self-priming pump.

Eventually our cistern pump failed, by which time replacement parts were no longer available for our particular model. Instead of buying a new pump, we now keep several jugs of clean water on hand for emergency use. For our livestock, we built a tanker consisting of a 150-gallon storage tank from the farm store strapped to small trailer made from salvaged materials. The tanker is easy to pull with a garden tractor, which is handy when it needs to be moved inside during freezing weather.

submersible pump brings water up from the well into the buried cistern. The pump is triggered by a timer to pump water for a few minutes every hour. By adjusting the frequency and length of the “on” time, we found that pumping for 2½ minutes every 75 minutes keeps the cistern full with little overflow.

To prevent pump burnout, a Pumptec monitor shuts down the pump should a problem occur in the well. The Pumptec diagnostic lights indicate what the problem is — whether the well ran out of water before the 2½ minutes were up, which happens occasionally during summer dry spells, or the pump needs repair. Additionally, a Square D HEPD (home electronics protective device) attached to the breaker box safeguards the pump from power surges during our all too frequent lightning storms.

A pressure tank at the house directly feeds our household plumbing. When the pressure tank calls for water, a jet pump delivers it from the cistern. Although our typical household usage is 180 gallons per day, the system pumps about 300 gallons every 24 hours. Initially the surplus water went toward filling the tank. Now it gives us the luxury of being able to do more than one load of laundry in a single day, water the garden, or even wash our truck.

When the power goes out, or if either pump fails, we still have water stored in the cistern to keep us going for the duration. To draw water from the tank, we installed a hand pump, as described in “Installing a Backup Hand Pump” on page 34.

As a final step before filling the tank, I climbed down inside and cleaned out the accumulated rainwater, stray leaves, and workmen’s footprints. Then we dumped in several jugs of chlorine bleach as a disinfectant, pumped the tank full, and let it sit several days to disinfect and to leach alkali from the concrete. After draining the initial water, we refilled the tank with fresh water, opened the valves, and let the pressure tank fill from the cistern. At last — we had water on demand! 🌿



Surviving a water shortage

Even the best water system breaks down now and then. Pumps fail. Electricity mysteriously goes off and stays off for long periods. Bulldozers diabolically seek and destroy water mains. Repairs can take days, during which conserving water may be required to assure a continuing supply.

Over the decades, the following measures got me through four major pump failures, as well as a summer living in the Arctic, where we hauled all our water in five gallon jerry cans. Collectively, these experiences made me realize how much water we humans normally waste and how quickly conservation can become second nature. Here’s a start:

- Position clean barrels at down spouts to collect rainwater. Dump the first flush, which is likely loaded with pollutants such as dust and bird droppings from the roof. Use rainwater for non drinking and non cooking purposes or to water livestock.
- Cascade by reusing water for tasks requiring progressively less sanitation: bath water to wash clothing, laundry water to flush toilets.
- Flush toilets by dumping rain, pond, creek, or cascaded water into the bowl. Since a toilet that flushes through the tank may need subsequent repair for leaky valves or a damaged flushing mechanism, restrict this use to one toilet if the house has more than one.
- Each person, on average, flushes five times a day. To reduce water loss to flushing, post this notice over the toilet: “If it’s yellow, let it mellow. If it’s brown, flush it down.” Confining use to a single toilet means it will be flushed more often than if multiple toilets were used, minimizing odor. (Keeping the lid down helps, too.)
- Wash dishes in a dishpan full of hot soapy water, rinse by soaking one minute in hot water with one tablespoon chlorine bleach added per gallon.
- To minimize water needed to scrub dirty pots, soak them overnight in rinse water left from dish washing.
- Serve soups, salads, and sandwiches that require few or no cooking pots, or prepare meals in easy-cleaning cast iron.
- Soak laundry overnight and wash by hand, use a scrub board, or keep a water conserving old-time wringer washer on hand for such emergencies.
- Take sponge baths, sitting in the tub to confine the mess.
- For a limited time, and with a few caveats, plants can survive on dish washing or laundry water that contains no bleach, softeners or boron (Borax). Phosphate is okay; it’s actually a fertilizer. Apply enough for deep soaking, then mulch heavily to retain the moisture. Do not recycle used water on potted plants or salt sensitive plants like azaleas and strawberries.
- To ensure sufficient clean water for toothbrushing and drinking, keep several gallons of potable water in the pantry or basement for water shortage emergencies. Refresh your stored water periodically, or sterilize the water and can it: Bring the water to a full boil, boil it for one minute, fill clean canning jars to the rim, and seal.

Jerri's soapbox:

Full metal colander

The feds want your water

BY JERRI COOK, J.D.
COUNTRYSIDE STAFF

A few years ago, I wrote about language embedded in the Clean Water Restoration Act of 2007 that would give control of nearly every public and private body of water in the United States, no matter where located, to the Environmental Protection Agency (EPA). Back then, someone commented that the whole idea that the Act was some sort of a federal power grab was pure “tin foil hat tom foolery.” They insisted that mine was the same ridiculous claim made by opponents to the Clean Water Act when it was first enacted way back in 1972. The commenter was sure I was too stupid to live, and I hated clean water. Well, welcome to the future, where as of October 20, 2014, the EPA is in control of all the water in the United States, wherever situated, and the long-held tradition of States regulating the natural resources within their borders is on the edge of obliteration. I’m going to need a lot more tin foil.

The Deep Horizon oil spill in 2010 was the worst ecological disaster ever in the Gulf of Mexico. The damage was widespread, stretching across the coastlines of several states. The oil and contaminants crept inland to contaminate ground water and inland wildlife habitat. BP Global, often referred to by its former name of British Petroleum, and its corporate cohorts have paid over \$3.5 billion in fines to the federal government for its violation of the Clean Water

Act. But when Louisiana, arguable the most affected state, tried to exact punitive damages from the corporate wrongdoers under its Wildlife Statute, the Fifth Circuit Court of Appeals denied them any relief, and sided squarely with BP Global, Halliburton, Transocean Deepwater, and several other multi-national energy corporations. On October 20, 2014, the United States Supreme Court refused to hear the appeal from the State of Louisiana. From this point forward, States must to defer to the EPA’s judgment concerning damages and how much or how little corporate

presumption in favor of a state’s right to regulate activities within its borders.

However, the Supremacy Clause of the Constitution provides that where there is a conflict between a federal law and a state law, the federal law will prevail. Generally, a conflict exists if an individual or entity cannot comply with one law without running afoul of the other. This allows for states to set stricter standards than the federal government when it comes to things like pollution control. The federal regulations are the minimum, but the state is free to add more requirements as long as there is no conflict. There is, however, another theory on which the federal government can override the right of the states to regulate themselves. It’s known as “occupying the field.” Simply put,

“If an adjoining state’s water is contaminated by fracking activities in another state, the damaged state has no right to seek certain types of compensation from the other state or the wrongdoers.”

polluters will pay. And they will only pay to the federal government. The EPA will decide how much, if any punitive damages, the state gets if a natural resource within their state is damaged by an occurrence outside of their state.

State governments have always controlled the natural resources within their borders that don’t fall under the management of a federal agency, like the National Park Service. This self-governance by the states is recognized in the Constitution. The Tenth Amendment reserves the rights not granted to Congress or the President to the States, and since the signing of the Declaration of Independence, it has been held that there is a strong

if Congress intended a law to be the only source of regulation on a matter, then it is the only source and not subject to any additional regulations by the individual states. This is why states do not have the police power to enforce federal immigration law. It is the arena of a federal agency, and Congress has repeatedly indicated that it intended for the federal law to occupy the field of immigration. It is this occupying-the-field principal that the Fifth Circuit relied on to find that Halliburton and its cohorts are correct, only the EPA can fine them for trashing Louisiana’s natural resources.

The Fifth Circuit decided that the language of the Clean Water Act of

1972 did not contain a savings clause that would have allowed for Louisiana to be compensated directly for punitive damages, leaving the state to beg the EPA for additional funds to clean up the still persistent mess. What's more troubling is the case that the court relied on to determine that states no longer have the right to control damage to their natural resources. In *International Paper v. Ouellette*, the Supreme Court held that Congress intended to occupy the field of interstate water pollution. Specifically, the federal court found that citizens of one state cannot sue another state for damage that occurs as a result of that state's damage to the other state's natural resources. The damaged state must seek recourse from the EPA in Washington, D.C. However, as noted in the 208-page *Petition For A Writ Of Certiorari*, the Clean Water Act was not intended to deal with offshore oil spills. Instead, Congress enacted the Oil Pollution Act of 1990 (OPA) to prevent and manage oil spills, and there is a savings clause in that piece of legislation. In fact, OPA clearly preserves a state's right to control funds and impose fines:

Nothing in this Act or in section 9509 of title 26 shall in any way affect, or be construed to affect, the authority of any State –

(1) to establish, or to continue in effect, a fund any purpose of which is to pay for costs or damages arising out of, or directly resulting from, oil pollution or the substantial threat of oil pollution; or

(2) to require any person to contribute to such a fund.

(c) Additional requirements and liabilities; penalties

Nothing in this Act, the Act of March 3, 1851 (46 U.S.C. 183 et seq.), 1 or section 9509 of title 26, shall in any way affect, or be construed to affect, the authority of the United States or any State or political subdivision thereof –

(1) to impose additional liability or additional requirements; or

(2) to impose, or to determine the amount of, any fine or penalty (whether criminal or civil in nature) for any violation of law;

relating to the discharge, or substan-

tial threat of a discharge, of oil.

The decision in Fifth Circuit and the refusal of the Supreme Court to hear the issue is bad news for those who are concerned about the potential environmental damage caused by fracking. If an adjoining state's water is contaminated by fracking activities in another state, the damaged state has no right to seek certain types compensation from the other state or the wrongdoers. Only an agency of the federal government can do that. This will make it much harder for opponents to slow or even regulate the fracking industry.



Similarly, if oil is being transported by rail or pipeline and causes pollution to a body of water in one state that in turn causes damage in another state, the damaged state cannot sue the other state for damages, nor can the damaged state exact any sort of punitive fine from the corporate wrongdoer. It will fall to the bureaucrats at the EPA to make such determinations.

Even if you're not all that concerned about water pollution, pipelines, fuel trains, or fracking, if you use any of your state's natural resources to sustain yourself, you might want to take a minute to consider the breadth of this decision. How would you feel about a federal deer hunting permit? Because the

right to control damage to their water resources has been truncated by the Fifth Circuit, the door is now open for other resources that were traditionally controlled by the states to fall under federal control. What if there was an infection of CWD in one state that somehow caused a massive outbreak in the deer herd of another? Instead of allowing the states to deal with the issue, Congress could decide that it needed to regulate the national deer population due to the threat, and now there is precedent for it. With friends like Halliburton and Global Petroleum, the EPA and other federal agencies are going to be nearly invincible in their rule-making ability.

Combined with the EPA's recent admission during a congressional hearing that they hired contractors who have secretly been making maps of all the bodies of water in the United States – public and private – the decision by the Supreme Court not to hear Louisiana's appeal is deeply troubling. The EPA is working on a new draft rule that would extend the definition of "Waters of the United States" to include any body of water that has a "significant nexus" to a navigable water. Once this happens – and with friends like Halliburton the EPA can make it happen – states and local municipalities will be powerless to control the natural resources in their jurisdiction for the first time in American history. Private individuals will be powerless to stop an official from the EPA from entering their land whenever the agency sees fit.

Brace yourself, folks. There's a constitutional battle in our collective future for control of America's natural resources. I don't intend to go into battle without the proper equipment, so I've decided to shed my tinfoil hat for a full metal colander. I was going to go buy a fancy one from the store, but then opted for a homemade one. After you've read the EPA's proposed rule at <http://goo.gl/SfgDTu>, you can trade in your tinfoil hat for a full metal colander, or if you like, I can show you how to make a real spiffy one with a cheese grater and a couple of paper clips. Either way, keep your eyes on the EPA. 🍄



Make it yourself:

THE SIMPLE DRYING RACK

The next best thing to a clothesline

BY DANIEL STRAUSS
LOCKPORT, NEW YORK

It was my sister-in-law's 50th birthday and my wife wanted to give her a practical gift of a drying rack for her laundry. I had made a large one a couple of years before and when she had seen it she wished she had one. On a 90°F day in August and wanting to do a project in the shade, I built this rack for her. Below are the instructions on how to make one. I have included many pictures, since the instructions can be difficult to understand without them. This rack is smaller than my original, but sufficient for most people.

Here is a picture of the completed rack (above). Let's look at it before we start to describe how to build it. It is made of three pieces: there are the top cross arms, an inner section and an outer section. The inner and outer sections are joined in the middle with bolts on the legs, making it work like a pair of scissors. The top cross piece is joined at the top and on the inside of the inner section with a bolt, making a hinge. At the other side of the cross piece, two long thin bolts act as pins that go through the top of the outer section and the top cross piece,



holding the rack open and preventing it from collapsing. The top cross piece can fold into the inner section, and the inner section can fold into the outer section of the rack, as shown in the next picture (photo 2).

Now let's get started on the details. You will need:

- (2) 1" x 2" x 8' boards
- (11) 1" x 2" x 6' boards (use good lumber, I could have bought cheaper lumber but it wasn't as sturdy and was rough cut)
- (2) 1/4" bolts about 3 1/2" long
- (4) 3/8" bolts 2 1/2" long
- (4) 3/8" nuts

(12) washers with 3/8" hole and about 1" in total diameter,

(1) 100 count box of 6" x 1 1/2" screws, and
14" of string.

Tools needed:

- Saw (circular saw works nice)
- Drill with a 1/8" bit, 1/4" bit, 3/8" bit, and a fine bit smaller than the diameter of the 6" x 1 1/2" screw (I had broken all of my fine bits so I cut the head off of a fine nail and used that as my drill bit—worked well)
- Screw driver (preferably electric or a drill with a Phillips bit)
- Tape measure
- Pencil
- A little duct tape

Cut the two 1" x 2" x 8' boards in half—use the tape measure to mark the center, and set them aside. (The boards I used were about 1/2" longer than eight feet, so I marked the very center.) These will be the legs.

Now cut (9) 1" x 2" x 6' boards, measure 2' 11" in from the end and mark them. You will have 3' 1" remaining. Set the 1" x 2" x 2' 11" in one pile and the 1" x 2" x 3' 1" in another. These will be the bars the laundry hangs on.

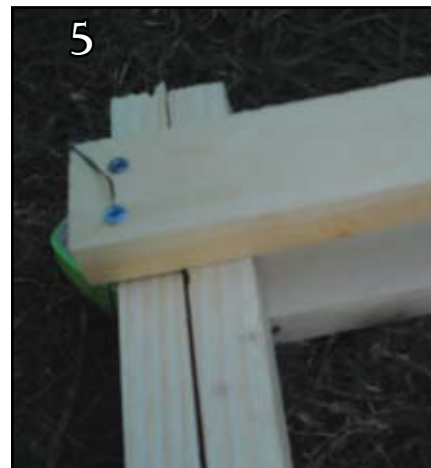
We will build the inner section first. Lay two 4' legs flat on the floor,

mark each end T for top and B for bottom. Measure from the bottom up 2', to find the middle of each leg. Then from the bottom, measure up and place a mark at 6", 11", 16", and 21". You should be 3" from the middle if everything was measured correctly. Now from the middle, continue to measure up toward the top making a mark at 3" above center, 8", 13", 18" and 22". This should leave about 2" to the top. Once both legs are measured, stand them on edge 2' 11" apart, and use your 1" x 2" x 2' 11" boards to measure at the top and bottom to make sure the legs are parallel, with marks facing outward. Don't screw in the bottom cross bar yet.

Once parallel, screw in the cross boards, making sure the bottom leg ends are even with one another. Starting at the top, place a 1" x 2" x 2' 11" flat, so it's centered over the mark you made at 22" above center. The boards should not hang over the edges of the legs, but should be even with or slightly inside of the leg edge. If anything hangs over, it will interfere with closing the unit up. Drill two holes on each side, one above another, and place screws in holes. Screw them through the cross board into the edge of the leg. Be sure to use two screws on each side of the wooden cross board. (The first one I made, I only used one screw, and the whole thing took to leaning to one side, two screws prevent it from flexing.) Don't tighten the screws too tight or you will split the wood. I found it was easier to drill one side and screw that side in then move to the other side. Install the other cross pieces the same way, working down, until you are finished with the 3" mark above the center. (It should look like photo 3.)

Now that you have reached center, flip the unit over so that the boards you have just installed are facing the floor. Starting from 6" above bottom, install cross pieces at the marks 6", 11", 16" and 21". You are finished with the inner section (See photo 4) for now.

For the outer section, measure 2' up from bottom to find center, mark and tape a washer to each leg at



center. (This is to be sure of spacing. When complete, a washer will be in between the legs. Notice photo 4 and the washer taped at center.) Lay the legs of your outer section on edge, washers facing your completed inner section, making sure the bottoms of the legs are even with the legs of the inner section. Take your 1" x 2" x 3' 1" boards and where the inner section has its cross pieces facing the floor, center the 1" x 2" x 3' 1" over top of its matching companion on the completed inner section. (See photo 5.) This prevents the need of having to re-measure the outer section legs since all the boards will match up anyway. If the cross pieces hang over the edge of the legs, it's okay, since this is the outside of the rack. Contin-

ue installing the cross boards like you did with the inner section, until you reach the center, then flip the whole unit over and install the cross pieces of the inner section that are now facing the floor. (From experience, don't get distracted and screw them into the wrong legs.) Once finished give it a try, see if it opens and closes. If so, remove the washers.

Close the unit up, making sure the bottom feet are even with each other, and the inner and outer sections are snug together and even. Find your center marks on the legs. At the center, drill a 3/8" hole through both inner and outer section legs. Slip a washer between the legs, line the washer up with the hole you just drilled, put a washer on the bolt, push the bolt through the 3/8" hole, add a washer to the bolt and put on the nut. You should have a washer on the outside, in between the legs, and on the inside. Hand-tighten the nut. Do the same on the other leg. It now should work just like a pair of scissors. (See photo 6)

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Door Opening (Side) 8.5 x 7.5"
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Fuel Coal or Wood
BTU Rating 80,000
Weight 152 lbs.
Cube 5.7

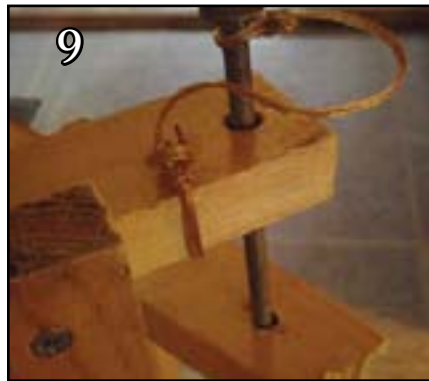


Now for the top cross arms.

You should have (2) 1" x 2" x 6' boards left. Take one and cut two pieces 23 1/2" long. Open the

rack up and lay these inside of the legs, on edge, making sure the ends of the arms are even with the top of the inner section legs. About 5/8" down from the top, center your drill and drill through the top of the inner section leg and through the 23 1/2" cross arm. Insert bolt and washers like you did previously, and place nut on. (See photo 7) Do the same for the other side. A problem now emerges—try closing the rack. The bolts you just added interferes with it closing. Close the unit the best you can, and with your pencil mark the legs of the outer section just below the bolt of the inner section. With your saw, cut off the top of the outer legs so they can now close as seen in photo 7. It should only be a little over 1" cut off.

We are ready to place two bars across the top section. Measure the



distance between the edge of the top cross arm where it touches the leg of the inner section, to the cross arm opposite where it touches the inner section. It should measure 2' 9 1/2", or close to that. From your last 1" x 2" x 6' board cut to 2' 9-3/8" long (or if you got a different measurement reduce its length by 1/8"). Starting at the top of the outer section (which should be facing up) look for the second gap down between the cross pieces of the outer section. Place one of the 1" x 2" x 2' 9-3/8" in this gap, aligning it so that it rests on the arms of the top cross arm section. It must not over hang; drill and screw in. Do the same in the next gap between bars. (See photo 8.) These will hold the two cross arms together and add a couple of bars to hang laundry on.

Now for the pins that hold the unit together so it can stand. Unfold the drying rack so that it is on its side; unfold the top cross arms and fold the unhinged end so that it is touching the top bar on the outer section of the drying rack. Drill a 1/4" hole through the top of the leg of the outer section, through the end of the cross arm piece. Insert a 1/4" bolt, flip over and do the other side. Just below or above the 1/4" bolt, drill a 1/8" hole on the outer section leg. Cut your 14" string in half and feed it through the small hole; tie it to the leg and to the bolt just below the head. Do the same to the other side. This is so you don't misplace your bolts when you store the unit. (See picture 9.)

Now that it is finished, stand the unit up. It should look like an X with a top cross bar. (Refer back to photo 1.) It is normal to have a 1 1/2" gap between the top of the outer section



leg and the end of the cross arm that the 1/4" bolt goes through. (As seen in photo 9.)

Time to hang laundry. The bars closest to the ground and the bars just above the middle are for short laundry, and the bars furthest from the ground or furthest from the center are for longer laundry. This whole project should only take an afternoon to make. The beauty of this rack is that if you break a bar they are easy to replace. Total cost from the big box store was \$47, including the exorbitant 8% New York sales tax. My sister-in-law loved hers; she puts it near her wood burning stove to dry her laundry.

The design can be scaled up. The first one I built uses 6' legs instead of 4', and holds more laundry. A final word of warning: be careful of who you show your drying rack to, or they will want you to make one for them. 🌸





With proper maintenance "Henry," the author's antique 8N Ford will continue to provide years of service in the woods and around the sawmill.

By DAVE BOYT

My wife, Becky, surveyed my latest acquisition, a nearly four-foot diameter by ten foot oak log that I had salvaged from a residence in town after it had died and a tree service company cut it down. The two-ton log was sitting on a trailer behind "Scotty," my '87 Chevy pickup. "How are you going to get that monster off the trailer and to the sawmill?" she asked skeptically. "No problem," I replied. "Henry and I can get it all right." "Henry?" she scoffed. "When is the last time you managed to get any work out of him?" "I just need to get him gassed up and choke the daylights out of him," I replied indignantly. "He'll pull his weight, and then some." Henry and I have worked together for over 40 years, so we pretty much know what to expect from each other. And yes, sometimes it involves choking...and kicking...and all manner of verbal abuse, to which "Henry," my 1951 8N Ford tractor appears indifferent.

Henry is a fine example of one of the most successful and versatile tractors ever built. Though not ideally suited to any specific task, the 8N is sort of the "Swiss Army knife" of small tractors. Equipped with a front-end loader and various other attachments, it can lift, haul, plow disk, mow, power a generator, and even cut firewood. Naming my equipment, by the way, is a trick I learned from Becky. She brings home stray dogs, cats—even turtles—and, before

The shade tree mechanic:

Old machines

Lubrication is key



Above: Many engines use an oil bath air filter. You should check the oil level twice a year, and clean out the gunk. **Below:** Apparently a mouse has been storing acorns in Henry's air filter! I have no idea how he managed to get them in there.



I have a chance to protest, she informs me that she had already named it. Somehow, that makes it official that it now belongs with us. So now, when I pick up a "new" piece of equipment at a farm auction, I have a name for it before it comes in the driveway. I have never understood how the same hopeful eyes that persuade me to keep a stray dog can give me the "woman look" before rolling heavenward when I proudly show her my latest acquisition.

Growing up on a farm in central Iowa in the 1960s meant that keeping old equipment running was a way of life. We didn't have duct tape or WD-40 back then, but we had a

plethora of bailing wire and used motor oil. Old machines, like their owners, can be temperamental and finicky, but once you understand them, they can be hard working and reliable friends. Maintenance is actually pretty simple, compared to their modern counterparts. With only a screwdriver and pair of pliers, you can replace the ignition system. Add a set of wrenches (American wrenches, none of that metric nonsense), and you can overhaul the engine. That's how they were designed. If you are fortunate enough to have such equipment, proper lubrication is the key to keeping it on the job.

The engine is the heart of the tractor, and certainly the most complex component. Check the oil level at least every 10 hours of use. The tractor engine has a dipstick somewhere on the side. If the oil on the dipstick appears milky white, it has water mixed with it. Change the oil and check it again after you have used the tractor a few hours. If the oil appears milky again, the head gasket is leaking, or the block is cracked, and needs repair. Change the oil (and oil filter) on a regular basis. I try to remember to change the oil twice a year, and the filter once a year. Check the oil requirements for your truck or tractor engine. Older tractors should have straight 30-weight non-detergent oil. Detergents in modern oil can loosen up sludge that has formed over the years, which can clog up oil lines and cause bearing seals to leak. There are also oil additives that are designed for high mileage engines. Lucas oil products have a good reputation for increasing the compression and stopping smoking.

Somewhere on the tractor is a dipstick (possibly several) for checking the transmission oil level. Check

this every month or so. The transmission oil on many tractors also serves as hydraulic oil (called “universal” transmission oil), so make sure you use the type recommended for your tractor. Water in the transmission/hydraulic oil can crack the hydraulic pump when it freezes, and replacement pumps for old tractors are getting hard to find. To check for signs of water, examine the dipstick for a milky fluid every time you check the oil level. In the fall, loosen the drain plug just enough to let some oil out. If water comes out, or the oil appears milky, go ahead and change it. A five-gallon



Above: I check transmission oil every week or so, but only change it every couple of years. You do need to watch for signs of water, as it can freeze in the pump and break the housing. Below: On many old tractors there are several drain plugs, and a couple of places to add oil. Make sure you don't miss any.



At least four times a year, you should use a grease gun to pump some grease into each of the tractor's grease fittings (“zerks”). Check with a manual to make sure you don't miss any.

bucket of oil will set you back around \$75, but that is a lot cheaper and easier than replacing a hydraulic pump. There may be several drain plugs, so make sure to drain all of them.

Although not part of lubrication, many older tractors use an oil bath air filter. This should be checked and cleaned out every month or so, and the oil replaced every year. The last time I checked Henry's air filter, it had acorns in it, no doubt deposited by an industrious mouse.

Finally, many tractors have a gearbox for the steering. Follow the shaft from the steering wheel. If it goes to a box with a bolt on top, remove the bolt, and fill with 90-weight gear oil.

Then there's the grease. Grease serves two purposes. It lubricates the part, and drives out moisture. If you don't have a grease gun, you can buy one at a farm or automotive store. Get a couple of tubes of grease, while you're at it. You don't need the high performance stuff, since it didn't even exist back when the tractor was built. The grease gun should fit onto the fitting (called a “zerk”) tightly. For the most part, simply add grease until you see it oozing out from around the joint. Wipe off the excess, and go on to the next one. I generally start at the front of the tractor and work my way back.

Wheel bearings (front wheels on tractors and trailer wheels) use special bearing grease, which comes in a can. To apply grease to the wheel bearings, you will need to remove the wheel. Make sure the tractor is in gear, the wheels chocked, and the brake set.

There should be a metal cover over the bearing that either screws off or comes off with persuasion from a screwdriver (sort of like opening a paint can). A “castle” nut with a pin (usually bailing wire) holds the bearing in place. Remove the pin, unscrew the nut, and the bearing should slide right out. If the bearing is dry and rusty, appears damaged, or has rollers missing, replace it. When I took the hub apart to photograph the process for this article, the rollers promptly fell out of the bearing, so it was a quick trip to the auto parts store for a replacement! Greasing bearings is a messy job, so have some extra rags handy. Put the grease in the palm of your hand and roll the bearing through it to work it into the rollers. Then wipe some grease onto the bearing surface in the hub. When re-assembling the hub, tighten down the nut just enough so that there is no play in the wheel when you wiggle it (usually finger tight), then re-insert the pin, using the closest gap in the “castle”. When you replace the wheel, by the way, do yourself a favor and put a little grease on the threads of the stud bolts so you won't have such a hard time removing the wheel next time.

Sometimes in the morning, I wish I had a few grease zerks so I could lubricate my joints, too. But as long as I can convince old Henry to pull his weight around the farm, I avoid the heavy lifting and give my 60-year-old joints a bit of a rest. With proper care, there is no reason why my grandson can't use Henry when he gets to be my age. Lubrication is the key.

As a final note, manuals for the most common tractors are available at farm supply stores or online. There are also a number of on-line forums where you can ask questions and benefit from the experience and wisdom of experienced mechanics. A couple of good ones are mytractorforum.com, tractorsbynet.com, and yesterdaystractors.com. 🌿

Author's bio:

Dave Boyt has a degree in forestry, operates a sawmill, and manages a certified tree farm in southwest Missouri. He has been working around tractors most of his life.

Wash with nuts...Soap nuts!

BY REBECCA SNOWDEN

Want to save a ton of money on laundry detergent and household cleaners? The long unnoticed soap nut is nothing but 100% natural and has a plethora of uses. Truly the *only* laundry detergent and household cleaner on earth that is *not* man made. They grow on trees, they are then picked and de-seeded before use. They are naturally hypoallergenic, odorless and do no damage to surfaces or fabrics. And there are countless ideas on how to use them, making them sustainable and versatile.

What are soap nuts?

Soap nuts are known worldwide by many names such as soapberries, washing nuts, wash shells, and many more. Botanical Name: *Sapindus Mukorossi*.

Very simply, soap nuts are the dried shells (or husks) from the soap-berry (or soap berry nut). These berries are the fruit from a quite unique tree species. These shells contain a substance called saponin that produces a soaping effect. Saponin is a 100% natural alternative to chemical laundry detergent and cleansers. It can replace many chemical detergents such as those containing sodium lauryl sulphate (SLS) that are becoming well-known by consumers for being a skin irritant and health hazard.

Soap nuts have been used for centuries throughout the world as a laundry detergent, as soap for personal hygiene, and as a cleanser with a plethora of other uses. It is most commonly used in India, China and parts of Europe. However, only in recent years has the soap nut and its many benefits made its way to the shores of the U.S. It grows primarily in northern India and Nepal. It grows uncultivated in poor quality soil



Soap nuts. Photo courtesy of Rebecca Snowden

and helps fight erosion, particularly in the Himalayan foothills. It also provides needed income to the local population.

Uses of soap nuts/berries

Laundry detergent: Place five to seven berries in a muslin bag, tie it closed and let it run under the water for a few minutes before adding your clothes. You can do up to seven loads of laundry with only five to seven berries! Removes dirt and odors, naturally. It's so gentle it's perfect for sensitive baby skin.

Household cleaner: Boil the nuts down with water and you get a soapy cleaning solution. I add eucalyptus, peppermint, tea tree oils to help with disinfecting and making a nice smell. It can be used to clean bathrooms, kitchens, wood furniture and more.

Car wash: Use up to a dozen soap nuts and allow them to soak in a gallon or more of hot water for 30 minutes or fill the bucket with pressurized water from your hose to release the saponin from the berries. The wash water can be reused on trees or plants.

Dishwashing & hand washing: Dishwasher: Put two to five berries in the soap door of your dishwasher and run as usual. Be sure to add white vinegar as a natural rinse aid.

Glass cleaner: Add two tablespoons of white vinegar and two tablespoons of soap nut solution to a 16 oz spray bottle of water. Add several drops of



Soap nut tree. Photo courtesy of Jeff McMillan

essential oils for smell. Shake well.

Shampoo for humans and pets, body and face wash, dandruff treatment, shaving cream...

And the list goes on and on!

The benefits of soap nuts

If you're not yet convinced of their benefits keep reading:

Sustainable: It's a renewable resource, easily grown organically.

All natural: No funky or harmful ingredients.

Affordable: They can replace multiple cleaners, and last longer.

Reusable: Each berry can be used up to six times before it's spent.

Not actually nuts: They're totally safe for those with nut allergies.

Gentle: Their mild nature won't damage delicate clothing or surfaces.

Front-loading friendly: No suds are perfect for high efficiency machines.

100% biodegradable and safe for gray water systems.

You can even grow a soap nut tree yourself!

Where can I buy soap nuts?

A small family owned and operated company, Wildroot Naturals. Wildroot Naturals uses 100% organic, Fair Trade berries. 450 Seabreeze Dr, Indialantic, FL 32903; 1-321-265-0855; www.wildrootnaturals.com. 🌿

The garden:

Apple orchard leads to organic business

By KEVIN GEER

I started this project when I moved to Northern Baja California where I live on a small 15 acre ranch. My ranch is located in a gated community of like-sized lots, the majority of which are used as weekend retreats for people escaping from San Diego or Tijuana. I'm located just a few miles from the international border with California, about half an hour east of the sleepy little town of Tecate. The elevation is just under 3,000 feet, allowing for real seasons with some snow in the winter. The land is made up of rolling hills and valleys dotted with live oak, manzanita, and sage. Water is drawn from each ranch's own well, with varying degrees of success. Mine is "hand-dug" and about 35 feet deep. It allows me to irrigate one to two acres of vegetables with enough water left over for the animals (20 Watusi cattle, eight horses, two Great Danes and several working cats and chickens) and two houses. With the garden getting the lion's share of the available water, I conserve as best I can by mulching heavily with oak leaf litter and livestock manure. The garden is planted in standard rows using a basic drip line system. Last year I added colored plastic row covers in an attempt to extend the water usage even more. The idea behind the "colors" being that they can add up to 20% more to the harvest of veggies like tomatoes (red plastic), and melons and cucumbers (blue plastic).



The garden is covered with colored plastic row covers.

I used the regular black plastic as well and didn't notice much difference in yields between the various colors but, admittedly, it wasn't set up in an organized way to test the idea. One thing that was apparent was the weed growth. The lighter the color, the more weeds. The problem is that after the season is over you have a lot of plastic that can't be used again and must be disposed of... It did save water, about 20-30% less water usage than an uncovered row. In the West, it's *all* about the *water*.

When I first moved in and started working on the garden plot, a neighbor noticed my interest and commitment to growing some veggies; most ranches here graze livestock on their property. So he stopped one day and asked if I could stop by his place sometime and take a look at his two acres of apple trees. He planted 900-plus trees some five years previous and had yet to harvest a single apple! I mentioned that I knew very little about apples but would be happy

to take a look. So the next week I stopped by and as his worker walked me through the orchard, explaining how they "got to where they were" a few things were immediately obvious. The trees had never been pruned! The dripline system looked like one of those kits they sell to people who don't garden, and there was a general lack of knowledge about fruit groves and their care. When I asked the worker why he thought they hadn't harvested any apples yet, he answered he was sure it was because when they planted the trees, it was the wrong time of year! I remember thinking at the time, well, the good part is that I do have some knowledge that can help immediately, the bad part being these guys needed a lot of help that I wasn't qualified to provide. So the next thing to do was to go online and do some research about apple tree cultivation basics. Doing this research I came across several colleges that offered Fruit Grove Management courses that offered certificates upon graduation. Knowing this I met with my neighbor and proposed the following; if he'd be willing to pay for half the tuition fees, I'd cover the other half and upon completion of my studies, would apply my knowledge to his orchard, working as a consultant, and take a percentage of the harvest profits for the first three years. And so began our collaboration.

Looking back now, there were many difficult moments as well as



"Working cat" takes a break.

levity and fun. There were serious financial decisions like tearing out more than a quarter of the trees to replace them with a more appropriate variety for our climate. I received some good advice and a lot of help from C&O Nurseries in Washington State that actually bore fruit. I'd say my funniest memory was the time we went through the orchard for the first pruning. With pruning shears in hand and my neighbor right behind me, each tree's trunk was cut from a bushy four to five feet to a pitiful looking stump of about 18 inches. With every cut I would hear a groan followed by a sigh. This went on for the first 20 or so trees until I finally suggested that it would be better for all concerned if he went inside and waited until I finished before coming back out!

So, after getting the right trees planted, and everything appropriately pruned, with a proper drip line system, we're ready to start good basic orchard care, waiting for our first flowering. We settled on four varieties that flower late in the season due to the fact that we tend to get night freezes late into the year (one year we had a night freeze during the first week of June!) so Golden Delicious, Roma, Braeburn, and Red Chief give us a good variety and late season blooming. Our flowers started opening the last week of March and continued through the end of April. On those late freeze nights we put out our own, modified, version of smudge pots that slowly burn sawdust to protect against damage from the cold. This has worked well for us and we come through the flowering period with very little frost damage.

Now we're into the growing sea-



Drip lines and cups to deter birds.

son. Since there are no other growers in or around our valley, we have no infestation problems from neighbors' plots and no codling moths. Our major predation problem is varmints — gophers, small birds, squirrels, and rabbits (in that order). The gophers can be a real nightmare. The amount of damage they can do in one night is incredible. When I researched gopher control on the Web, I found some good (and expensive) options for a tractor attachment with poison baiting. The price was unrealistic and not organic, so we needed new options. I did notice that with the cats on my ranch there was no gopher, squirrel or rabbit damage in the garden. None. So I suggested working cats for our varmint problem in the orchard.

We find that a minimum of two cats per acre are needed to keep the orchard basically free of gophers, which tend to appear early every spring. The cats clear the orchard nightly and have become a good and inexpensive way to manage our varmint problem.

Now for the birds. They're bold and manage to flit away from the cats just before being caught. The most frustrating bird damage comes when the seedlings are just sprouting. The birds hop by, cut the sprouts just above ground level and leave the dead seedling there. I started using plastic cups and metal "stays" (from the dripline) for seedling protection

(it keeps ants off too). Once the seedling has one or two sets of leaves, I can remove the cup and the plant is big enough to be bird-proof.

So now we've made it to the small fruit stage. We thin the fruit by hand and have a small amount of weeding to keep the orchard passable. We use a weed whacker to keep the weeds and green manure down. We plant a dry climate clover mix as a cover/green manure crop. Sometime during the last week of August the crop was ready for the first pick. Our first year came in at just under one ton! Success, sort of.... So, what do we do with one ton of apples? Actually we were able to sell some of the harvest to small, local markets. Unfortunately the price was the same the stores were paying for their commercial fruit. In Mexico, it's extremely difficult to find a market for high quality organic produce.



Green apples



Red Chief apples

Serendipitously, about this time my best friend Mike was doing some work at a local spa named Rancho la Puerta (RLP). He was leading nature walks for RLP guests where they learned about local edible and medicinal plants and herbs. When I mentioned our apples, he put me in contact with RLP's Guest Services



Rancho la Puerta

Manager, Martin Cortizo. Martin had been looking for a local apple supplier for some time, so our first meeting was the beginning of a great, ongoing, client/supplier relationship. We immediately started supplying apples on a weekly basis. Now, RLP has its own gardens on site for their fruit and vegetable needs called *Tres Estrellas* (Three Stars). They grow most of their produce needs, but not all. They use a variety of organic farming techniques as well, with the goal of creating a sustainable system. Water limits keep Tres Estrel-



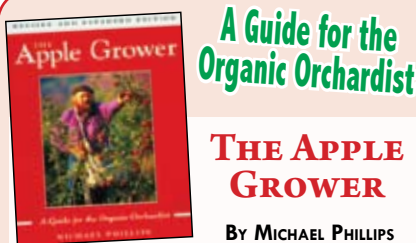
Red mulch is used in the garden.

las production levels lower than RLP needs. So during the weekly deliveries of apples I had a chance to speak with the chefs about their vegetable needs, brought in some samples and started including vegetables with the weekly deliveries. One of the things I like most about working with RLP is having access to the chefs. Every week they're excited to see the produce and talk about what I'll be picking for the next delivery. At the end of the season, Martin organized a meeting incising himself, the chefs

my partner and me. I brought my favorite seed catalogs to review with the chefs and plan for the next year's crop. Martin gave us a tour of RLP and a little information on their history and mission statement.

RLP was founded in 1940 by the Szekely family and is considered one of the founders of the modern fitness revolution. Their purpose being to "renew your mind, body and spirit. Retreat from life's stress and distractions on a healthy vacation that empowers your true self. The Ranch encourages integrative wellness for women and men of all ages and fitness levels through exciting, energetic fitness options, delicious organic cuisine, and pure fun and relaxation.... All in a tranquil setting in the shadow of Baja California's mystical Mt. Kuchumaa." *Travel & Leisure* magazine has named RLP as the World's Best Destination Spa for two years in a row.

Much has changed with the food served at RLP since it's founding in 1940. And yet, in many ways, little has changed as Deborah Szekely will tell you. "Food has been a driving force in my life. My mom was V.P. of the New York Vegetarian Society in 1926 when I was four years old. Lack of fresh fruit and vegetables during the



Apples represent "organic's final frontier" for many backyard and commercial growers. The number of insect pests and diseases that can plague the popular fruit have made a completely organic approach seemingly next to impossible. Yet despite the challenges, it is possible to grow healthy, flavorful apples with little or no need for synthetic chemicals. In *The Apple Grower*, author and organic orchardist Michael Phillips combines the forgotten wisdom of our great-grandparents with the best research and techniques available today. This new, colorful, fully revised and expanded edition features much new information on cutting-edge topics. **343 pages, \$40.00**

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Some of the Watusi cattle and boxes of produce served at the spa.





Source: ESRI John Blanchard / The Chronicle

Depression drove us out of a comfortable life in Brooklyn to a grass hut in Tahiti. My youth was basically a road map on which my parents and other health seekers were always looking for the most perfect climate with the greatest abundance of glorious fresh fruits and vegetables." When the first guests arrived at RLP, Deborah

recalls, "I did everything. The only items we bought from the store were sacks of potatoes, rice, onions, and beans. Everything else we grew. We learned together my guests and I. It was learning 'from the bottom up — the hard way,' but the most effective way. Three times a day our guests sat down on benches on long wooden tables under two arching oak trees and asked 'What's to eat?' I realized that our food, because of its simplicity, was becoming part of who I was. Fridays were especially fun. I asked guests to share their favorite recipes, then we'd put our heads together and try to 'de-calorize them.'

"From the beginning we experimented and tried every health discipline and diet theory that you still hear about today: bean sprouts and acidophilous milk, total fasting, interval fasting, the mucus free diet, morning walks.... Today, every 'new' diet plan is *deja vu* to me. The most satisfying shift has been so many cooks return to finding and treasuring sources for local foods."*



Leo the dog takes a break with the author.

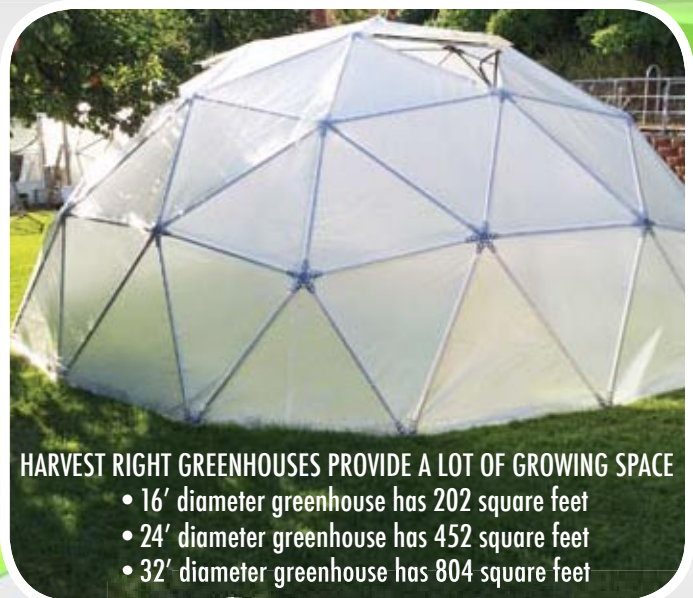
That chat with Deborah Szekely gives a pretty good idea of what RLP is all about. I share their love for local, fresh, organically grown fruits and vegetables. And look forward each year to finding new and different varieties to plant in the next year's garden. The catalogs are just starting to arrive now and I'm anxious to start planning. 🌱

*Resourced from a blog post by Katherine B. "Origins Of The Ranch, Part XIX" August 2, 2014

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Homestead business:

Erin Pearson –

Farming holistically on a small scale

By HEATHER SMITH THOMAS

Erin Pearson has raised animals all her life and has been farming with her husband since 2002 near Castleton, Virginia. She began using holistic management principles beginning in 2011. “I have always been environmentally sensitive and involved with Natural Resources Conservation Service (NRCS) since 2003. This farm has been chemical-free since we’ve owned it. I now have a cow and steer operation, raise meat chickens (and sell eggs on a small scale) and we also have horses, and goats for milk and brush control,” she says.

Her farm is small, just 32 acres, but something she can readily manage raising multiple species of livestock. “I can do it mostly by myself, with help from Heather, my 12-year-old daughter, my husband Marvin and son Clayton helping with things like hay and grain deliveries and building projects.”

Erin took a course in holistic management when Holistic Management International (HMI) offered a pilot project in her area in 2011. She was grateful for the one-year free program. “I was very pleased to be in the group, enjoyed it, and benefited greatly from it. The group has gone on with this program, and my life has gone a little bit different direction now, but it got me started – and I feel very lucky about that,” says Pearson.

She’s told a number of people about it, and tries to promote this program. “It can help people a lot, even just in the decision-making aspect, whether or not they are on a farm. It can help you see other alternatives



The Pearson family left to right: Clayton, Erin and Heather. Not pictured: Marvin.

and keep an open mind when making decisions, and teaches a person to be a little more flexible. These are things that many of us really need,” she says.

“I’m not using as many of the work sheets, etc., as I did in the beginning, but I monitor my pasture growth, rather informally, and do rotational grazing. That has been the best thing, for me – really intensifying the grazing. I was doing rotational grazing before, but it was based on local NRCS guidelines. Those guidelines had me using four big pastures but now I have more than quadrupled that – depending on the year, the season, and grass growth,” says Pearson.

“I am much more flexible than I used to be, with this. Whenever something challenging comes up I just deal with it and don’t get as worried about it, because I now know that whatever I’ve done or haven’t done, I can fix it. It’s easier to just go with the flow and be more relaxed and not as rigid,” she says.

“I actually need to go back to the question and answer sheet right now because I have a couple of new issues

I need to figure out. I haven’t been mowing any of my pastures since I started the holistic management, and we’ve had a bunch of young pine trees expanding into one of my really nice fields. I’ve been trying to hold off on mowing it, hoping to get adequate fencing to hold the goats so they could eat the trees off, but the trees are getting ahead of us. I was waiting, and my husband kept saying we just need to mow it. Finally I agreed that it needed to be mowed,” she says.

“We have some other fields that are being invaded by pine trees also, so I need to figure that out. Building the perimeter fence is my biggest goal this year. We’ve had old fences around the place for 10 years, enough to hold the horses and cows as long as they have food, water and salt; they haven’t pressed the makeshift fences. But I have other species I want to integrate into the grazing. We already have poultry and goats, and we have guardian dogs with the goats – so I need our perimeter fences to be dog-proof in order to rotate all the animals,” she says.

“I have one frustration I haven’t yet been able to figure out. I have several nurse cows raising extra calves; they raise each year’s crop of calves. I would like to have one big flerd (with all the animals grazing together in the pasture rotations) with the chickens following, but I can’t put the nurse cows back with the steers after they are a year or two old because they go right back to nursing the cows again. One cow has some three-year-old steers that started nursing her again when I put them together! These are Jersey cows and very motherly and they don’t mind if the big steers nurse

them. So I have to continually keep them separated." Currently she is trying to work out a solution for this problem.

"The animals always present us with various challenges, including some challenges that we've never encountered before. For instance, I have five working guardian dogs and they are wonderful, but recently one of the females started fighting with the other females. So now I have to keep her by herself and I am still trying to resolve that problem," says Pearson.

The holistic management fit perfectly with what she wants to do. "I have always tried to do everything 'natural' and do what's best for the environment as well as the animals. I want to help improve the land," she explains. Improving the land also improves the productivity and health of the forage, and the health and nutrition of the grazing animals.

"The question and answer worksheets have helped me think things through and be able to more clearly see if something is a negative or a positive or whether it will actually be beneficial," she says. It's easy to get into a rut or habit of doing things a certain way and it may take a process like this to open our eyes to different possibilities.

Raising steers for beef

Currently she has two nurse cows raising calves, with another cow soon to calve. "The first time I bred the cows I borrowed a bull. Then last year I bought a young bull to breed them, and then butchered him for beef. This year I am keeping a young Jersey bull just long enough to breed the cows and then I will castrate him," she says.

She buys the extra calves from local dairies. "They are predominantly Jersey steers that I buy when they are a couple days old, and then I graft them onto the nurse cows. The Jersey steers are wonderful. They don't produce a large amount of beef and I have to keep them close to three years to get them big enough to sell as beef, but they don't cost me much. They are cheap to buy, and I don't feed milk



Erin with the family's new cowdog pup.

replacer, and hardly any grain. They are raised on pasture and a little hay, so they don't cost much to raise." She sells them as freezer beef to people locally, who hear about it through word of mouth, and she plans to expand this part of her program with a few more nurse cows and calves in the future.

Selling the meat to friends and neighbors has worked very well. "They love the meat. Jersey meat is tender and tasty. Jersey steers may not be a volume product (these steers don't grow as big in a feedlot and that's why they aren't worth much to sell as feeder calves) but it's certainly a quality product," says Pearson.

"I am now experimenting with crossbreeding in my Jersey cows, to get a little harder nurse cow. The Jersey cows are great but they put so much into their milk that they lose weight. I don't like to feed a lot of grain so I am looking at doing some crossbreeding, to not have straight Jersey cows," she says.

"One thing I like about holistic management, that makes so much sense, is the spring calving, in sync with nature. Then the cows can calve in decent weather and hit their peak lactation when the grass is at peak growth and nutrient value. Unfortunately this last year my cows calved in October and we had a "real" winter. So they had a rough time, and I actually put blankets on my nurse cows—just to help them stay warm and keep weight on," she says. The blankets helped keep them healthy and happy. This next year they will calve in the spring, and that will help.

Hay helps the pastures

Little by little, Pearson is getting her challenges resolved. "I have it all down to where it is getting easier, labor-wise. We feed hay once a week instead of every day. We simply put round bales out in the pasture and all the animals self-feed. I try to figure



Heather Pearson and one of the family's heifers.



Clayton Pearson rides one of the horses while his sister Heather, dogs, and a goat watch the action.

out how much they need for a week. Usually we put out extra hay if it's going to storm, so we don't have to do anything during the storm, but we messed up during one storm this past winter and didn't have the hay ready—and we were out there with the tractor in all the snow," she recalls.

The bales are placed in different areas around the pasture, and this has helped the soil fertility—adding nutrients from the litter of any wasted hay and the manure from the animals grouped around the bales. "This is another thing that we've completely changed, in how we do things. The

NRCS recommendations were having me take all the animals off all the fields during winter, and put them in a drylot. So my poor horses were stuck in a one-acre lot for several months—usually January through April. The idea was that the animals would damage the fields. The NRCS does great work, and is a wonderful help for farmers to start with more environmentally friendly process. The NRCS was a stepping stone for where I am now, and they have great, passionate and knowledgeable people working for them," says Pearson.

"With the holistic management ideas, however, I put the hay out in the fields for them to eat. I still rotate pastures, but do it with large pastures. This has been a big change, and the animals have also benefited because they are moving around and not confined in small areas. They are also grazing a little, on whatever grass is left out there. Last year I didn't have to feed hay until February because I had enough grass still in the pastures, rotating the animals around the pastures. But that doesn't happen every year; sometimes I have to feed hay sooner," she says.

"In earlier years I had all that grass out there in the fall that was just sitting there through the winter,



The Pearson's portable chicken house.

and all the manure going to waste in the small lots! It makes more sense to have the animals leaving their manure on the pastures. I don't have any equipment to haul the manure back out to those fields, so I try to just keep the manure out there," she says.

"I would love to do even tighter rotation in the winter, to put more manure and hay litter on the pastures, but I've had a hard time doing it this winter with the frozen ground, ice and snow, moving the electric fences. But I think we're making progress just having the animals out on the pastures, spreading their manure and the hay litter, rather than having them locked up off the pastures. It's been a big change, and I do think the fields already show it. You can see that the grass is more vibrant; you can see the carbon is there, the different color of the grass, and different species coming in—not just from seeds in the hay but also just from not mowing, and allowing it to grow," Pearson says.

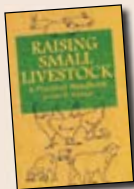
"I am enjoying working toward better pastures, constantly changing what I've been doing, and re-evaluating what I want to do. Holistic management helps me try to determine whether something makes sense or not. I am still in that process."

Family

She and her husband Marvin have two children. "Our 13-year-old son is Clayton and our 12-year-old daughter is Heather. She is out there most days on the farm with me, and enjoys helping. She works really hard and enjoys the animals. We have baby

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goats right now and she loves them, and enjoys taking pictures of the animals. Animals are great for kids. My son kind of gave it up but still likes to go out there and pet some of them once in awhile. Clayton and Marvin are my 'muscle men' and handymen. They build and repair anything that is in need of repair," she says.

The horses

"We still have some horses that my daughter and I ride for fun. At one time they were my livelihood; I trained horses and bred them. For most of my life, until the past few years, horses were my full-time passion and my main focus. Then I had kids, and a farm, and a broader life, and I just evolved to doing more things. The horses are still fun, and emotional support for me, but I've cut down to just the ones we ride for fun," says Pearson.

Her daughter likes to ride. "My son used to ride but he doesn't anymore. My daughter and I enjoy riding and we're glad when winter ends so we can ride more. It was a real winter last year, for a change. This year we hope to do some competitive trail riding and endurance riding. I used to compete in shows and endurance rides so we hope to do that again. We are blessed to have some really good horses and we are eager to get them out on the trails," she says.

The horses are pastured with the other livestock. "I keep them mainly with my big steers. I do have to occasionally manage the horses differently, with a grazing muzzle, or use a lane they can be in for part of the day. If the grass is really lush and I have a couple of fat horses, I put those in a really long lane that has round bales on one end and their salt and water at the other end. They get exercise because they have to move from one end to the other. I also use hay-limiting netting on the round bales to slow down their consumption, but they have free choice hay if and when they need it," she explains.

"I used to be a full-time farrier, and now I am a natural trimmer. I do a lot of founder rehabilitation, and founder prevention. I had a wonder-



Erin says the children will realize how special their upbringing was once they are grown.

ful woman farrier a long time ago when I was in Missouri. She became a good friend of mine. Then she had a baby and stopped doing farrier work. I had some VA money so decided to go to farrier college. After that I shod all my horses and even put shoes on my broodmares just because I could. Then in 2003 I was given a lovely foundered Shetland pony named Daisy, and in researching ways to help her hooves I learned about natural trim. I became a natural trimmer and would never go back to shoeing. I use hoof boots when needed, on rocky ground," says Pearson.

"I had pastured my horses with the cows before, but I often worried about the springtime lush grass, and founder. Now, however, it works out really well between using the grazing muzzles and the lane, and I've had no problems, and have been able to graze the horses almost all year round. I take the horses off pasture during the night or whenever I need to, and they have hay instead. If I have some fat, easy keepers they just go out with their muzzles," she says.

A great way of life

"I love being a farmer, enjoying nature, and a closeness with the Earth and animals," says Pearson. "I believe this way of life keeps me grounded and has provided many life lessons for myself and my children. They have witnessed reproduction, birth, life and death. My husband gets to

remember and enjoy his connection to his early life on a farm and memories of his father. He gets to take a break from his work and be outside appreciating the beauty of the farm and the animals."

Her children know where real food comes from, and the work that goes into being a farmer, even though it's on a small scale. "My kids have learned, and are still learning, lessons about hard work, putting other creatures ahead of themselves, and many other lessons too numerous to mention."

"My children have seen us figure out problems on the fly and learning how to make do with whatever materials or resources we have on hand to make things work. We are continually problem-solving. These experiences and lessons will serve my children well wherever they go and whatever they end up doing as adults. I also believe that the experiences and memories of life on a farm will be treasured as they grow up, as these experiences are becoming more rare for this generation. They will understand how special this life is, and was, when they are grown." ❁

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The garden:

Gardening: *A vital step to the freedom of self-sufficiency*

BY RHONDA CRANK
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With the changing economic times we are in, more and more people are planting gardens. Some are planting in old flower beds; some are exchanging their lawn mowers for tillers and using the front yard; still others are using raised beds all around their lots in town, while people who already garden are increasing their plot size. Gardeners know that being able to provide as much food for yourself and your family as is possible is vital to the freedom that comes with self-sufficiency. Wherever you live, whether you have large acreage or a lot in town, you can grow your own fruits and veggies. This may seem a strange time of year to be talking about starting a garden, but this is the time to be planning. Seed catalogs, neighboring farmers, or even a family member who gardens are a good place to start gathering information about what you want in your garden.

If you're a beginner vegetable

gardener, there are some basic things you should consider about vegetable garden planning: things like site selection, plot size, which vegetables to grow, and how much to plant. Remember, "It's better to be proud of a small garden than to be frustrated by a big one!" One of the common mistakes beginners make is planting more than anybody could eat or want. Trust me, you can only give away so many zucchini, cucumbers, and peas. So unless you want to have storage issues and excess waste, plan wisely. I would recommend talking with someone you know who has a garden and the experience you need for your area. I was fortunate to have my great-grandparents and grandparents as a big part of my life and among the many lessons they taught me, gardening was one of them.

There is just something wonderful about planting a seed and watching it do exactly what God instructed it to do: grow and produce fruit. We'll take a short look at a few things for you to consider. Please know that I am not a master gardener so I won't claim complete knowledge and authority

on the topics. I am just experienced and love the garden!

Be sure you have enough sun exposure. Vegetables love the sun. They need at least six hours of full sun every day, and preferably eight. Some, like lettuces and spinach appreciate a little shade, so be sure to check the sun requirements of your chosen veggies. I like to put my tender plants in raised beds placed where they can be sheltered by the shade in the late afternoon.

Know your soil. Now I have never tested my soil; it's just not something that has ever been necessary to me. I garden much the way my grandparents taught me, and they never did this, so I don't. I am an organic, non-GMO gardener, but not everyone is, so you decide how you want to grow your garden and head that way. (If you want to know more about organic or non-GMO gardening, you will find help on my website www.thefarmerslamp.com.) Soil can be enriched with compost, and I do this in many ways. We plant a cover crop of buckwheat in the late summer, early fall, after it goes to seed and comes up a second time, we put our chickens in the garden. Doing this lets them "till" for us. They aerate the soil and add their manure to it. They benefit by receiving bugs and nutrition from the garden, making them happy and making for really good eggs! When we move them to a new section of the garden, we cover the "tilled" section with leaves and let it sit all winter. If you have cows, or know of someone who does, you can add their manure to your compost pile or directly to your garden.

If you are a non-GMO, organic gardener, be sure to know how the cow was fed and grazed. Remember, vegetables love good, loamy, well-drained soil. You can check with your local nursery or local cooperative extension office about free soil test kits, if you want to assess your soil type.

Placement is important. Don't plant too near a tree, which will steal nutrients and shade the garden. I know a lady who, on her first attempt at a garden, tilled and dug around trees in her back yard. She unknow-



Vegetables love good loamy, well-drained soil.



den fork, soaker hoses, hoe, hand weeder, seeder, broadcaster, and wheelbarrow (or bucket) for moving around mulch or soil and for harvesting. It is definitely worth paying a bit extra for quality tools.

Most gardeners start looking through their seed catalogs in January, maybe

ingly killed the tree by destroying its main root system and her garden didn't do so well because of the drain on the soil by the trees. A garden spot close to the house will help to discourage wild animals from nibbling away your potential harvest, maybe. I have had deer come right to the back porch to eat the blooms off my roses and the squash from the vine in the raised bed.

You can decide about tilling, lasagna gardening, no-till gardening, raised beds, or like most of us, any combination of these. Raised beds are great for people with bad backs, or some other issue that makes stooping or kneeling on the ground difficult. If you have bad soil, this is a great way to start. Again, search the internet, ask your extension agent, but most importantly, seek out someone in your community to learn from. Attend your local farmer's market, this is a great place to meet farmers, form relationships with them, and learn.

Vegetables need a lot of water, at least one inch of water per week. There are many systems, ways, and techniques for accomplishing this task. There are too many to go into here, but if I do have to water, I prefer soaker hoses, catching rain water, and we are blessed to have springs here on the farm.

Of course, you'll need some basic gardening tools. These are some of the more essential tools depending on which type of gardening you decide to do: Tiller, spade, gar-

February, just because the desire to plant something is starting to bud in us. We save most of our own seeds, but when I do have to order, I use Baker Creek Heirloom Seeds, Wood Prairie Farms, and Southern Exposure Seed Exchange, but you can find the one you trust and like doing business with. It may take some trial and error, but be patient, it will be worth finding someone you feel good about doing business with. Be sure to order early. Your local co-op or farm supply is also a great place for help with all your gardening needs, they can be a valuable asset to you.

Know your local frost dates. Be sure to know when the first and last frost dates are for your area. Remember the date in the almanac is approximate, keep your eye on your local weather, and be sure to talk to a local farmer, most of them are only too happy to share information and help you. Plant too soon and you lose the crop, plant too late and you lose the crop, don't be frightened by this, nature is designed to give us clear warning and prep time, at least in this case.

What about garden size? A 16' x 10' plot can feed a family of four for one season, longer if you preserve the harvest. That's another article, but the basic ways are canning, dehydrating, or freezing. If you want or need more space, adjust your size the way you want it. If you choose this size, making your garden 11 rows wide, with each row 10 feet long would probably



The author in her garden.

be the best use of the space. Again, adjust to your own needs. If possible, the rows should run north and south to take full advantage of the sun.

Some vegetables yield more than one crop per season like beans, peas, cabbage, kohlrabi, lettuce, spinach, mustard, tomatoes, peppers, turnips.... Be sure to plant what you and your family will eat. If you don't like beans, don't plant them, but who doesn't like beans? Some of the easiest and most popular home garden vegetables are:

Tomatoes—very high yielding

Zucchini squash—these are super productive! Trust me.

Peppers—any variety you want, usually very productive

Beans—any variety you like; we plant five different varieties.

Lettuce

Beets

Carrots

Peas

Yellow squash

Watermelon

Marigolds and zinnias mixed in help discourage some predators and add a little splash of color.

So, now that you have some of the basics, what are you waiting for? Get to gardening, you will never be sorry you did. Be sure to involve your whole family in the process. Remember, even as an experienced gardener I am always learning. That is one of the beautiful things about farmstead-ing, you never stop growing as a person, or a farmer. Happy growing! Happy eating! Happy times. 🌱



BY KAYLA BREESE

With the warmth of spring many people are itching to start planting. The quality of seeds used can make all the difference in how much crop they yield, their resistance to drought and pests, among other traits.

According to Josh Rogers, associate sample prep technician at Covance Inc., with a Bachelor of Science degree from the University of Wisconsin—Stevens Point, the quality of a seed ranges drastically depending on what trait the grower wants. Some of the varieties people look for are their immunity to disease, taste, size, color, shape, and resistance to freezing or drought.

“I’m not saying the more variety the better the quality of seeds, but how well such traits affect the crop increases the quality in the seed,” he said.

Seeds with particular traits can result from selective breeding or hybrid breeding.

A hybrid seed is the product of cross-pollination between one plant with a desired trait and another plant of the same or similar species that has another trait.

For gardeners who do not wish to purchase hybrid seeds, note that non-hybrids will not produce a specific variety or quality.

“Non-hybrid is performed by open pollination in which pollen from plants in a non-controlled environment are released and can produce many different varieties of traits that effect taste, size, color, natural resistances and viability at random,” Rogers said.

Quality seeds are everything

When purchasing seeds decide which trait you want most. Are you in an area that doesn’t see much rain? Are crop-destroying diseases a problem? Do you want more produce from one plant?

“If say, you want to grow [a particular] tomato because it never gets blight, it’s disease resistant and it might not have as much yield, but you don’t really care about that because what you’re interested in is disease resistance,” Ruth Hempel, owner of Forth Floral in Rhinelander, Wisconsin, said. “So [your choice of seed] kind of depends on what you are interested in.” Forth Floral has been in business for 113 years.

She cautioned those who are eager to plop a seed in the ground and sink their teeth into their produce to be aware what USDA growing zone they are in and what plants do best in that area.

“When you go to a lot of those big stores that have multiple chains all over the place, sometimes they buy the same seed for all their stores, it’s not specialized for your area,” Hempel said.

She recommends looking for seed companies in your state first, as they will carry what grows well in that region. From there you can zero in on what qualities you are looking for.

Hempel stresses vigilance when selecting seeds. Just because some seeds are inexpensive it does not mean they are a good deal. They may have very few seeds in a packet or the quality may not be as good as some that are purchased from reputable sellers.

Not only can you get better quality seeds from the reputable sellers, but they offer a vast selection that will

yield produce that can wow the palate or make a flower garden pop. Getting tired of the same old basil? Change it up with tangy lemon basil. Add a splash of color to your salad with vibrant yellow Gold Nugget tomatoes and sweet Purple Haze carrots.

There are many varieties of seeds and sometimes the better quality ones cost more, according to Hempel. An example would be certain types of produce that people wouldn’t find in their local grocery stores such as the purple haze carrots.

“Some of the varieties, they will carry across many different seed companies but sometimes [the company] will have exclusives just for [their particular area],” Hempel said.

Gardeners who want to use the seeds from their hybrid plants should be aware that the next generation will carry 50 percent of the desired trait. Rogers said that after a few generations, the plants will get close to 100 percent hybrid yield. So for those who want to continue to get a particular trait consistently they may want to just purchase new seeds each year.

After the fun of digging in the dirt and planting seeds, some gardeners may have leftovers. To store them until next year, keep them in a cool, dry place such as a dry paper envelope in a zip lock bag and then into a freezer to prevent germination or decomposition. The bag will prevent moisture from getting to the seeds.

“Most seeds can last up to a couple years in these conditions until they start to lose quality and viability,” Rogers said. He also recommends consulting plant breeders on how long particular seeds can be stored. 🌱

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The garden:


Get an early start with carrots

NANCY PIERSON FARRIS
SOUTH CAROLINA

Carrots are one of the most versatile vegetables I grow in my garden. We plant them once a month through spring, and again after Labor Day. Except during summer's intense heat, I harvest a continuous supply for salads or for cooking.

Since carrots will germinate in 45°F soil, I get an early start on my garden by sowing a short row of them in January, about ten weeks before my last spring frost. I can expect harvest to begin in March. Small, crisp carrots fresh from the garden are a welcome addition to a spring salad!

Because feeder roots of carrots may plunge two feet below the surface, we begin by thoroughly working the soil. Before the year ends, we spread compost over the area, and dig it in. A few days before we intend to plant, we rotary till the rows again to loosen and mix the soil. Though I prepare my garden with organic materials such as rotted bedding from the goat stalls, or well-aged litter from the henhouse, I could use a 10-20-10 fertilizer at a rate of two ounces per ten feet of row. A higher nitrogen formula could result in much foliage and stunted, misshaped roots.

Pictures accompanying this article show the half-long variety, which I usually grow. In heavy soil like

mine, with a high clay content, long carrot varieties don't develop well. One suggestion: plant long carrots after early spring peas, because the peas' strong root system opens the soil to a depth that allows long carrots to penetrate. On the other end of the spectrum, the very short or ball types such as Atlas (Parks Seeds) or Parisian (VT Bean Seed) will grow in shallow soil, or even in containers.

To add color to the carrots patch, I could grow Atomic Red. Purple Dragon might add some excitement to the garden.



Carrots come in a rainbow of colors.

Burpee offers a Kaleidoscope mix, which includes red, purple, yellow, and light green carrots. Carrot seeds are very small, and the sprouts are delicate and hard to see. To mark the rows, I first plant a few radish seeds in the shallow furrow, then plant the carrot seeds and cover with barely a quarter inch of soil. I then spread coarse mulch thinly over the row to hold moisture and prevent crusting of the surface. Within a week, I see the radishes! Pairs of small, round leaves scattered along the row. At least another week will pass before the delicate fringe of carrot foliage becomes visible. Soon after the carrots appear, radishes start to form roots and I can remove some of them, carefully, to use in salads. Radishes mature in just three weeks, leaving the space for the carrots.

I try to hand weed and thin the carrots from the time I can see the foliage. Since they are so delicate, weeds can quickly outgrow and smother them. Since seeds are so tiny, it is difficult to sow thinly enough to avoid discarding any by thinning. The first threadlike roots are good for nothing, but I often use the tops. They have a slightly peppery flavor and anything green is welcome in my early spring salad. Tops can also be snipped and tossed into soup. As the carrots begin to develop, I use the whole plant in salad or add it to vegetable soup.

At this point, I aim to create a half-inch spacing of the carrots. As roots develop, I pull every other one as I need them, thus increasing the space for those that remain. When I pull a few carrots and find them mature, if we need that space for another we grab the spading fork. Working a few inches away from the row, Don loosens the dirt so I can easily pull the carrots. Planting short rows of carrots monthly, January through May, we have a steady supply and usually store them in the refrigerator. The few times I have an over-abundance of carrots, I prefer to can them the old-fashioned way. I wash, scrape, and slice them, then boil until they are soft enough to pack tightly into glass jars. I add water, and a quarter teaspoon of salt to each pint, place lids and rings, and process them for 30 minutes at 10 pounds of pressure.

Years ago, when I used a water bath canner, I processed carrots for two hours. If I have only a few extra carrots, I may freeze them. I find they are better after I cook them till tender, then cool and pack into freezer containers. I sometimes freeze carrots with mixed vegetables. These are handy during a rainy winter day when I want to make soup or pot roast. Carrots are one of most versatile vegetables I grow! They are also one of the least predictable. That is one reason I plant a short row every month. Vagaries of weather: Too much rain, or not enough; too much cold, or too much heat. All can affect the growth of carrots. One hungry rabbit can gobble up a whole row of carrots in one night.

We all know that when we plant a seed, we gamble on the outcome. To borrow an idea from an old country song: you gotta know when to plant 'em; you gotta know how to tend, you gotta know when to accept your losses and hope for better luck in the next round!

So if your carrots (or whatever else you planted) meet with adversity, prepare another furrow, and make another planting. Next month, the weather may cooperate and the rabbit may stay away, and the seeds will produce a bumper crop! It happens to me every year. 🌱



Anyone for O K R A?

By ANITA B. STONE

I remember moving from Ohio to North Carolina with my family several years ago, during which time I was looking forward to that southern home cooking everyone talked about. My neighbor qualified the staple of southern cooking when she asked if I had ever eaten okra. Being an avid gardener, I was ashamed to admit that I had never heard of okra. "What?" she hesitated. "Without okra we would starve. We just love the stuff." She offered to cook a pot of stewed okra and one week later I decided that my desire for southern cooking was not exactly at the top of my can't-wait-to-eat list. "It's slimy," I thought. Not wanting to hurt her feelings I told the neighbor how my family enjoyed okra's unique taste. Two days later she visited us with a plate of southern fried okra. "I could tell by your facial expression that you weren't pleased with okra stew," she said. "Please try a small bite of fried okra." From that day forward I have not only cooked fried okra on a weekly basis, but I have acquired a taste for the stuff in soups, stews and casseroles, so long as I "doctored" it up.

Okra is actually a very versatile fresh, crisp vegetable that has gotten a mixed reputation. And, yet, this fast grower is one of the most heat and drought tolerant vegetable species in the world and will tolerate clay soils. Okra's hall of fame is its magnificent yellow and purple hibiscus-like flowers. As a member of the mallow family, the showy bloom attracts natural pollinators. Its sometimes debatable taste and popular food source reigns supreme in southern gardens and has become a staple of many regional cuisines. So, if you are an okra enthusiast, you are among thousands of foodies whose diet consists of this 10-calorie productive crop plus receive the benefits of vitamins A, C and K. A good source of fiber, calcium and potassium, okra is also known for being high in antioxidants.

In my home garden as well as the recently constructed community garden I partnered with at Eastern Wake Technical Community College,



The pod above is perfect for cooking, while the one below is too long and woody.



we planted okra seeds in a small 4' by 6' raised bed garden. Although we got a late start, within a six-day period we were amazed at the speedy growth of this vegetable, which far surpassed other crops. We planted two seeds at a time, $\frac{3}{4}$ " deep and spaced every 3" to 4" per spot, in full sun and organic soil, and then offered daily doses of water to establish a healthy root system. Okra does require acidic soil with a pH between 5.5 and 6.5 for the average stalk to grow between four and six-feet tall. In less than seven days, we thinned to one plant every 10–12 inches apart for airflow. We grew each stalk between three and five feet apart in linear rows. Because the seed pods become fibrous and woody, the fruits are harvested when immature and should be eaten before they grow too long. Surprisingly, we did not have to weed the bed, nor did we offer the crop a boost of fertilizer five to six weeks after planting. But I did not follow protocol with one of the easiest plants to grow. Knowing the most common diseases afflicting the okra plant is verticillium wilt, powdery mildew leaf spots and root-knot nematodes, I watched the plant on a daily basis, using no side dressings as fertilizer. I decided my okra was going to be organic, so there was no pesticide,

herbicide or fungicide used. I also broke the rule of thumb and did not surround the plants with mulch because I assumed that an excess amount of nitrogen would lead to increased leaf growth and lower pod yields. So, I simply permitted the seeds to germinate, thinned them out and released the freedom to grow. And they did — extremely well and pest-free. Like a mysterious hand reaching out each night, the okra seemed to grow quickly. I made certain the pods were approximately two-to-four inches long because that length made them easy and tasty when cooked, rather than wait until the pods reached a six-inch length where they became tough and fibrous. Several pounds of the crop became available every other day, which we donated to nearby charities. After all, that's the



Wouldn't these flowers look great in your garden?

meaning of community garden — to provide for the community. I also made sure to remove any old pods during harvest to encourage new growth.

One of my favorite okra plants is the heirloom "Clemson Spineless," a popular source of food for warm climate gardens and a reliably high yielding plant which grows, but does not become too fibrous. Another heirloom, "Annie Oakley," is a quick growing dwarf that matures in 48 to 52 days and has spineless pods, grows to about five-feet tall in more temperate summer climates rather than in balmy southern gardens. Next year I am going to try heirloom "Burgundy," which grows colorful crimson pods, stalks and leaves, and appears less slimy than

the other varieties. An interesting heirloom named for its large rounded pods that resembles bovine horns is "Cow Horn," which dates back to the Civil War. The pods are spineless and tender once they grow to three inches in length, and are great for stewing and soups.

If you are not a fan of okra, chances are you really haven't tried it in a way that excites your palate. Preparation of okra can be simple. Once rolled in bread crumbs and fried, the taste becomes more like a fried zucchini or breaded squash. Chefs and cooks stew okra with onion and tomatoes with small bits of meat and corn. Some roast the vegetable with margarine. Serve it over rice, hot cornbread or grits, or even add it to ratatouille and you have a family meal.

"It's something we grew up with," says southern gardener Karson Turner. "If you cook it right, you can enjoy the taste whether you bread it or add garlic. It's one of those traditional foods." Karson went on to say, "Nowadays, anything goes. Several country clubs are serving okra as an elite entrée. Whoever would have thought our little pods would become famous?" she chuckled.

I have often been asked where okra originated. The answer comes as a surprise. There is no defined geographical origin of okra. Related to cotton and other mallow family plants, it is an ancient vegetable that originated in Ethiopia. Spreading across Western Africa, it became a staple cuisine for a long time and even crossed the ocean to Asia where it then spread to India and continues to be popular in Indian and Pakistani cuisine. Eventually it made its appearance in Brazil, the West Indies and reached North America in the early 18th century. The crop grew as far north as Philadelphia and was well established in Virginia. Toward the end of the 19th century okra became popular in Japanese cuisine, served with soy sauce or as tempura. The name okra is recognized in the United States and is frequently known as "lady's

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fingers" outside of Africa. With a lineage of names from Western Africa to Nigeria, we get the word "gumbo" from the island of Macau and the English name "okra." Highly recognized, gumbo has become the most popular regional "signature" dish found throughout the Gulf Coast and is especially popular as a stew.

Currently Mediterranean cuisine is noted for a thick stew made from okra. Pods may be pickled or deep fried. Farmers in Nigeria have developed a multi-crop system which uses a variety of vegetables, including okra. In the Caribbean, okra is eaten in a variety of soups. In the Dominican Republic it is eaten along with rice and in Haiti, it is cooked with rice and maize. Because the entire plant is edible, the leaves are also eaten raw in salads or cooked in the same way as the greens of beets. The pod seeds may be roasted, pickled or ground, and sometimes used as a caffeine-free substitute for coffee. In 2009 a study revealed the potential of okra oil used as a biofuel.

Planting okra can begin with seeds indoors in peat pots three to four weeks before the last spring frost. You can also start okra directly in garden soil during the heat of July. The seeds or seedlings require fertile soil and full sun. As with beans, you can soak okra seeds overnight to help speed germination. Be sure to space the plants up to two feet apart.

If you select mulch, apply approximately six inches around the plant and if you wish to side-dress, you can use aged manure or compost. About two months after planting, the okra will be ready for harvest. It is best to pick when it is between two to three inches long and harvest frequently. Tiny spines may irritate your skin, so unless you have a spineless variety, make sure you wear gloves to protect your skin. Okra is easily stored. Simply place the uncut and uncooked pods into freezer bags and keep them in the freezer. You can also bread small slices and place



Okra grows in raised beds in the community garden.



them in freezer bags for the winter months. Or you can parch the seeds to make a fake version of coffee just as occurred during the Civil War. At the end of the harvest I make certain to select a few young pods and dry them during the winter months, storing them in a cool dry location. When spring arrives I open the pods and several viable seeds are ready to be planted. Once you plant okra in the garden, you will never have to spend one cent in new purchases, unless you decide to try another variety.

Whether you live in the Gulf Coast region, North Carolina, Maryland, New York or Michi-

gan, you can grow okra. It is fast becoming an eye-catching crop, not only for its ease in growth and productivity, but for its sustainability. Even during the summer months in cold states okra likes to be the "star" of the garden and may grow successfully given the right conditions. It chooses its companions carefully. It does not tolerate tomatoes, but will grow well near peppers, basil and eggplant. With increasing popularity this vegetable has proven to be a winner from farm to fork as a major food source and continues to offer ease for farmer, gardener, and homesteader. 🌱

Dressing up the winter garden

By SHERYL NORMANDEAU

Although cold-climate gardeners can take a respite from gardening activities during the winter, there is no need for the garden to look anything less than its best. There are many ways to create an interesting and beautiful winter garden, even if it is covered with a layer of ice and snow. Here are a few tips to get you started:

Consider the architecture of your garden. By this, I am referring to all of the shapes and forms that

your garden is composed of, such as tidy rounded shrubs or hedges cut in a geometric design, or even the fascinating outlines of trees

such as contorted hazel (*Corylus avellana* 'Contorta'), weeping European birch, or crabapples and apples. Hardscaping materials are important, too: think of decorative gates or finials on fenceposts, pergolas, trellises, or garden statuary. It doesn't matter if your garden is a formal or informal style—the shapes it contains can be very interesting, especially when covered with snow. One of my favorite examples is the cotoneaster hedge that borders one side of our property. Not only does it define a boundary and act as a living fence, but its straight, squared edges are attractive, all year 'round. (As well, the persistent berries are food for hungry chickadees in the lean season, and the dense branches keep birds safe from predators and protected from the wind). If you look out over your garden in the winter and don't see any features that instantly draw your eye, it may be time to put them on your shopping list for next spring!

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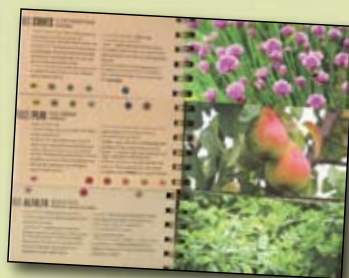
By JOSIE JEFFERY



With its unique split-page mix-and-match system, *The Mix & Match Guide to Companion Planting* is a colorful visual gardening guide to which vegetables, fruits, and herbs grow best with one another, and which do not.

Due to the revived interest in vegetable gardening, people are again turning to the age-old practice of companion planting as an effective way to avoid chemicals and reduce labor simply by placing the right plants next to each other in the garden. This book is designed to help gardeners mix and match various companion plant

pairs and groups to create healthy, harmonious botanical communities. All you have to do is choose from the extensive plant directory to find the perfect plant pals. Each central crop has a row of colored dots along the top and bottom of the strip showing its "requirements." Turn the strips and match the dots to find your plants' best friends. The more dots that match, the better the chance your plants will flourish. **Hardcover, Spiral Bound, 131 pages, \$17.99**



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ly important in the winter garden. Shrubs such as dogwoods, with their brilliant yellow or red stems, instantly draw your gaze. The peeling bark of river birch, paperbark maple and crape myrtle and the smooth steel-gray trunks of American beech are also eye-catching.

If your trees and shrubs bear persistent fruit, nuts, or catkins, count that as a huge bonus in the winter garden! One of my favorite trees is the mountain ash (*Sorbus spp.*), with their clusters of orange or red berries that last well into the winter if the birds don't take them all. The brilliant color of the fruit is an absolute knockout against freshly fallen snow. The green ash in our yard rarely loses its beautiful winged samaras in autumn, so we are treated to the sight of them during the coldest months of the year. Other trees and shrubs with persistent fruit include *Viburnum spp.*, ornamental crabapples, and roses. Think about the seed cones found on various types of evergreens, as well as alder.

Conifers are an obvious choice for the winter garden, as they retain their foliage all year. There is no need to stick to green-leafed varieties, either – consider gold-tipped "Pfitzer" junipers, for example, or

the smoky blue color of *Picea pungens* (Colorado blue spruce). If your yard is large enough, you can mix and match conifers for maximum impact: the texture of the leaves is just as important as the color of them, and the growth habit of the tree (columnar, groundcover, weeping, globe, upright) brings us back to the concept of architecture and its importance.

Broadleaf evergreens are also excellent selections for winter interest, with their glossy persistent leaves. Some, such as holly, also have decorative berries that stand out like jewels in the gray gloom of the season. Other examples of broadleaf evergreens include rhododendrons and azaleas, and the versatile boxwood, which is often used for hedging material or topiary.

The dried stalks and remnants of perennial grasses and herbaceous plants can be spectacular in the winter landscape. I don't cut back my perennials in autumn, choosing instead to allow the seed heads of scabiosa and the dried flowers of lady's mantle and yarrow to accumulate a pretty dusting of snow. (Leaving perennials as "snowcatchers" in the winter also helps to insulate them against fluctuations in temperature). If you grow switch grass, fountain grass or *Calamagrostis* spp., don't trim them back – enjoy them as they sway in the wind and collect frost and snow on their tips. Perennial flowers that should be left for winter interest include asters, *Echinacea* and *Echinops ritro*. Perennial vines can be attractive in winter, as well. I love the fluffy seed heads of clematis and the dried leaves and flowers on my Engelman ivy – they are pleasing to the eye, as is the lingering shape of the vines on the trellis.

One more way to delight in the winter garden is to decorate with a seasonal focus. Welcome visitors to your door with containers filled with fresh evergreen boughs, stems filled with bright berries, and other trimmings from your garden. Even during this quiet, dormant season, the garden can still look refreshing and inviting! 🌿

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A journey with the bees:

Deep winter & preparing for spring

A little history, a little mystery, a little practical advice

BY TOM THEOBALD

As I said in the last article, we share a long and intimate history with the honeybee, much further back than most would ever imagine. There's little doubt that the honeybee and its sweet treasure would have attracted the attention of our earliest ancestors and they most certainly endured many painful stings to exploit the bees' resources. The earliest tangible record comes from a cave painting in eastern Spain from about 9,000 years ago. It shows and individual ascending vines to a colony of bees, a basket under one arm to hold the honeycomb. In some instances colonies in hollow trunks or limbs may have been brought back to a seasonal camp to be protected from others and it's quite likely that bees may have been our first venture into husbandry as we began to shift from hunting and gathering to agriculture.

Among the first beekeepers were the Egyptians. Their bees were kept in clay tiles and they were the first migratory beekeepers, loading their bees on rafts to follow the season as they floated down the Nile, selling their honey in Cairo at the end of their journey. On their own and through trade honeybees spread to Greece and then north into Europe and the British Isles. Honey was a delicacy reserved for the wealthy and powerful, with some no doubt diverted by the peasant class who were the actual keepers of the bees.

Honeybees aren't native to North America, but it wasn't long after settlement that they were brought across the North Atlantic. The first colonies arrived in 1622, and through swarming began moving across the continent just as they had spread out

over Europe. While North America had a wide variety of native pollinators, many of the Old World crops failed to thrive in the absence of the honeybee, and in addition bees were an important source, the only source, of beeswax put to a variety of uses, primarily for high quality candles.

Swarming is the way bees divide and multiply. In the spring and early summer, as the population of the colonies grows, the bees become crowded and their response to that crowding is to begin raising new queens. Just before those new queens emerge the old queen will leave with a sizeable portion of the population, headed for a new home. In a really strong colony there may be multiple swarms. The first and largest is the "prime swarm" with the old queen, then one or more "after swarms," smaller and each with one of the newly emerged queens.

There wasn't much real management of the bees in those early days so nearly every healthy colony swarmed in the spring and often the spread of these swarms preceded settlement by many miles. Native Americans were closely attuned to everything in the natural environment so of course they noticed the arrival of this new insect and called it "the white man's fly" because they soon learned that the appearance of the honeybee meant that settlement was not far behind.

Swarming is one of the fascinating mysteries of beekeeping, we think we understand it, but not completely. Before swarming takes place foragers are house hunting, checking out potential new homes. It is believed that they actually measure the volume of a cavity. The first flight of a swarm is usually short, I've always said that they will land on the first

thing that sticks out of the ground, a tree, a post, your neighbor's mail box. There's a practical reason for this. The old queen has probably only flown once in her lifetime, and while she will stop laying eggs for the last few days to lighten her load, she isn't a natural athlete. I picture her huffing and puffing after that first short flight and she needs a day to recover her strength. A swarm will typically spend the first night clustered in a mass and take off mid-morning the following day. Among the many potential sites the foragers have previously investigated, somehow this mass of bees decides which of those it will go to.

The bees moved west and north from those first colonies brought over from England and it took them 170 years to reach the Mississippi River. The first swarm on record to cross the Mississippi was in 1792 and it landed in the garden of Mme Choteau (of the Choteau family of fur trade fame) in St. Louis. By 1809 they were reported by British naturalist John Bradbury 900 miles up the Missouri River. Bradbury was a member of the Hunt Expedition, the first group up the Missouri after Lewis and Clark.

While the bees were moving up the Missouri River at a rapid pace, the Great Plains represented an insurmountable barrier, lacking in natural cavities for nest sites and dependable bloom throughout the season. It was up to man to take them further west. The first bees in California, 12 colonies, arrived in San Francisco by steamship in March of 1853, brought by botanist Christopher Shelton. Only one colony survived the first year, but the following spring it threw three swarms and that was the beginning of bees

in California. In my home state of Colorado the first colony of bees was brought by ox cart across the plains in the early summer of 1861 by Isaac McBroom. McBroom's bees died the first winter, but others were subsequently brought across the plains by early farmers who had the same experience as the first settlers on the east coast, without the familiar honey bee many of the crops they brought west failed to thrive.

I said in the last article that any of you considering beekeeping should hit the books and I hope you've done so, but let me sketch out some of the basics because now is the time to start making preparations if you plan to be a new beekeeper. There are two basic requirements, bees and something to put them in, a hive, that's pretty obvious, but there are choices to be made. Back to the history for a minute. Up until the middle of the 18th century beekeeping was a pretty primitive affair and there wasn't any real management, we provided the nest sites—hollow log "gums", clay tiles, straw skeps—let the bees swarm as they would, and harvested the honey and beeswax at the end of the season, often destructive to the colony, akin to cleaning the seeds from a pumpkin.

Enter the Reverend L.L. Langstroth, a Yale educated gentleman farmer/philosopher of his time, who among his many interests was exploring better ways to manage bees. In 1851 as he was returning home from his beeyard he thought about what he had observed in his colonies, that when left to their own devices the bees maintain an even spacing between the combs, about 3/8th of an inch, what I think of as the space required for two bees to work comfortably back to back on adjacent combs. Anyway, Langstroth reasoned that if he were to build a wooden frame to hold the honeycomb and designed a hive where all of the free space was 3/8th of an inch, he should be able to take those frames out, examine them, move them around, and for the first time actually manage a colony of bees. In 1851 Langstroth designed such a hive

and it worked beautifully, just as he thought, and that simple, elegant concept of the bee space was the foundation of all of modern beekeeping.

I know there are other types of hives, but for beginners I definitely recommend a Langstroth hive. Get your feet on the ground, understand what the dynamics of a colony are and what your role is in the husbandry of bees. You'll have enough to learn in the first two or three years and once you feel comfortable with your beekeeping skills you can consider some of the alternatives, such as the top bar hive or the Warre hive. Although frequently touted as more natural, less intrusive ways to keep bees, in fact they require even more perceptive and involved beekeeping to be done properly. Save these novel approaches for later.

So what will you need? The basic requirement is two hive bodies, also called deep supers, with 10 frames of honeycomb in each. If you start with a package (I'll cover that in the next article), you need one hive body to start, and will most likely need the second by mid-summer. Those twohive bodies are the year 'round home for the colony. In addition, you will need shallower boxes, called honey supers, to store surplus honey. They probably won't be needed the first year, but should be on hand in case your bees are more successful than anticipated. In most regions we expect a new colony to fill out two hive bodies and make their winter stores the first year. A bottom and top are needed of course, and for each super 10 frames and foundation, the base for the comb which the bees will draw out and complete. There are many good suppliers of beekeeping equipment and most will give good exploded views of the hive parts. Go to some of their catalogs. You will also need a bee suit and veil, a hive tool and a smoker, plus assorted paraphernalia that you can figure out as you go. My advice would be to look at a number of suppliers, pick one and stick with them as you add woodenware over the years.

If you have a beekeepers' association close by, join it, start going to their

meetings and make connections with established beekeepers. Subscribe to one or both of the national magazines, *The American Bee Journal* or *Bee Culture*. Another good one is *The Small Beekeepers Journal* published in Apple River, Illinois by Terry Ingram (300 E Hickory St., Apple River, IL 61001). As well, on the internet, there are a host of blogs and sites done by beekeepers for beekeepers.

Get your inventory of equipment figured out and ordered in January so you can start assembling the first hive body and frames, for what you will need next—bees.

There are basically three ways to get bees. The first is to buy an established colony from another beekeeper. This is a little like buying a used car and my recommendation would be that if you choose this course, take along a good friend who is an experienced beekeeper to help you kick the tires and honk the horn. A second option would be to catch a swarm. This is a chancy approach unless you live in an area where you know that swarms are common in

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the spring, and there are fewer and fewer of these. If you miss a swarm you've missed the season. The third approach is to purchase a "package." A package of bees is a box about the size of a double shoe box, screened on two sides. Bees are sold by the pound (3,500 per pound). I would recommend a three-pound package, that will give a new colony a good start.

And where do you get these packages? There are queen breeders and package producers in the southeast, south and in Cali-

fornia. Getting them delivered may be problematical, but in most areas beekeepers get together and make a group order, often designating someone to make a trip to bring back a load of packages. Some beekeepers have specialized rigs and haul semi-loads of packages from California, making drops along the way at various points. Make arrangements early for any packages you plan to buy, with all the losses across the country the demand for packages is likely to be high, don't procrastinate and miss

out. Local beekeepers' associations are often good sources of information on group orders.

Finally, in the last article I mentioned *The Joys of Beekeeping* by Richard Taylor, a book I think should be in every beekeeper's library, but that has been out of print for years. Well, it has come back out by a publisher in England. It can be ordered through Amazon. Get it, read it. I'll be back in two months to talk about installing packages and other spring things. 🐝



Dadant & Sons, Inc. *The story of 150 years of service to beekeepers*

In 2013, Dadant & Sons, Inc., announced its Sesquicentennial—a century and a half of association with the beekeeping industry, contributing in various ways to progress in beekeeping during 150 years.

The founder, Charles Dadant, was born in 1817 in Vaux-Sous-Aubigny, a small village in eastern France, and had become interested in bees before he was 12 years old.

In 1863, the family immigrated to America and settled in Hamilton, Illinois, where beekeeping became the family occupation. By 1868, Charles had begun importing queen bees from Italy and was one of the first to import them on a large scale, making several trips to Italy to arrange for their importation. He had also begun a long series of experiments on the size of hives, finally adopting an

11-frame hive with hanging frames on the Langstroth pattern. His writings about the large hive appeared in both America and Europe and were responsible for the introduction of American methods into Europe where the Dadant-Blatt hive became the standard in many countries. The Dadant 6 5/8" super is used extensively today.

In 1871, his son, Camille Pierre, took over the bee work. In 1878, they began manufacturing beeswax foundation for their own use and later, for sale. As business grew, they improved upon manufacturing methods and helped to finance the invention of the Weed beeswax sheeting machine, still in use today.

In 1885 L.L. Langstroth, inventor of the modern 10-frame hive, entrusted the revision of his book, *The Hive and the Honey Bee* to them and four revisions appeared under their names from 1889 to 1899. Charles translated it into French and later it was translated into Italian, Russian, Spanish and Polish. Charles died in 1902 and C. P. produced four succeeding revisions of the book. In 1912, he retired and assumed editorship of the *American Bee Journal*, which has been published continually at Hamilton, Illinois, ever since.

As a member of the third generation of Dadants committed to beekeeping, M.G. Dadant devoted his time to the magazine, the business in general and he and his brothers, L.C. and H.C. Dadant, worked closely with the bees for many years. It was during this generation that crimp-

wired re-inforced beeswax foundation was invented in 1921 and the business grew to new levels.

Fourth generation Charles C. Dadant, entered the business in 1946 to work with his brother, R.H. Dadant. This era saw the firm emerge as a modern and complex industry with a wide variety of interests. In 1963, as part of their Centennial celebration, a plastic-base foundation, Duragilt, was introduced along with a revised edition of *The Hive and the Honey Bee* edited by Roy Grout, another member of the Dadant family.

Thomas G. Ross, Timothy C. Dadant, and Nicholas J. Dadant represent the fifth generation and Gabe Dadant and Luke Dadant Menn represent the sixth generation. Today's firm is the world's largest manufacturer of beekeeping equipment.

The Dadant organization over the last 150 years has played a part in much of U.S. beekeeping history. Although we represent just one aspect of the beekeeping industry, we hope that our organization, which has served the beekeeping industry in many ways, has added to the strength and viability of beekeeping as a whole. We look forward in the future to continuing to serve this industry, which we see as being so important to agriculture and the ecology of our planet.

More information on Dadant beekeeping equipment can be found at www.dadant.com. Additional information on the *American Bee Journal* can be found at www.americanbeejournal.com. 🐝



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Alabama State Apiary Inspector, Randy Hamann, presents the 2014 Beekeeper Award to Margie Smith.

Master apiarist shows pioneer spirit

BY CAROLYN DRINKARD

Have you ever wanted to be an apiarist? Margie Smith did, and at age five, her grandfather started to teach her all about bees. She was never afraid of bees, and in fact, developed a kindred spirit with the creatures that still exists today.

Even at a young age, Smith was fascinated by bees and developed a love for beekeeping that would become a life passion. Many of Smith's family members were beekeepers. When she met Jim Smith, her future husband, she learned that he, too, shared her love of bees. Ironically, his family had also been beekeepers.

Smith and her husband practiced apiculture for over 25 years. "We were very proud to be called 'bee farmers' because farming is one of the most noble professions in this world," she explained. The couple managed over 400 hives, selling their honey to wholesale packers. At one time, Jim was state president of the Alabama Bee Keepers Association, and Margie served on the state Board. In 1996, Margie was honored with the Alabama Beekeeper of the Year award.

Smith has been a longtime member of the Mobile County Beekeepers Association. After her husband's death, Smith was no longer able to keep her hives, but she continued to work in the organization. Currently, she serves as secretary-treasurer. This year, Smith was named 2014 "Lady Beekeeper of the Year" for Southern Alabama. She writes a monthly e-newsletter, called "What's Happening Now". The newsletter is featured on the Mobile County Beekeepers' Facebook page. She still enjoys teaching others about bees.

Smith currently serves as a SWARM dispatcher for Mobile County. She is on the Emergency Management list for both the fire department and local police. When a swarm appears in people's yards or barns, they call Smith, who then locates a local beekeeper to remove the swarm. She helps the beekeeper to gather 50 bees to be

tested to see if any Africanized bees might have invaded this swarm. If the bees test negative for Africanized bee infestation, they are then put into the hives to begin pollinating plants and vegetables.

Recently, Beekeepers in the Mobile area have had to contend with bears attacking their hives. "It's our fault", said Smith. "We have taken away the bears' food sources, their land, and their homes. Bears are usually shy, and they will run away at the first sight of humans. But when they are hungry, they come in closer to our houses looking for food. I feel sorry for them."

Smith worries about the approaching winter. "Last winter was so cold, and it stayed so long that when spring came, there was not enough time to build a strong workforce for pollination. Many plants, like some of the oaks, don't have many acorns. Many fruits and nuts did not get pollinated, so there aren't any nuts. Animals rely on the acorns, the fruits, and the nuts. When there aren't enough, the animals are hungry, so they come closer to humans. This always causes trouble."

Smith's pioneer spirit is evident in everything she does. She works with other Beekeepers to find creative ways to protect their hives from the bears. Some have built heavy-duty fencing around the hives. She has also worked with wildlife officials to find solutions to the problems created by hive invasion.

Smith owns land in Choctaw County, Alabama, and allows a friend to keep his bees on her property. "We have to watch for two-legged 'bears', too" she laughed. In fact, many beekeepers keep locks on entrances because of human intrusions.

Smith loves the land and spends much time outdoors enjoying nature. She delights in telling about hearing a cougar crying out in the night in the wooded area surrounding her home in Turnerville, Alabama, about 12 miles north of Mobile. She has also spotted bears near her home.

Smith's three children and grand children live in other states, so she keeps herself busy with her chickens and her volunteerism. She is a certified master gardener, who gives advise on plant and vegetable pollination. In addition, she speaks at various venues, educating the public on the importance of bees. She also assists the Mobile County Beekeepers' Association when they have guest speakers.

"Beekeeping should mean a whole lot to everyone," she explained. "People need to love and protect bees because they are our friends. All of us depend upon bees! Without bees, we are in trouble. None of us would survive!" 🐝

Addendum: I am so sad to report that Margie Smith passed away unexpectedly on November 3, 2014. It was a joy to spend time with "Miss Margie," because she was a person who had devoted her life to making a difference. This delightful lady shared her knowledge and her passion for life with all who met her. I send my prayers and condolences to her children, family, and friends. Rest in peace, "Miss Margie"!) — Carolyn

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Above: Feather damage sustained from mating. Right: Hens wearing their aprons.



Saddle up your chickens!

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Let's face it, information about "manufactured" food would scare anyone. With children in mind, we knew we needed to take certain measures to keep our family healthy and rely less on the food production standards set by "Big Ag." Like many others, homesteading became the only real option for us. After acquiring a small piece of land in the foothills of the Rockies we were quickly on our way. What does every farm or homestead need or seem to have? Chickens. That was the one thing my husband and I knew we wanted, and, within a year, we converted the existing run-down greenhouse into a chicken coop.

Over the years, our coop grew to having almost 100 chickens. As many chicken owners know, chickens not only provide beautiful, fresh eggs, but also loads of entertainment. However, you will quickly notice how nasty they are to one another. They will strip feathers away and even cannibalize each other. Once the back end is exposed and bleeds, a chicken can relentlessly be attacked, leading to its demise.

Even before we introduced standard-sized roosters, the hens at the wrong end of the pecking order

would get pecked raw.

Enter the rooster

While it is not necessary to have a rooster in your flock to get eggs, having a rooster has its advantages. First, he will of course, fertilize the eggs, naturally helping the coop stay young with new chicks. He will also guard and protect his flock. A good rooster will keep an eye out for any danger. With one warning crow to the hens, they will run to safety. If need be, the rooster will often sacrifice himself. We have saved and lost some roosters to foxes, so we can attest to this fact.

The problem with having a rooster (other than he's not laying eggs), is that the same claws that are for fighting and defending, tear up the hens when he gets a little too "frisky" (mating).

At times, he may even scratch the flesh off their backs. If not isolated or treated in time, these hens would get infected, die and yes, get eaten by the flock. Not pretty.

The old solution

We knew that most chicken aprons/saddles would help with our chicken problem. What is a chicken apron or saddle? Basically, it is a device that you put on your chickens to protect them from roosters during mating. It also covers the raw/ex-

posed areas from other chickens, allowing the skin to heal. For the overly aggressive hen/rooster, it functions as a psychological deterrent. Meanwhile, it provides the over-pecked bird with both a little armor as well as something that distracts the more aggressive one. The right apron/saddle (with the right color), can also help you locate a free-range flock.

The down side

Where do I start? Well, there are various sites online, which offer free tutorials on how to sew your own saddles. However, I frankly didn't have the time, nor the motivation to sew over 50 aprons for my flock. An alternative would be to buy them from someone else. But at the price of at least \$7-\$11 each, it was simply not cost effective for us to purchase these to protect a chicken that cost us about \$2.50 per chick (for an expensive one).

Traditional aprons are sewn with fabric that will tear under normal use and will freeze when wet. The elastic bands that keep it in place will stretch out and/or break. Regardless, it will fall off. In the mud. In a coop. Need I say more? Traditional aprons are temporary chicken clothes that may fall apart within a season. Good idea, less than stellar result.

Our solution

We were determined and came up with a cheaper, better apron. Made from vinyl, the design needs no sewing, strings, and little to no washing! I certainly did not want to have to wash these things. We also added fake eyes to help deter predators and offer an extra layer of protection for both hens and roosters. We designed them to be lightweight, weatherproof, easy to put on, and dirt cheap. They worked so well for us we thought that they might be useful to other homesteaders as well so, in 2012, we started selling our Chicken Armor hen saddles. Since then, we have sold over 11,000 saddles worldwide. We are proud to offer them at www.chickenarmor.com for as low as 75¢ each.

Happy homesteading! e

The horse barn:

'Tis the season, for wintertime hoof care

By BRYAN FARCUS MA, CJP
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It's that time of year, once again, and I'm finding that the evening chores at the barn are getting a bit hurried. At times, it can be quite a challenge to use-up that last sparkle of daylight. Though I do enjoy the change of seasons, I tend to dread the thought of what inevitably follows. For those of us, who are horse owners, a shift from September to December can be a major concern. Buttoning-up the barn, securing that wobbly fence and getting the winter's hay stored are all time consuming and, perhaps, worrisome tasks. Fortunately, our horses don't have such cumbersome concerns. Horses are one of the most adaptable creatures on earth and with an appropriate level of care; their transition to winter is normally effortless. Seasonal change tends to be gradual, which allows our horses the time to adjust. Your horse's coat and his hooves are a prime example. Hooves, in particular, are designed to withstand an amazing variety of extremes. For instance, a healthy hoof can accommodate moisture change, tolerate temperature shifts and adjust to various load requirements, all at the same time. To ensure that this process works as nature intended, it's extremely important that all foot structures work in harmony. There are five that are primary. These "functional five" are:

1. The hoof wall: designed in a tubular fashion to absorb moisture from the ground, as well as retain its elasticity while weight-bearing.

2. Sole: a callus tissue located at the bottom of the foot that functions as a pad to help absorb shock and reduce concussion to the internal bone column.

3. White line: This connective tis-



"A healthy hoof can accommodate moisture change, tolerate temperature shifts and adjust to various load requirements..."

sue is approximately 2-4 mm in width and acts as a "buffer zone" between the wall and the sole. The appearance of the white line is a major indicator of how healthy the foot is. It can be referred to as "the window into the horse's hoof." Any distortion or disturbance in its connection to the sole is a hint of internal hoof stress. In such instances, it is a red flag that your farrier and/or veterinarian need to know about. Simply committing to routine farrier visits can go a long way towards treatment and in many cases prevention of problems.

4. Frog: a softer tissue of a triangular shape that serves to provide traction and aids in the blood circulation of the limb, due to its expansion capabilities.

5. Coronary band/periople: located at the top of the hoof, where the capsule meets the hair skin of the leg, is also a major player in the expansion mechanism of the entire hoof. This tissue is analogous to the cuticle of your fingernail. It provides a smooth, flexible connection between the wall and the skin. It also provides us with a great way to monitor the moisture

within each hoof. When a hoof is beginning to lose moisture, the periople will become "scaly" or "chalky" in appearance. When over saturation of the hoof occurs the periople will appear "sticky" or "gummy"; quite similar to experiencing "dish-pan hands."

Cold weather concerns

From time-to-time, conscientious horse owners begin to question their horse's ability to brave those cold winter nights. As a practicing farrier, having worked in the "snow belt" regions of northwestern Pennsylvania and eastern Ohio, I have witnessed the incredible resilience of horses when faced with those wicked, bone-chilling temperatures. Interestingly, the most questioned condition of frostbite in horses is the least common. Most people assume that the horse's toes chill just as rapidly as their own. Though it is true that horses, like most mammals, protect their vital organs against abnormally low temperatures by shunting blood supply from their extremities to aid

in warmth, horses have a remarkable ability to shunt a great deal of blood from their hooves and still maintain normal function of their feet. According to an interview, conducted by Marcia King, Dr. Andris J. Kaneps of the American College of Veterinary Surgeons, and professor at Oregon State University stated:

"We don't understand blood shunting of the horse's feet very well, but there is some type of protective role to the feet in cold weather. It's empirical information because we know a horse can stand all day in a snow bank and not get frozen feet, whereas if you or I stood in a snow bank, we'd have frozen feet pretty quickly. The hoof capsule helps protect and many of the tissues in the foot can sustain some level of decreased blood flow naturally without being damaged."

What's in your forecast?

By most accounts, the best advice for preventing any cold weather complication for your horse, is to

make sure he has access to enough drinkable water (contrary to popular belief, eating snow is not enough), keep him in an area that allows him to move around freely, offer an adequate amount of forage, and provide a shelter for a chance to get dry and for a windbreak. If he has no access to a shelter, a weatherproof blanket can be beneficial. Many horses are smart about using trees and even each other to stand tail-to-tail as a natural windbreak. Whether your horse is shod or bare footed, it's important to maintain his hoof care. Your farrier can spot subtle changes and take necessary steps to keep your horse's feet in good working order. It's also a good idea to take notice of how your horse postures. Does he seem stable and sure-footed when moving about in the snow? Is he extremely uncomfortable in his steps and, perhaps, tender footed? During those wet, "packing" type snowfalls, a daily hoof picking can be helpful in preventing ice build-up and snowballing of the feet. In some cases, frozen mud or other

debris may adhere to the sole and cause bruising. Again, your hoof pick can help. In both situations, you may even consider applying a non-stick solution to the bottom of his hooves. Common household products, such as Vaseline, cooking spray or WD-40 spray can be very effective.

As a general rule, most horses can tolerate a "dry cold" much easier than a wet or damp chill. By preparing ahead of time and establishing a good wintertime routine, before that first flake hits, you can finally sit back, relax and without any worry, let it snow — after all, it is the season! ❄️

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The horse barn:

Patching up Pacheboy

Cancer in remission with low pH diet

By RENEE RICETTO GRUL

Though they knew nothing about horses, Benson decided to go out and buy his sweet elderly mom-in-law four...yes, count them, four—and not the little kind. They quickly realized horses were not like their cattle and required far more attention. As the ranch was a weekend home and they lived an hour away, they recruited a few neighbors familiar with horses to help out.

Horse Girl (HG) had recently moved to the south from the upper Midwest. She was retired from the corporate world, content to spend time on their little organic hobby farm. Over the past 20 or so years HG had owned and worked with many a horse. As her husband traveled frequently, she offered to help out her neighbors a bit.

The horses were: Charley, the stunning Palomino, who led one to believe he was always a slow dum de dum quiet well behaved gentleman...until a novice mounted; Ellie (yes, named after Ms. Ellie) the sweet and skittish little tri paint mare; Skeeter, the rambunctious dog-like teenager QH who adored people but needed to work on his horse skills; then, there was Apache (Pacheboy).

Benson had picked up the horses at a local auction and it was quickly apparent Apache was at the bottom of the pecking order and seemed to quietly succumb to his appointed station in life. He was always off eating alone as the other horses chased him away. Sadly there were large battle scars on his hindquarters and throat from either a human or another horse. It seemed he adopted

the attitude and knew if he just kept a low profile he would be fine and survive.

Apache was a beautiful black and white paint quarter horse with one blue eye. HG was amused at the name of "Apache" Benson had selected as he was anything but a "War Horse." The nickname "Patches" evolved into "Pacheboy," she naturally fell into calling him, seemed a better fit—he seemed to be emotionally and physically patched together just like his black and white patchwork. HG noticed he had difficulty looking her in the eyes, most likely from the understandable distrust of humans due to mistreatment and cruelty.

One of the first items on HG's list was to hire a natural horse farrier in June of 2013. While trimming Pacheboy, the farrier voiced concern over his swollen sheath area. There was a pea-sized nodule, the scrotum area was quite enlarged, and he was unable to fully retract as he naturally should be able to. The farrier suggested a vet be called in ASAP, as sadly this would be the fourth black and white painted gelding she knew personally in Georgia to succumb to penile squamous cell carcinoma.

The farrier was a walking encyclopedia when it came to the natural care of horses and shared that fescue grass in the south is primarily what horses graze on. It is a genetically modified grass originally created for cattle to put weight quickly on for slaughter. Horses have a completely different digestive system and the high sugar content in the fescue grass ends up in the hind gut and wreaks havoc on the horse's body in different forms, including cancer. Laminitis, she

explained, being the most common disorder especially in spring and fall when fescue grass has the growth spurts and sugar is at its peak.

A few months earlier HG had run across some interesting alternative articles on natural cures for cancer in her own personal research. One website in particular had captured her attention. It was "phkillscancer.com." A man named Vern was living a normal life (and still is five years later) when he was diagnosed with medically documented stage four prostate cancer. It was in his bones and Vern was given very little time to live according to his doctors. With no medical background and through research of his own in natural medicine, Vern learned of cesium chloride curing cancer and decided he had nothing to lose by ordering some. While awaiting his order he discovered baking soda has overall the same components of cesium chloride and decided to create his own cancer killing protocol. What it boils down to—cancer is unable to survive in a high pH (alkaline) state or in a highly oxygenated state. Baking soda provides both of these environments. *Change the environment, you then change what can survive in that environment.*

A passionate advocate and believer of using the natural medicinal properties her Heavenly Father had created for our prevention and healing of disease, HG knew first-hand the main difference between modern western medicine and natural medicine. Natural medicine dives into the cause and treats the actual issue, whereas modern medicine typically treats the *symptoms* of the actual issue.

On 7/8/13 a vet came to diagnose Pacheboy and the notes read: "Exam—suspicious area of squamous cell carcinoma at right base of penis/sheath; small pea-sized nodule; area small enough at this time that surgery is a good option, but no guarantee of how long before it returns. Does not seem to be bothering him at this time. If surgery an option, please call for referral to UGA (University of Georgia) or Auburn." The cancerous tissue was approx. 1.5 x 3 inches. The vet said if surgery was

decided upon they would remove all the cancerous lesions. Pacheboy would have medical seeds placed in his sheath area to continue treatment. She also said the cancer will come back and it will be a long painful illness until the horse is euthanized.

HG shared with the vet she would also like to suggest a promising alternative baking soda treatment to the family. The vet was firm with her to first give the family the option of proceeding with the painful expensive surgery — while politely trying not to roll her eyeballs and snort with laughter at HG for the ludicrous suggestion of using baking soda to cure cancer.

After analyzing the situation, HG decided to take this treatment one step further by creating a baking soda/ACV (apple cider vinegar) paste and applying it to the actual lesions. ACV is the only acid vinegar that turns alkaline in our bodies and is well known for its healing properties. Unpasteurized ACV with the “mother” in it is by far the best. The vet told her if the paste is used to expect the lesions to get worse before they got better. It would most likely act as an abrasion and irritate the cancerous area in the beginning of the treatment.

HG shared the sad news with this special family and Benson confirmed indeed they did not wish to spend all the finances on a horse that would eventually perish. But, Benson told HG to “go for it!” and give the natural treatment a try.

Each day while feeding the horses HG would place cotton balls soaked with hydrogen peroxide on the large lesions for a few minutes. The oxygenated bubbles loosened the scabs, which were removed and the baking soda/ACV paste was then applied. One quarter cup each of baking soda and ACV was also placed in Pacheboy’s grain every day. Within two weeks HG witnessed what had been a sluggish horse who previously had no desire to look her in the eyes, started to respond. The best part? The swelling of the scrotum was significantly reduced!

Seven weeks later HG contacted the vet to come and re-examine Pacheboy. Half-way through the treatment period HG was fascinated by the positive results and forwarded a few pictures to the vet. The vet shared she did not find it necessary

“Apple cider vinegar is the only acid vinegar that turns alkaline in our bodies and is well-known for its healing properties.”

to return for a re-exam and suggested HG just send more pictures. HG held her ground and insisted the vet come for a recheck knowing very well how vital medical documentation is.

On 9/10/13 the same vet came out and her notes read: *“Caretaker has been using alternative treatment (baking soda/apple cider vinegar) for squamous cell carcinoma of the sheath; area is no longer ulcerated and skin is healthy in appearance. Slight thickening where initial area began, but otherwise greatly improved. However there is now another small ulcerative lesion developing dorsal to the original lesion; lesion is only mildly inflamed and recommend to begin treatment on that area with baking soda on that area as well. Surgery is not an option for owner at this time.”*

For a couple of months Pacheboy was doing great and HG settled into a comfortable routine of staying on top of the cancer. The typical daily maintenance consisted of allowing the scabs to soak off, remove what was left and allow good blood flow in order to introduce the baking soda directly into the bloody cancer root system, which was deep and resembled a tree root. HG now viewed the daily baking soda/ACV application as a preventative rather than a full-blown war on cancer.

The weather started cooling down and HG noticed to her dismay Pacheboy’s lesions had come back strong in less than one week. Alarmed, she called the same vet again and the diagnosis on 10/25/13 read: *Exam: progression of SCC on right side of penis and adjacent sheath*

over past few days. Today there is swelling of right sheath only and he is much more sensitive to cleaning and handling; first signs of pain since symptoms were documented.”

Then the lightning bolt hit her in the head and she realized what a dummy she was. It was fall and not being from the south it had slipped her mind fescue grass creates high amounts of sugar. The horses had been turned out to the fescue-laden pasture only the week before — this had to be it! In addition,

she realized Pacheboy’s daily grain rations consisted of oats and a high quality sweet feed — full of sugar and carbs (which turns into sugar). All grains and treats with sugar and high carbs were immediately withdrawn from his diet, including carrots and apples. The cancer once again quickly diminished.

Earlier in her research HG had also learned sugar feeds Candida (yeast) which is a fungus in the body and overloads of Candida are directly related to the formation of cancer. She knew this was the crucial piece to the puzzle with what was going on with Pacheboy. Western medicine is finally recognizing sugar can be a poison and a primary catalyst behind cancer and autoimmune diseases.

One other additional thought HG had is the state of Georgia is based on acidic red clay, so if a horse is drinking well water, they are drinking water that has been filtered through acidic soil and it furthers a body’s battle of alkalinity vs. acidity. HG also wondered why it seemed the genetic disposition of black and white paints led them to be more susceptible to this type of cancer.

Pacheboy is still doing great in the fall of 2014. A smaller lesion is still present but is managed with the same application of baking soda and ACV. HG planted a big one on him recently and said he hopefully would be saving a multitude of horse’s and people’s lives with this story of survival and purpose from this special friendship between a family, their horse, and his horse girl. 🌸

The goat barn:

Pneumonia in goats

By CHERYL K. SMITH

If you raise goats, sooner or later you will have to deal with pneumonia. It is a common illness in goats, which can occur in both kids and adults. In some cases, pneumonia is infectious, but in others, it is specific to the goat and not transmissible. Pneumonia is an inflammation of the lungs, caused by some sort of irritant that affects the lining of the lungs.

How do I tell if my goat has pneumonia?

Signs that a goat has pneumonia include a moist painful cough, difficulty breathing, runny nose and/or eyes, loss of appetite and depression. Not all coughing or runny noses are caused by pneumonia, however. The first step when you notice that a goat is acting "off" or has some of the symptoms of pneumonia is to take a temperature. A temperature between 104° and 107° F, points to pneumonia.

Next, put your head down to the goat's side, back a little from the shoulder and listen to the lungs. (If you have a stethoscope, use that.) If your goat has pneumonia, you may be able to hear crackles when she breathes.

What causes pneumonia?

The most common cause of pneumonia is bacterial infection. Mammals normally have bacteria in their lungs. It is only when they have other stressors that they are unable to stop an overgrowth. In goats, the most common bacteria that cause pneumonia are *Mannheimia haemolytica* and *Pasteurella motocida*.

Causes of pneumonia

- Sudden changes in weather
- Viruses, including CAEV
- Poor nutrition or dietary changes
- Stress of transport
- Microbes, such as *Mycoplasma*
- Bacteria, such as *Pasteurella*
- Lungworms

Viruses are common in goats and can sometimes increase susceptibility to respiratory infections by inflaming the throat and lungs. The lentiviruses, which cause ovine progressive pneumonia (OPPV) and caprine arthritis encephalitis (CAEV), can lead to a chronic pneumonia in goats. Unfortunately, these cannot be cured and will eventually debilitate and kill a goat.

Lungworms can also chronically irritate the lungs, leading to pneumonia. They are most common in the cooler months, and are spread when larvae are coughed up, or when they are released in the feces and then mature. They are killed by hot water and hard freezes, but because they use snails and slugs in their development cycle, they thrive in cool, wet conditions.

Lungworms cause a dry cough, which is easily treated, although it may leave the goat with a chronic cough if they are severe enough. A special fecal analysis, called a Baermann, must be done to definitively diagnose lungworms. Treatment is 2X

the cattle dose of Valbazen for three consecutive days, or 2X the cattle dose of Ivermectin for three consecutive days. Repeat in 14 days.

Mycoplasma is a particularly frightening cause of pneumonia. It is not a true virus and is not easily cured with antibiotics. It can cause a contagious *caprine pleuropneumonia* in goats. It also causes some of the same symptoms as CAEV, including inflammation of the joints, the udder and the eye. The drug of choice for treating mycoplasma-related pneumonia is tylosin, or Tylan. Mycoplasma pneumonia is highly contagious and can be spread to kids through milk. (Read the excellent article on Mycoplasma at <http://www.dairygoatjournal.com/86-6/mycoplasma/>.)

How can pneumonia be prevented?

As with many health issues in goats, management is the key to preventing pneumonia. Make sure that goats have proper shelter and can get out of the elements when they need to. Avoid overcrowding and other stressors. Make sure they have a good diet, with adequate minerals and fresh water. When a goat does get sick, isolate her from others. This serves two purposes: It keeps the other goats safe from getting the illness and it keeps the ill goat from getting bullied by others when he is down. (A caveat here: if you only have a few goats and they have never been separated, you may determine that it is too stressful on the sick goat to separate her from her family.)

Goatkeepers with larger herds sometimes vaccinate their goats

against bacteria that cause pneumonia, but in small herds it is uncommon enough that the cost and trouble may not be justified. I have never vaccinated my goats against pneumonia and have not found it to be a problem. If you are interested, Colorado Serum Company makes a vaccine for this. The dosage is 2 ml subcutaneously (SQ) twice, two weeks apart.

Is pneumonia in young kids different?

While newborn kids are exposed to the bacteria by their mothers and other goats, they also receive antibodies in colostrum, which helps to keep them healthy. This is one reason it is essential for newborns to receive goat colostrum. Other factors that can lead to pneumonia include living conditions—overcrowding, lack of ventilation and lack of cleanliness; stress—travel, being suddenly removed from their mother, or even chased by children; or another condition that has injured the lungs—such as lungworms or a virus.

Young kids are of particular concern because they can die quickly once they get pneumonia. They tend to lose weight, become lethargic, develop a runny nose and rapid breathing and run a moderate fever. The first sign is their loss of interest in nursing. This is easier to detect in bottle-fed kids for obvious reasons.

Time is of the essence in treating pneumonia in kids because if it isn't detected and treated early, their lungs may get damaged. When this happens the kid may recover, but will be prone to further bouts of pneumonia, development of a chronic cough, and may not grow as well as healthy kids.

If you find that a kid with other symptoms of pneumonia has a high fever, you can give him 1/4-1/2 of a baby aspirin. Because a fever is nature's way of fighting infection, a moderately high temperature may not need to be decreased by medicine.

How is pneumonia treated?

Regardless of the cause of pneumonia, giving the goat plenty of



If your kids aren't their usual playful selves and have a moist, painful cough, you might suspect pneumonia.

fluids is essential. Especially in colder weather, adult goats prefer warm or hot water. Some people add a little blackstrap molasses or even concentrated grape juice to encourage them to drink.

Kids that are not nursing or taking a bottle need to be tube-fed. All goat owners who are planning to breed their goats should make sure to have tube-feeding equipment on hand. You never know when you will need it.

In severe cases, SQ injections of sterile water will help, unless you can afford to contact a vet to place an IV for sterile water. Give Banamine or another anti-inflammatory drug to reduce fever and inflammation and Benadryl syrup (1 teaspoon for kids) or another antihistamine for congestion.

For bacterial pneumonia, give antibiotics. Naxcel is labeled for goats and is considered the drug of choice for the most common bacterial pneu-

monias. It is a prescription drug with a short shelf life. Make sure to give the whole course of antibiotics, according to veterinarian instructions. For particularly serious outbreaks, some goat owners treat all exposed goats with a course of antibiotics to prevent more sickness.

If you manage your goats right, you can mostly avoid sickness. But every so often one of them will get sick, no matter what you do. Pneumonia is one of the culprits. This is why it is essential to look at your goats at least twice a day to make sure they are acting like themselves. If you catch it early, the odds are good that you can nip it in the bud. 🐐

Cheryl K. Smith has been raising miniature dairy goats in the coast range of Oregon since 1998. She is the author of Goat Health Care and Raising Goats for Dummies, both available from the Countryside Bookstore, 1-800-551-5691; www.countrysidemag.com.

Homestead pests:

Flea control on the homestead

By Cassie Langstraat

Why do fleas have such a scary reputation? They are half the size of regular flies, and they can't even fly... Yet they cause twice the fear. I'd say most of it has to do with that good ol' thing we call history. You know, that thing that happened a long time ago. I think it was called the plague or something? Everyone always associates these darn fleas with these massive outbreaks of disease. Yes they did contribute to the spreading of these diseases, centuries ago, but here's the catch: there was a disease to begin with back then.

Paul Wheaton, the crowned "Duke of Permaculture" writes about this association between disease and fleas in his article, "Die! Die! Whatever." He encourages people to stop with the freak out. He talks about how most people panic about fleas in their house because they think the fleas will somehow infect them with deadly illness. In reality though, the chances of that happening are slim to none. He explains,

"To get the plague you also need rodents. But not just any rodents, the rodents must have the plague. The fleas must bite the rodents and then bite you. Since fleas don't travel far, and this page is about controlling fleas in your home, you would have to have rodents with the plague in your home. Nearly all plague cases involve rodents living far away from people's homes. Therefore, the odds of you getting the plague from a flea in your home is about one in a skillion jillion. You have a better chance of being elected president and then getting hit by lightning on your first day in office."

There you go. Paul makes a great point about how there is no better way to gain profit than instilling fear

in consumers. That is precisely why this conversation about fleas causing mondo death keeps resurfacing. The people who want our cash keep pouring it out so we all get scared and buy a bunch of toxic gunk. No more. If you want to actually deal with fleas without poisoning your home and yourselves, read on.

Before we get to the whole getting rid of them part, it is really important to get to know them a little bit. Keep your enemies closer, remember? Anyway, Paul talks about how many businesses that sell these chemical poison flea controllers exaggerate the numbers regarding flea reproduction. They do this often to, you guessed it, scare you more!

They take the absolute highest possible egg production of a flea and throw that number around to scare people into thinking they are going to have a major flea infestation so they buy more poisons. However, the numbers they spout are not reality folks. If you look at the hard facts of flea life you will see it is actually difficult for fleas to survive in most situations, especially clean ones. So, Paul warns that when you see numbers like 125,000 fleas a month you need to take a step back and realize that someone is probably just trying to sucker you for money.

Another thing to be wary of is the misconception that each itch means a new bite. You probably won't sense the initial bite but you will get an individual itch five to six hours later. Then another one will

happen about 24 to 48 hours later, but from the same bite. Paul talks about how this again turns on people's panic zone because they think there are way more fleas in the house than there actually are.

Now that we have established and overcome the fictions about fleas, we can move on to actually dealing with them. According to Paul, the best option is diatomaceous earth (DE). This is a white powder that is a type of hard-shelled algae. Paul explains that it works on any insect with an exoskeleton. At a microscopic level, this stuff is really sharp so it works by getting into the joints of the insect and basically just cuts it up. Either that, or it scratches the insect's waxy layer, which allows moisture within the insect to escape.

The good and most important thing about DE is that it is totally fine for it to get all over and inside humans and pets and livestock. Paul mentions how tons of farmers use this to get rid of insects in grain and how they feed it to all their animals to get rid of whatever is bothering them. For home use, Paul advises to spread a consistently paper-thin layer on your carpet and leave it for a few days, and then vacuum away! There are two cautions on this front — make sure you get food grade (not pool grade — that has icky stuff in it) and try to avoid breathing in massive amounts of this stuff. Just like avoiding inhaling massive amounts of any kind of dust. Also, make sure to keep this stuff dry! When it gets wet, the whole being sharp thing no longer happens. Therefore, Paul concludes that if and when the DE gets into your lungs, it is not actually hurting them. You just sometimes cough just as flour would make you cough. (Ed. note: We would advise keeping children



and pets out of the room.)

There are a few other tactics to flea control. Vacuuming does the trick because fleas want to leave their cocoons when they feel vibration. Obviously, the vacuum provides this. Paul advises to add DE to this technique because then they will end up in the vacuum bag with it. Just spread DE all over the floor in between vacuum periods and you can get away with only vacuuming once every three days.

A good way to track your progress with any flea control is setting up a little light trap. Fleas are attracted to light and they drown easily. So, you can just set up a little lamp shining onto a plate of soapy water and wait 'til morning. Count how many dead fleas are in the water each morning and hopefully watch the number decrease. This tactic alone will probably not get rid of all of your fleas but is a good way to measure the amount you have and if your flea control tactics are working.

Another strategy people have found useful is a dehumidifier. Paul

explains that fleas need 50% or higher humidity to live. They need water and they can't really get it from anywhere but the air, so it makes sense, get rid of the moisture in the air, and they will dehydrate and die. That is the theory anyway. Paul has done a few experiments with this that have not been hugely successful, but he mentions that he really does think it has potential.

The next tactic that comes up a lot with flea control is heat. There is actual science behind this one so it has some merit. Although, Paul notes his personal experiments have been lacking. However, both of his heat experiments were conducted on rainy days so he believes that the relative humidity from the rain stayed high enough to keep the fleas alive.

Many people also claim that Mshampooing or steam cleaning your carpet can get rid of fleas. They would either drown in the soapy water or die from the heat of the steam. This is nice because it affects the flea at all stages of life. However, Paul notes that DE will not work with

this because of the whole being wet thing. Also he touches upon the fact that some people believe this to be ineffective because the shampooing does not put the fleas under water long enough for them to drown. You just gave them a moist place to reside, fleas like moist. So, maybe steam is the best option out of these two. Extreme heat equals no fleas.

A really easy tactic to consider is Alightening up on the carpet load. People who have carpet-less homes rarely have flea problems, so this could be worth it if you aren't having success. Another thing to keep in mind is to be consistent in washing your clothes and bedding. Paul points out that if you have flea bites above your knees, then they are definitely in your bed. Keep your stuff washed.

On the pet front, Paul has one main suggestion: flea comb. He says to flea comb the animal so that the fleas end up in soapy water. Also make sure to keep your pet's bedding washed and dust the bed and the pet with DE. (Again, using food grade DE.)

The last hugely important thing to talk about is the ol' poison issue. Here is a nice way to put it — *don't use it*. Nearly all of the warning labels on these chemical flea controls will say it all. You will end up poisoning yourself and your animals if you use this toxic crap. Paul makes a huge note about not using borate powder. He realizes that it says it is the least toxic but in reality, this stuff is bad too. The same thing goes for pyrethrins/pyrethrum. It gets pushed as natural and non-toxic, but it often causes poisonings with all sorts of terrible symptoms. Flea bombs — another horrifying idea — you are literally putting poison on everything. And if it isn't already obvious at this point, don't use flea collars on your pet. Poison, all over your loving little ball of fur. No thanks.

Basically, diatomaceous earth is going to be the most effective route, however there are definitely many options out there that can work while still avoiding the whole poisoning everything and everyone you love thing. 🌿

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The homestead kitchen:

Waste not; want not

The power of potatoes

BY SHIRLEY BENSON
WISCONSIN

Waste not—want not, an old saying I remember my father repeating to me many times, usually when I was leaving too much potato on the peeling. “You might wish you had that by spring,” he would add. So much food goes to waste every day. People plant a tree in their yard and eat only a little of the fruit. They raise a beautiful garden and then eat some of it fresh, give a bit to neighbors and the balance goes to the garbage can or compost pile. Storing our homegrown foods for future use is one way of stopping much of this waste.

Whether your interest in preserving foods is in eating pure food without all the additives and preservatives, preparing for a disaster or just for the money you can save on the grocery bill, home canning is my favorite method. I have always had the luxury of a garden space or in these later years had friends and family who are willing to share. In recent years most of my foods are surplus that others do not need. I have even canned on shares. Many workingwomen manage to raise a garden but canning takes so much time. Time I have, so they furnish the produce and their own jars, and I do the preserving for both of us. That way we both have a pantry full of nutritious inexpensive food and manage to live within our income.

The potato has always been my favorite food. It is odd because we ate so many of them when I was growing up, you would think I would be tired of them. A cellar bin full of potatoes meant we ate well all winter. We had them three times a day. They can be prepared in so many different ways and compliment almost any food you choose to serve with them.

For years we were told the lowly potato was not good for us because, except for a bit of potassium, it was mostly starch. I could never quite believe this because the Irish people had survived with little else for generations. Today the powers that be are beginning to think differently.

Early last fall my brother and I were talking about potatoes when I mentioned how much I liked those little red ones. He said he had a lot of those left after he had sorted his potatoes and he would bring me some; they were going to be thrown out. To me, that is the ultimate challenge—to save something that would have been wasted. I should have known he never does anything half way. I must have had 50 pounds of potatoes, some as large as a half dollar, but most were smaller.



Newly dug potatoes are very easy to peel. Brush them under water with a small vegetable brush and the skins slip off. These had been dug for a few days and had already begun to dry; the only thing was to peel them. I decided to can a few jars as they were so good, but that would be it. After a couple of hours I had nine pints ready for the canner. To can your potatoes just follow the instructions in your favorite canning book. I do all my canning in a pressure canner, especially potatoes, as they are high in starch and very low in acid.

The next morning those shiny jars

looked so good sitting on the counter, I decided I would do a few more. I refused to peel any potato that was smaller than a marble, but in the end I had 35 pints of beautiful snowy white potatoes and they cost me some salt, a little electricity and a jar lid. Now came the fun time—experimenting with new recipes.

If you have never used home canned potatoes; you are in for a treat. They make wonderful breakfast potatoes. Canned red potatoes are very firm and easy to work with. Drain them well and shred them on the knuckle buster, and you have golden hash browns in minutes, or dice them and fry crispy in butter. When potatoes are nearly done, add a few finely diced onions and green peppers. Stir them into the potatoes and allow them to continue cooking while you cook eggs either over-easy or poached. Serve the eggs on top of the potatoes for a special breakfast.

Canned potatoes work well in complete meal hot dishes or as a side dish. Slice them about 1/4-inch thick, spread in a baking dish and top with a tablespoon of finely chopped onion. Next make a medium gravy of hamburger, pork sausage or any of the canned meats you have preserved (beef, pork, chicken or venison). Pour the meat gravy over the potatoes and cover tightly—I use aluminum foil. Bake in a 350°F oven for about one hour. It's a great dish for the extra busy days.

If you cook with canned soups you can use them in place of the meat by adding a little milk to the soup, stirring well and then pour it over the potatoes and bake. Try mushroom, cream of chicken, asparagus, celery or cheese for a pleasant variety or use your favorite cheesy potato recipe.

I prefer my own homemade sauces and gravies to avoid all the extra salt

and additives, but the soup is a quick fix when you are rushed. My personal choice is creamy chicken gravy with 1/2 cup chopped fresh parsley added before baking. Remember those tiny little parsley potatoes you had at the last banquet you attended? You thought they were so good...wait until you try your own!

I have had people tell me they live in town and have no access to free or cheap food. Look carefully; unless you live in the heart of a large city, there is food all around you. It doesn't cost anything to ask. It might cost you a little labor, but work is good for you — it saves on gym fees. Many farmers will allow responsible people to glean their fields after the harvest. We have picked peas, beans, corn, tomatoes and potatoes after the machines have finished.

A friend in California said they found a grapefruit tree in a yard near them with the fruit falling to the ground and rotting. She asked if she could pick a few and was told to take all they wanted. Just for cleaning up a few fallen fruit they had all the grapefruit they could use. Last year some people gave us pears from a tree in their yard. They ate a few fresh but did not want the rest. We had pear sauce all winter, with very little cost or effort on our part.

Harvesting on our lawn here in town is a little limited, but we gather dandelions in early spring for greens and salads as well as violet leaves from the flowerbeds. The dandelion leaves are dried for tea and the blossoms emulsified in oil make a great pain reliever for sore muscles. My grandmother used the dandelion blossoms to make a very smooth wine. A neighbor had a huge mullein plant in her flower garden last summer. This summer our lawn was speckled with little mullein plants. Gathered and dried they make a great addition to my healing herbs and teas. These few things do not make a full pantry, but if you keep your eyes open and gather where you can, it will amaze you when autumn arrives to see how it all adds up. You eat better foods, save money, and have the satisfaction of knowing you did it yourself. 🌿

Gift packages include dried soups

By WANDA CLARK

January and February days are short and cold here in North Carolina. As the co-owner of Pantry Stuffers, I purchase lots of dehydrated, freeze-dried, and powdered food products that we use for testing (and testing and testing) new recipes for books in progress — and packaging the mixes we sell. One day, we hope to sell the raw products but, for now (like many of you), I purchase in larger quantities to get the best deals I can.

With the hustle of the harvest season and the Thanksgiving and Christmas holidays behind us, I find myself with a little more time — and lots of raw products on hand. It's the perfect time to build up my personal supply of mixes. I have time to explore creative ways to share my passion with others. Many of my friends and family are still on their post-holiday diets and appreciate Valentine's Day presents focused on soup instead of the traditional box of chocolates. The cold weather is cold and flu season and is particularly tough on the elderly in the community, so it's a great time to stock up on pre-packaged baskets that we can take to the sick and homebound.

My daughter-in-law, Bobbie, and I often joke that a bowl of comfort food is like a "hug from the inside out." I cherish my time with her preparing our soup mixes to share with those we want to send special "hugs." For our "gifts," we will package our mixes in Mason jars or gift bags. For our "Get Well" packages, we focus on the "healing properties" of chicken soups. These are two of our favorite chicken soup mixes.



Here is an example of a "Get Well" basket that we would send to friends and family. The basket contains a soup mix, tea, horehound candy, and a favorite magazine.

Old Fashioned Chicken Noodle Soup Mix

1/4 cup dehydrated carrots
1/4 cup dehydrated celery
1/4 cup dehydrated onion
1/2 cup dehydrated butter
1 teaspoon chicken bouillon
1 cup wide egg noodles
1/2 teaspoon pepper

Add 1 cup chicken, 8 cups of water, and mix to a large pot. Cook until chicken is done.

Spicy Chicken Noodle Soup Mix

1/2 cup dehydrated onion
1 tablespoon soy sauce powder
1 tablespoon garlic powder
2 teaspoons ginger
1/2 teaspoon cinnamon
1/2 teaspoon cloves
1 teaspoon dehydrated bell peppers
1 tablespoon dehydrated cabbage
1 tablespoon dehydrated spinach
1 tablespoon dehydrated broccoli
1 tablespoon dehydrated carrots
2 teaspoons chicken bouillon
2 teaspoons cumin
1 cup small egg noodles
1/2 teaspoon pepper

Add 1 cup chicken, 8 cups of water, and mix to a large pot. Cook until chicken is done.



Upscale soup on a homestead budget

By JERRI COOK
COUNTRYSIDE STAFF

There are surprisingly few books on my kitchen bookshelf, and only a handful of them are cookbooks. For the most part, I keep my recipes tucked away in boxes that line the bookshelf in my kitchen. Some of them are handwritten on 3" x 5" cards. Others are printed on pieces of magazines that were meticulously separated from the page by hand in a waiting room at some doctor's office, leaving the next person who thought the picture looked good exasperated at whoever tore the recipe out. My sincere apologies. Now that we're firmly in the digital age, I've been able to cut back on that annoying habit. I can just search for a recipe online.

A couple of the cookbooks I own were given to me decades ago as wedding gifts. A couple I bought at used bookstores and second-hand shops back when gas was hovering somewhere around 95-cents a gallon. Frankly, I thought I had outgrown cookbooks. But awhile back, I found myself buying my first cookbook in the digital age—*Mr. Sunday's Soups*.

Like most people, my overall cooking skills are adequate, but there is one area where I excel. Soup. That's probably because for the most part, soup is easy and foolproof. Soup is also economical. If you're on a budget and need to impress a dinner guest, a gourmet soup is the answer, and the soup version of a gourmet dish is far less expensive, but just as impressive as the entrée it mimics. That's why I bought the digital version of *Mr. Sunday's Soups*. I was hosting a business luncheon, and I wanted to serve something a little more upscale

than the usual hotdish or casserole. Instead of disturbing the dust on my recipe boxes, I did an internet search. The results contained a favorable review of *Mr. Sunday's Soups*, so I purchased my first cookbook in decades online.

Mr. Sunday's Soups is written by Lorraine Wallace, whose husband is a well-respected news anchor who hosts a Sunday morning talk show. Because her husband was just arriving home when their teenaged children were just beginning to stir, Lorraine struggled to find a way to get their blended family to sit down and eat together on Sundays, which was an important tradition in her family. In order to accommodate the schedules of their respective children, Lorraine began making an early lunch for her family, and as the years passed that early lunch became exclusively soup. In *Mr. Sunday's Soups*, she gives 75 detailed recipes for making a wide variety of homemade soups—some old-fashioned, everyday soups and some upscale varieties you would never have thought of. She combines ingredients, textures, and flavors to create comforting and exciting flavor combinations. I tried two exactly as printed, and a dozen or so more that I altered to fit my family's tastes. I'm happy to report, all of them were a success.

Of the two recipes I followed exactly, the favorite by far was the tomato soup served with bacon. The recipe for Old-Fashioned Tomato Soup with Maple-Candied Bacon is surprisingly simple, but elegant. It consists of a combination of tomato paste, tomatoes, and stock. While I went through the trouble of candying the bacon with some homemade

maple syrup the first time, I haven't done it since. It was delicious, but the bacon I used came from a hog we raised. It was cured and smoked to perfection by our neighbor, and I didn't need to do anything to it to improve it.

I also followed the recipe for Tortilla Soup to the letter—once. The idea is great. Wallace makes a broth out of tomatoes, onions, garlic, and tortilla chips. She simmers the ingredients, then strains them through cheese cloth so it is clear. She serves the soup by putting the broth in a bowl and allowing her family members to add to the soup buffet style from the toppings she has available. I found that straining the broth was time consuming, and no one at my house cares if the broth is clear or not. Instead, I dice up the corn tortillas and leave them in the broth with the onion, peppers, garlic and other vegetables. Then, I add leftover taco meat. I serve it with shredded cheddar cheese, sour cream, tortilla chips, and salsa. It's

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While Lorraine Wallace concentrates on making original soup dishes, some of my most creative soups originated from leftovers. Leftovers make great soup. I turned a leftover chicken breast, thigh, and leg from a Sunday afternoon cook-out into a hearty barbequed chicken soup. To make the broth, I combined a quart of chicken broth, a can of tomato paste, and three ounces of barbeque sauce. I added the diced leftover chicken, which had a nice smoky taste from the cookout the day before, some dehydrated corn, sautéed onions, garlic, and green pepper along with three large cubed red potatoes. Someone gave me some flavored sea salts awhile back, and I added some smoked apple sea salt for good measure. I served it with some crusty bread I picked up in town.

One thing Lorraine Wallace does well is combine textures. Whether it's Carrot Soup with Sage and Popcorn or Minestrone and Arugula Salad soup—which combines raw arugula with hot soup—her pairings, which are original and daring, add depth to the soup and a surprise to the taste buds. It was Lorraine Wallace's adventurous dalliance with texture and taste that led me to an invention of my own—Reuben Soup with Sauerkraut. It's another leftover creation, made with pastrami, sauerkraut, and Swiss cheese. It was a huge success.

I would recommend *Mr. Sunday's Soups*, even though I couldn't quite connect with her descriptions of life in an upscale suburb of Washington D.C. The pictures of her family and home didn't help me connect either. I can barely imagine what it must be like to cook in an alabaster kitchen in a perfectly groomed upscale home, complete with a pipe-smoking husband reading the paper in a book-lined den. But I can imagine a multitude of different soups, and that's where I connect with Lor-

raine Wallace. Food is the universal language, *Mr. Sunday's Soups* speaks with a comforting warmth.



Reuben Soup with Sauerkraut

6-8 ounces of pastrami, shredded or finely diced

3 giant, peeled red potatoes cubed and par cooked

1 onion diced

2-4 cloves garlic, finely diced

1/2 cup fully drained and dried sauerkraut, finely diced

4 oz. shredded Swiss Cheese

4 oz. shredded caraway cheese

1 qt. chicken broth

2 cups milk

1/2 stick of butter

1/4-1/3 cup white flour

In a soup pot, melt the butter over medium-low heat and add the flour, onions and garlic. Stir until the butter and flour are thoroughly combined. The mixture should be crumbly. If it looks like wet sand, add a little more flour. Once the flour and butter mixture has heated up, add the chicken stock, milk, and cheese. When the cheese is thoroughly melted and incorporated into the liquid, add everything else.

One note about the sauerkraut. It has to be thoroughly drained. I do this by putting some in my hand, and squeezing the dickens out of it. A couple of handfuls of kraut got me to 1/2 cup in a hurry. Don't dice it until after you squeeze the liquid out.

This recipe makes a strong, savory soup. If you're not into strong and savory, you can tone it down a bit by substituting ham or chicken for the pastrami, and using cream cheese in place of the caraway cheese. Serve it with some warm rye bread or toast, and you won't be disappointed. ✱

The homestead kitchen:

Grind your own grain for healthful bread

MELISA MINK

Grinding your own grains may add more vitamins to your diet, as well as contribute to a better overall healthy lifestyle. Grinding your own grains puts you into a place of really being connected and informed in the area of your food. As more people become concerned about what they're eating, it really is a good time to consider grinding your own grains and becoming more "hands on" with your own food. It's a lot like walking; it goes in steps. With every step there's a little more confidence and surety as to what you're doing. Don't get overwhelmed, just try taking one step at a time.

For instance, try focusing on the grain you and your family uses and enjoys most, like wheat or corn. Then after you've decided on where to start, try making one item you are already eating by grinding flour and baking it once a week—for instance, a bread item like rolls. Most of it is time management, not hard labor. Try grinding just once a week. If you have or purchase an electric grinder, you can let it do the work while you do something else, like clean the kitchen.

My family grinds our own grains for the week to follow every Friday, while we're doing other chores. Just remember to check on it periodically.

Wheat and corn being the most used in our house, we go ahead and have all we will need for the coming week, ground up on this day. This makes it so much easier to use when we need it. It's ready and waiting. That said, we sometimes have to grind more depending on how much more we may use than planned. We also mix our hard red wheat with a light white wheat or unbleached white to avoid heaviness, and this produces beautiful bread every time. If you're using grains for bread making or baking of any kind, I would suggest blending the two. We use this mix for breads, muffins, pastry, pizza dough, and

most everything but cake.

It is well known now that we all need to be getting more fiber; and there is no greater way to ensure your own standard of quality is met, than to do it yourself. The average content of fiber in 1/2 cup of white flour is only 1.3 grams, verses the 6.4 grams of fiber in 1/2 cup of whole wheat. That's about five times more in the whole wheat flour. Our American diet has been over processed and now the increase in intestinal tract diseases are bringing that truth home.

For those of you considering blood sugar and carb content of breads, you should know whole wheat is less likely to spike blood sugar because it takes longer to be absorbed into the blood stream. This is due to the fact it contains the whole grain, there is more to break down and digestion takes longer, better measured as the glycemic index (GI). The GI of whole wheat flour is 51. The GI of white flour is 71. Vitamin content in whole wheat is greater than white flour, or any processed flour that has set on a shelf for very long. Studies have shown that two weeks after grain is ground, an average of 70% to 80% of nutrients are lost. So even buying whole wheat flour will not be as healthy and vitamin rich as the freshly ground.

We know many parts to the grain that are extracted during the cleaning



The basic dough recipe can be used in a variety of products.

process have proven to be an important part of a healthy diet, such as the bran and germ, but what about the vitamins? The term “enriched” has come to really mean: all original vitamins removed and replaced with a synthetic form. What synthetic form? Many studies show freshly ground wheat contains the entire B-complex vitamins, except B₁₂. These give our bodies energy and digestion aid. What about bleaching agents not listed in the ingredients used on the grain/flour to make it whiter and lighter? Terms like Nitrogen Bichloride, Chlorine, and Chlorine Dioxide are common bleaching agents not listed on the package. It really makes me stop and think, what am I putting into the bodies of the ones I love — and my own? Now we are really seeing the medical and scientific community beginning to praise organics, natural, and whole grains. The health benefits far outweigh the inconvenience of having to do something from scratch. It isn't just neat, or old fashioned, it's smart to be able to do things for your-



self. For better health, skills learned, and knowledge, I am glad we have made the plunge into what used to be a mystery. It's pretty easy once you have the right equipment, and a lot easier on the pocketbook than buying flour or prepackaged mixes.

There aren't many alive who will resist the fresh-baked goodness of homemade bread. Now go a step further and grind the flour for it.

A good grinder should also include the ability to grind nuts, beans, and corn, as well as grains. I use a red one called The Grain Maker, but there are many to choose from. After comparing many different designs, components, the materials it's made of and abilities, my husband (a metal worker) decided this was the best bang for our buck. It is a big expense to purchase a grinder at first, but totally worth the health benefits. After paying for the grinder, we've probably saved over a thousand dollars making our own bread flour and cornmeal with it. We like things that are one-time buys; that means well made, and this one is great for the heavy duty grinding we do weekly.

After researching grains and grinders, the only thing left you'll be needing is that “want to.” Healthier food on the table, made by hand, is my “want to.” It's one way to say I love you. Nothing says lovin' like somethin' in the oven, so here is a great basic recipe to use for bread, rolls, doughnuts, and pizza dough.

crust. If you need more just double or triple. It does fine.

1 tablespoon yeast in 1-1/4 cup warm water, let sit in bowl for 10 minutes

1-1/2 cups of your own freshly ground red wheat flour

1-1/2 cups unbleached white flour or freshly ground light white wheat flour

1/3 cup light oil, safflower or coconut oil work great

1/4 cup honey or organic sugar (put in yeast water; this “feeds” the yeast and in my opinion makes better bread)

A pinch of salt

Place all dry ingredients in heavy duty mixer, add warm sweetened yeast water, and oil. Turn on low for about two minutes, no longer. If stiff add a bit more water 1/4 cup at a time. If a little wet add flour 1/4 cup at a time. Don't over mix, just mix until blended and tacky. It will make bricks if you over mix. Turn out and place in an oiled bowl to rise 45 minutes. Then when doubled, either roll out as two logs and place in a bread pan (9 x 5) or shape into rolls half the size you would like to end up with. Place in oven to rise 35 minutes, then turn oven on 400°F. Put timer on 35 minutes and check carefully when timer goes off. Should be golden with slightly darker browned top. Yum! Serve up with fresh churned butter and local honey. For pizza, just roll out to fit oiled stone or baking sheet. Top and bake 20 to 25 minutes at 400°F.

For a freshly ground corn recipe try skillet cornbread (non-GMO). Popcorn makes a great ground cornmeal, and Orville Redenbacher's has a non-GMO variety. That's what we use for our cornmeal and it's so much tastier and healthier than prepackaged cornmeal. You get that old fashioned real toasted corn flavor missing from today's pre-ground meal. Again keep it simple and plan to prepare real things your family already likes. I had given up one of my favorite dishes for sometime because I didn't want to consume GMO corn. Now I have found that non-GMO popcorn makes great cornmeal. This is an old dish a lot of us grew up on, revived, freshly ground and now non-GMO.

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Cast Iron Skillet Cornbread

2 cups freshly ground corn. If not ground fine in grinder, place in blender on high to finer grind. It doesn't have to be a flour consistency.

1 cup freshly ground wheat flour

2 eggs

1/3 cup sugar

1 tablespoon baking powder

3/4 cup oil

Water to thin batter

Place oiled skillet in 415°F oven. Heat skillet and oil so that it will make that searing sound when batter is poured in. If it doesn't sizzle it won't flip out good, so get the skillet hot. Once hot and batter is poured, place in oven to bake for 25 minutes.

Once you've got down the basics try a few differences, like sourdough. Also, when you're grinding your flour, throw in a handful of beans to the wheat. This will help add to the ability to absorb vitamins easier. There's so many other grains also to play with. Flax seeds, quinoa, millet, oats, barley, are all very popular now. Are you gluten free? No problem, try grinding rice. Maybe a rye pumpernickel would suit better. The possibilities are only limited by you! 🌱

More can be read on the health benefits of freshly ground flour at eap.mcgill.ca and healthyeating.sfgate.com



The homestead kitchen:

Baking Blue Hubbard Squash

COUNTRYSIDE: Annette Snow asked how to cook Blue Hubbard squash and here is my version.

I used to send my foster kids outside to smash it on the blacktop, the Blue Hubbard is that hard to cut into and peel. Then I talked to an old timer at a farmers market who was selling Blue Hubbards and he told me I was making an easy job way too hard. Now I use his method.

Put it in the oven at 350°F and bake for an hour or two depending on size. I always line the oven rack below with foil, but the squash never leaks. When the blue color gets dull and you can stick a fork in it easily, like a cooked baked potato, it is done. Let it sit 30 minutes out of the oven so you don't get burned. Cut it in half lengthwise on a platter to contain the liquid and it will fall apart. Scoop out the seeds and strings for the hens or compost, then scoop out the flesh, stir, blend or mash with butter, salt and some maple syrup to taste, a dash of cinnamon works well too. There it is, mashed Blue Hubbard Squash, the easy way. It works well mashed on top of Shepard's Pie in place of mashed potatoes or drained overnight in cheese cloth and a strainer for Squash Pie. I just baked one for the Farm-to-Table group at the high school. They will have a table set up tomorrow for students to try different types of squash. I put a little extra maple syrup in this batch. — Barbara Bruno, Montpelier, Vermont

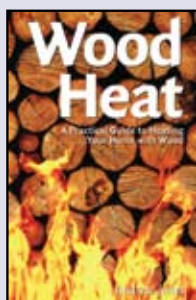
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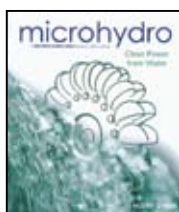


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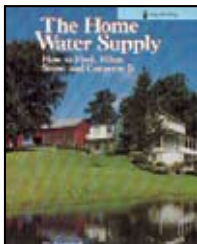


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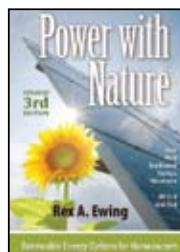


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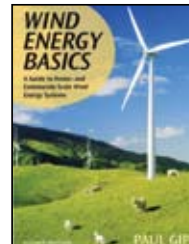


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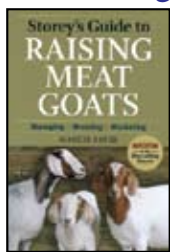
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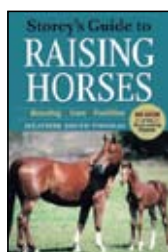
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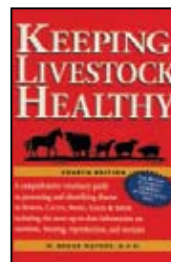
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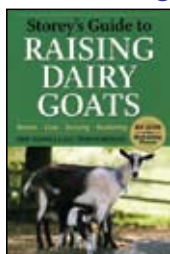
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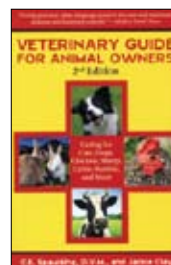
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Book reviews:

Four guides to better knitting

BY GAIL DAMEROW

If knitting in one direction, turning your needles, and purling back to the start seems tedious, skip the purling and instead knit backwards. So suggests Margaret Radcliffe in her latest book *The Knowledgeable Knitter*. I thought I was a knowledgeable knitter until I read this book brim full of detailed tips and tricks for the knitting enthusiast in pursuit of perfection.

The book is arranged according to the steps involved in knitting a generic sweater or vest, from selecting the pattern, yarn, and needles, to interpreting pattern instructions, to shaping and fitting the piece, fixing mistakes, putting the pieces together, designing necklines, adding a collar and/or pockets, and blocking the finished garment. This book does not include any patterns for knitting a piece from start to finish. It does include lots of detailed and well-illustrated directions for various techniques you might encounter in your chosen pattern. It also suggests ways you can alter your pattern for a better fit or to improve its aesthetic appeal.

A successful project requires a lot of thought and preparation before the first stitch is cast onto a needle. "Many knitting failures are the result of a bad match up of pattern and yarn," says the author. The next major choice is size. Determining what size to knit is crucial, because no matter how well made the garment is, it won't look good if it doesn't

fit. Then we come to the choice of needles—if you don't have the right size needles to get the correct gauge, the garment won't come out the size you expect.

As a young novice knitter, I skipped all that and went straight to the cast on, using a pattern I liked and the yarn and needles specified in the pattern. The sweater turned out too baggy, with sleeves that were far too long. I still have that 50-year-old sweater, and I sometimes wear it as a reminder of the folly of youth.

I have long since learned the importance of knitting a swatch to get the right gauge. It's a pretty straightforward deal—just knit a four-inch square using the yarn size and needles indicated in your pattern. If the gauge isn't right, tear out the swatch and knit another one with a different size needles. Right? Wrong!

As Ms. Radcliffe points out, if you keep unraveling and reknitting a swatch you may not know which needles came closest to the desired gauge. Instead, she suggests changing needles in mid swatch. She offers several suggestions for keeping track of which size needles were used for each section by working reminders into the swatch. My favorite among her suggestions is to weave a short length of scrap yarn through the same number of stitches as the needle size used for each section.

Selecting a well-written pattern can be another trial-and-error affair. Ms. Radcliffe lists 10 features

you might expect to find in a pattern, some of which I've never seen in any pattern. Indeed, she says, "Many of these are rarely incorporated into published patterns. If you see them, you should bless the author, editor, and publisher for helping you out by providing more detail than usual." Briefly, these features are: photos or drawings of the finished piece, gauge in rows and stitches, fabric quality, detailed yarn specifications, pattern format (row-by-row and/or charted), schematics with measurements, diagrams of construction, stitch counts, row orientation (which row to end on), and technique illustrations.

That published patterns are not consistently written is something I learned the hard way. I have successfully deciphered a cryptic pattern only to come back years later to knit it again and have difficulty trying to figure out the same pattern without having my first effort as an example. As frustrating as it might be, it's helpful to be reminded that patterns can be inaccurate, so it's not always the knitter's fault if a project doesn't turn out right.

Okay, now we have our pattern, yarn, and needles and we're finally ready to put the yarn on the needles—or cast on. Not so fast! "If it's too tight, too loose, or just doesn't look good, it will be there forever to haunt you." Not only that, but we have several different kinds of cast ons to choose from. Some cast ons are stretchy, others are less stretchy,

supportive, durable, or tight. Or we might choose a decorative cast on – ruffles, cable, I-cord, or lace.

Until I read this book, I thought I was doing well to know two ways to cast on. Most of the patterns in my collection tell how many stitches to cast on, but not what type of cast on works best for the specific project. For example, you don't want to start a sleeve cuff with a cast on that's so tight you have difficulty squeezing your hand through when you put on the sweater.

From casting on through the entire process of knitting and finishing a garment, this book details several options for each step of the way. Among many extremely helpful sections is one describing different ways to stitch your finished pieces together so the seams don't distract from an otherwise nicely knit garment.

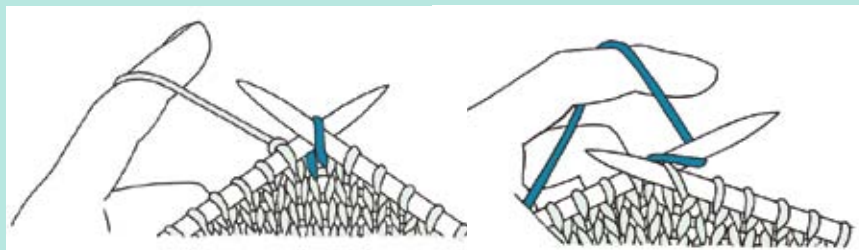
One annoying aspect of this book is that the photos accompanying the text show what each finished technique looks like, but if you're not familiar with a particular technique you're directed to consult the appendix. There you'll find instructions and diagrams showing how to accomplish the technique, but not what it looks like when finished. You are therefore left to flip the pages back and forth while figuring out how to do a technique and what it's supposed to end up looking like. I would rather have seen each technique described from start to finish in the most logical place, for example detailed cast on instructions in the section that discusses casting on. That way we could see the how-to and end-result illustrations on the same page.

Another annoying aspect is the frequent introduction of specialized terminology – such as intarsia, Magic Loop, and steek – without including definitions. Again the reader is sent scurrying to the appendix for clarification.

This book therefore appears to be intended for experienced knitters who have some familiarity with many of the techniques and terminology under discussion. Where a novice might be overwhelmed by so many new ideas and multiple options, sea-

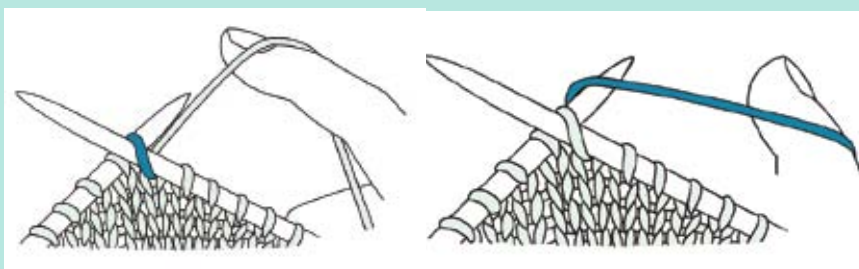
How to knit backward

This is a method of flat knitting without turning, with the right-side facing you at all times. The right-side rows are worked using the standard method. The wrong-side rows are worked in the opposite direction with the right side of the fabric facing you.



With yarn in your left hand.

With the knit side facing you, the stitches to be worked on the right needle, and the yarn in back, insert the left needle knitwise into the first stitch on the right needle (that is, through the front of the stitch to the back of the right needle) (A). Bring the yarn over the left (back) needle tip to the front, then under it to the back (B). You may need to let go of the left needle to wrap the yarn. Lift the loop of the old stitch over the tip of the left needle with the right needle, or pull it through with the left needle. Slide the right needle out of the loop.



Art by Missy Shepler

With yarn in your right hand.

With the knit side facing you and the yarn in back, insert the left needle knitwise (through the front of the stitch to the back of the right needle) (A). Bring the yarn around the left (back) needle tip from back to front. (B). Lift the loop of the old stitch over the tip of the left needle with the right needle, or pull it through with the left needle. Slide the right needle out of the loop.

soned knitters will delight in finding clever ways to perfect existing skills. *The Knowledgeable Knitter* offers so much in-depth detail I doubt any knitter could absorb it all in one pass, making it a valuable reference to come back to again and again.

Knitting questions answered

I learned so much from *The Knowledgeable Knitter* that I next turned to one of Margaret Radcliffe's earlier books, *The Knitting Answer Book*. The

subtitle of this book is "Solutions to every problem you'll ever face; answers to every question you'll ever ask." That pretty much sums it up.

Normally I'm not a fan of Q&A books because they too often present material in a haphazard, disorganized way and because they rarely pose the questions I need answered. This book surprised me in providing answers to questions I never thought to ask. Further, its brief and to-the-point questions are organized in a logical sequence: casting on, knitting basics,

binding off, needles and other tools, yarn, reading project patterns, pattern stitches, circular knitting, color, shaping, fitting, finishing, embellishments. The result is a handy reference for knitters of all skill levels.

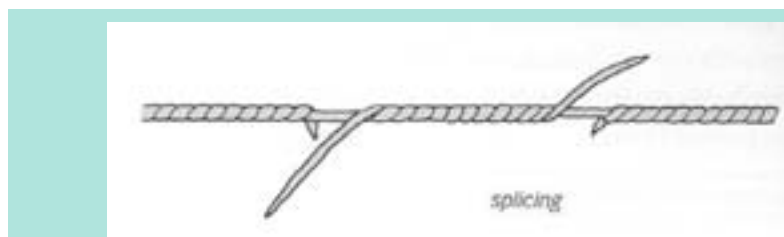
The extensive discussion of knitting needles was a real eye-opener for me. Over the years I have accumulated what I thought was a vast collection of needles—straight needles, double point needles, and circular needles—but I didn't know the half of it. This book explains why different needles have different types of points, the issues involved with different kinds of circular needle cables, and the pros and cons of the various materials needles are made from—metal, wood, plastic and nylon, casein, or cellulose acetate. Oh, boy!

And then I came to this: "Be particularly suspicious of old needles inherited from other knitters. In the past, needles were not always produced in standard sizes, and the other countries use different sizing schemes. Your grandmother's size 8 may not be the same as a current size 8. Use a needle gauge to check your needles for consistency."

Unluckily, most of my needles were purchased decades ago or inherited from a variety of sources over the



A cut-down mailing tube makes a handy holder for storing long, straight knitting needles. Photo by Gail Damerow



Art by Alison Kolesar

Splicing

When it will be difficult to weave the ends in later and you're joining a new ball of the same yarn, you can make an invisible join by splicing. This is useful in lace and reversible items like scarves or shawls, or if you just hate to weave in ends. Splicing is easiest on wool or fuzzy fibers.

Split the ends of the yarn, pulling the plies apart for about 4". Break off half of the plies on each end. Overlap these thin ends and twist or wrap the plies around each other in the same direction the plies are already twisted. Wet this section of the yarn and rub it a little to help it set in. Hold onto the spliced section while you knit the next few stitches. Take care not to pull apart the join as you knit. Once it has been knit, it will not come apart.

Single-ply yarns may also be spliced. Untwist the ends, gently remove some of the fibers from both ends to reduce the thickness, then overlap and twist.

From: *The Knitting Answer Book*

years. Luckily, my knitting kit does include a needle gauge.

A handy tool for people like me with lots of needles is a needle case, which keeps your needles in one place and protects them from getting bent. You can go out and spend money on the fancy cases described in this book, or (like me) you can repurpose a cardboard mailing tube, cut to size so the needle knobs just stick out of the top, and fancy it up with contact paper if you wish. The needles won't be precisely sorted as to size, but most of them have the size stamped on the top knob, so all you have to do is pick out the two that match.

A really handy feature of *The Knitting Answer Book* is a yarn-weight table comparing traditional weight descriptions (fingering, light worsted, roving, etc.) to the new standards (numbers 1 through 6), with scale-size drawings of each category. Along with inheriting lots of needles, I inherited lots of yarn, most skeins of which no longer have labels. This table is invaluable for determining the weight of unlabeled yarns.

Another handy bit of information in this book is how to tell whether

unlabeled yarn is spun from plant fibers, animal fibers, or synthetic fibers. Knowing the fiber content is essential for combining yarns, because different fibers wash differently and may knit differently.

When a project is finished, weaving in loose ends is never much fun. This book shows how to weave them in as you knit. Another option is to join the two yarns by splicing (see box above).

As well as being full of answers to questions that puzzle every knitter at one time or another, *The Knitting Answer Book* clearly explains most of the terminology you're likely to encounter in your patterns, including deciphering common abbreviations. My only complaint about this book (which can't be blamed on the author) is the style of binding, which doesn't want to stay open while you're trying to follow directions for a particular technique. Somehow I can't get the hang of holding the book open with one hand while knitting with the other two hands. Nevertheless, this compact 4-1/2 by 6-1/2 inch reference manual has become an essential tool in my knitting basket.

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Knit a square coaster

Cast on 2 stitches.

Row 1: Knit 1, increase 1, knit to the end of row.

Repeat this row to desired dimension.

Row 2: Knit 1, decrease 1, knit to end of row.

Repeat this row until you have 1 stitch left.

Bind off.

From: *The Essential Guide to Color Knitting Techniques*

Left: A four-inch square coaster, knit on the diagonal, makes an easy project with practical results. Photo by Gail Damerow

Knitting in the round

Ever since I discovered the joys of circular knitting, I've been converting many of my patterns from straight needles to either double point needles or circular needles. When I learned that Margaret Radcliffe wrote a book called *Circular Knitting Workshop*, I had to have a copy.

Why would anyone want to knit in the round? This book offers five reasons. Circular knitting means no sewing of seams and no purling for stockinette stitch. It guarantees the front and back of a garment will be the same length without counting rows or measuring. Stripes and other patterns on the front and back match up at the sides. If you run out of your main yarn, you can easily work in a new color.

Okay, so why would anybody knit flat? This book offers five reasons. Some patterns are more difficult to knit in the round. The color technique of intarsia—working separate areas with separate yarn supplies—can be done only flat. Knitted bags and heavy sweaters need seams for support. Certain types of yarn tend to spiral, requiring seams to stabilize them. Tailored garments fit better with seams to add support.

Just as *The Knowledgeable Knitter* works step-by-step through a generic flat knit project, *Circular Knitting Workshop* takes you step-by-step through a circular project. In addition to detailing basic techniques, it explains how to convert a pattern from flat knitting to circular knitting.

Instead of knitting back and forth, you're basically knitting a spiral, which means that at the end of each round you're going to have a jog. This jog is most noticeable at the start and finish of a piece, and in some stitch patterns or color patterns, especially stripes. The jog has long been my nemesis, so I was happy to see an extended discussion on how to avoid or disguise it.

To get you started knitting in the round, while practicing the various techniques involved, this book offers many patterns for easy projects such as scarves, shawls, mittens and gloves, hats, socks, sweaters and vests, pot holders, and place mats. The nice thing about all these patterns is that they include directions for making any size using any type of yarn. Whether you have yet to learn how to knit in the round, or you're already an enthusiast seeking to convert flat knitting patterns to circular, this book is for you.

Wild about color

When I learned that Margaret Radcliffe has written yet another book, *The Essential Guide to Color Knitting Techniques*, I figured: What's to know? Either you like a certain color combination or you don't. So I launched into this volume with a degree of skepticism.

Again I was in for a surprise. The first chapter explains *why* some color combinations are more pleasing than others, which is good to know when you're selecting yarns for a multi-color project. The explanations of

primary, secondary, and tertiary colors—with graphic illustrations using 12-color wheels of yarn samples—is nothing short of brilliant.

"Once you've selected your colors, you need to decide what proportion to use them in. It can be time consuming to swatch all of the possibilities, so you may want to try a quicker method." The author's suggestion is to wrap the yarn around cards. Wrap at least twice with each color to get an idea of how a stitch or row will look. Play with the order of the colors and the proportion of each in relation to the others until you like what you see.

In addition to such handy tips, this book is packed with samples of different color combinations using different stitch patterns, one more beautiful than the next. I'm tempted to knit squares of my favorites and sew them into a patchwork quilt.

While most of this book describes isolated color knitting techniques, also included are a few patterns for colorful socks, bags, and mittens. When I came to the directions for a diagonal-pattern square coaster, I put down the book and went scrambling for needles and yarn. I have long been looking for quality coasters to replace my old worn-out ones and never thought about knitting some. This pattern reminded me that my yarn collection includes a cone of tricolor sport weight yarn that's so harsh I was wondering what I would do with it. Knitted on #4 needles, it makes perfect coasters.

Using multi-color yarn is a popu-

lar way to combine colors without having to keep track of skeins of different colors. Variegated yarn is one option, and can result in some exciting combinations, as demonstrated in this book. I learned here why my first variegated sweater had a pleasing mixed-color pattern on the front but an ugly blotch of single color in the middle of the back—I neglected to match up the color repeats when I came to the end of a skein and joined a new one.

Here's how: "When you get to about three yards from the end of the original ball, stretch the yarn out so you can see all that's remaining. Pull out the beginning of the new ball and lay it alongside the end of the old one until you find a section where the colors match. Use an overhand knot

to tie the beginning of the new yarn to the old one, leaving a tail." If the colors don't match up after you tie the knot, slide the knot until they do.

As with the author's other books, this one sometimes introduces terminology without providing a definition. The chapter on variegated yarns, for instance, introduces self-striping yarn without explaining the difference between variegated and self-striping. I looked first in *The Knitting Answer Book*, and not finding it explained there I went online and learned that self-striping is a type of variegation in which each length of color is longer—12 inches or more, compared to the usual three to four inches—creating a series of stripes when knitted into small projects like socks or mittens.

If you're ready to go beyond variegated yarn and try a stitch pattern using yarn of two different colors at the same time, you have the option of holding both colors in your left hand or in your right hand, but in either case the two yarns will twist around each other. To prevent twisting, you can hold one yarn in each hand and knit with *both* hands! *The Essential Guide to Color Knitting Techniques* shows how.

Any one of Margaret Radcliffe's books is sure to stretch your imagination and proficiency no matter whether you have been knitting for decades or are casting on your first stitches. Her books are available from Storey Publishing (www.storey.com) or the Countryside Bookstore (see below). ❁



The Knitting Answer Book

Margaret Radcliffe's classic Q&A guide is better than ever! This thoroughly revised and updated new edition gives expert answers to scores of new questions that knitters have asked since the first edition was published.

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Okmulgee, OK is a-ok

Low home costs lured this buyer

BY ANONYMOUS

If you're retired or have a guaranteed income, then let me highly recommend Okmulgee, Oklahoma, as a dream city.

The population is around 12,000—and about equal in races of blacks, whites, and Native Americans.

When oil was discovered back in the 1930s, a building boom took hold and beautiful/well-built homes sprung up all over this area.

The oil boom busted, and over the decades the two largest companies closed. That left people moving out and hundreds of these gorgeous homes sitting empty and eventually being sold for back taxes or torn down by the city.

The *best* buy on homes and land are through city tax sales. They are

held twice a year—the first one is usually in June, then what wasn't sold goes on the block again in September. This year 164 houses and land went up for auction for the county of Okmulgee. I saw a beautiful 1,700 sq. ft. home sell for \$4,400. And I saw a dump sell for \$2,000. You aren't allowed to go inside the houses to look, but I am guilty of peeking in to see. The second tax sale this year resulted in large (and small) city and county lots selling at starting prices of \$25. Most of these have the utilities already on the property, but the city tore down the houses. They seem to do this on properties where they have to do the mowing.

There are also several other ways to find your dream place here. I rented a house from a slumlord for a cheap price to save money, and just

drove the streets, looking. It took me six months to find a 1,300 sq. ft. home, totally gutted down to studs from a small fire five years ago. The "for sale" info was written on the porch window. I wouldn't have found it if I hadn't been driving around and looking. There are lots of houses for sale not listed anywhere except a hand-made sign in the yard (or info on the windows). Find an area you like and drive around in it.

Taxes are \$201 on my property. Garbage and ambulance are included on my water bill, which runs around \$52 a month. But expect to pay \$150 water deposit to the city (that you won't receive a refund on until you move). And if you find a home within city limits you must have water in your home. Electric and gas are inexpensive and are not deemed a necessity by the city. Again—water is—because of fire hazards.

My home sits on a chain-link fenced-in acre that has great soil for gardening. Trees and shrubs cover the entire perimeter so other houses can barely be seen. And none are close. It also has a metal roof, a two-room garage (also with a metal roof), and a small metal-covered wooden building that is perfect for a future chicken house. My total cost for all of this—\$12,100.

I got to know my neighbors while living in the rental; the owner also knew them and let me take over payments from a previous buyer who got it through divorce. No down/nothing involved but having the deed transferred over to me with a Warranty deed. (Don't do a Contract for Deed—have the seller carry the note as if they are the bank so you



The author's front porch. Home prices are cheap through city tax sales.



The one-acre plot is completely fenced in with chain link fencing. There are pecan and mulberry trees, poke greens, asparagus, and wild onions.

can put the home in your name immediately and apply for Homestead Exemption.) They can file a lien for the amount due, or have in the contract the right to sue and repossess if payments are defaulted. But I highly recommend that you get that deed in *your* name immediately – or don't buy.

Also, *do your research* on liens of any kind, from mortgage companies to mowing by the city! Start by calling the court clerk and treasurer's office.

My payments are \$271 a month and my home will be paid off in February of 2019. Unfortunately, due to the interior being unfinished I can't find anyone to insure my home. And my renters insurance was canceled when I bought my home.

Because I am already a senior citizen, I wanted a way to get around, in the future, without a car and also receive food when I'm not able to cook for myself.

Okmulgee has a van taxi service that offers free rides to/from the senior citizens' building. It's open Mon.-Fri. and meals are \$1.75 – or what you can afford. Meals on Wheels are also available during the weekdays.

If you want to take the taxi anywhere within the city limits, the cost

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The root/storm cellar was hand dug and lined with home fired bricks. There's also an old shed on the property (above right).



for things not sold at Dollar Tree. There is another grocery store but their costs are higher, and living on \$701 a month, pennies really are watched.

A major interstate runs through Okmulgee—highway 75. So it is possible to travel to other areas closer to and in Tulsa, for employment. Remember that this area of Oklahoma gets ice and sleet during winter months.

There's a local hospital. Also Creek Nation Tribal Headquarters is located here and offers free medical to anyone with a CDIB card that is recognized by the government (doesn't include Eastern or Western Cherokee

tribes—yet). The veteran's hospital is 60 miles away.

Schools are not rated very high here, so homeschooling might be a thought if you do have younger children.

Gasoline is cheaper than in most states. Cost right now is \$2.99 a gallon. (October 2014.)

Pickup trucks cost more than in some states because there are a lot of small farms and people use them to haul all kinds of things.

Like *all* small cities, Okmulgee isn't perfect. But you can drive by almost any day and see people sitting on their porch. Give a wave on your drives around the area to find a homestead you can afford.

Any further questions can be answered by the friendly folk at the Chamber of Commerce. Or your newly made neighbor friends while you rent to find that home. (My suggestion is to rent—it costs more than some house payments, but you can decide whether to live here and find a better home deal.) 🌱



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The Ephemeris for January and February The Sun's Progress

January 3: Perihelion, the point at which the earth and the sun are closest to one another in 2015, occurs at 9:00 p.m. on this date.

January 20: The Sun enters the sign of Aquarius, foreshadowing the last subseason of winter (aptly called "late winter").

February 3: By the time the Groundhog Day Thaw (February 1-2) is over, the sun will have climbed past a declination of 16 degrees, more than 30 percent of the way to spring equinox.

February 18: Today is Cross-Quarter Day, the day that the sun reaches its halfway point to equinox. It enters the early spring sign of Pisces at the same time.

The phases of the Marauding Mouse Moon, The Skunk and Opossum Moon and the Flowering Moss Moon

Mice continue to haunt your cupboards and walls throughout the winter, but when the snow melts, skunks and opossums court and scout for food. And even though snowdrops and aconites may be reluctant to bud in the cold, fallen trees may harbor flowering mosses in the sun.

January

4: The Marauding Mouse Moon is full at 11:53 p.m.

9: Lunar apogee, when the moon is farthest from Earth

13: The moon enters its final quarter at 4:47 a.m.

20: The Skunk and Opossum Moon is new at 8:14 a.m.

21: Lunar perigee, when the moon is closest to Earth

26: The moon enters its second quarter at 11:48 p.m.

February

3: The Skunk and Opossum Moon is full at 6:09 p.m.

6: Lunar apogee

11: The moon enters its last quar-

Poor Will's COUNTRYSIDE Almanack ~ for ~ Winter & Earliest Spring

BY W. L. FELKER

And it came to me all in a feeling how everything fitted together, the place and ourselves and the animals and the tools, and how the sky held us. I saw how sweetly we were enabled by the land and the animals and our few simple tools.

—Wendell Berry

ter at 10:50 p.m.

18: The Flowering Moss Moon is new at 6:47 p.m.

19: Lunar perigee

25: The moon enters its second quarter at 12:14 p.m.

The Stars

When you get out to do chores around 5:00 a.m., the winter stars will all be setting. And if you look straight up, you'll see the Big Dipper in its early spring position, and if you follow the tilt of its far western edge straight up, you'll find Polaris, the North Star. Guide on the handle down towards you, you'll run into Arcturus, one of the brightest stars of May.

The Shooting Stars

The Quadrantid Meteor Shower is expected to be most visible on the nights of January 3 and 4. The waxing moon, however, may interfere with your meteor watching.

The Planets

Venus, moving retrograde into

Capricorn and then into Aquarius, remains the evening star in the far west. Mars is also an evening star, moving with Aquarius and then in Pisces, just a little to the southeast of Venus. Jupiter is overhead in Leo, then Cancer, crossing the sky behind Orion throughout the night. Saturn moves retrograde into Sagittarius and Scorpion, coming up just before the sun.

A Calendar of Holidays and Special Occasions for Farmers, Ranchers and Homesteaders

January 3: Muhammad's Birthday (Mawlid Al-Nabi): Sunni Muslims celebrate Muhammad's birthday today. Shia Muslims celebrate Muhammad's birthday on the 8th.

February 15: Mardi Gras

February 18-24: Tet, Vietnamese New Year and Chinese New Year (The Year of the Sheep)

February 27: Dominican Republic Independence Day

The Almanack Daybook January

1: The season of deep winter begins today. This season has six significant cold waves, and it lasts from January 1-26. The New Year's high-pressure system is usually one of the most severe systems to this point in the winter, and it is preceded by sleet or snow as far south as northern Florida.

2: After tomorrow's full moon, take out suckers, dead and crossing branches as the moon wanes. Don't

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prune what will bloom before June, and wait for July or August for the maples.

3: Expect sap to run in the maples throughout the South as the moon becomes full.

4: Today is full moon day; be alert for “full moon madness.” Starting tomorrow, plant bulbs, shrubs and trees throughout the southern half of the United States.

5: As the year’s second major front approaches, milder temperatures and more precipitation are likely; thunderstorms are not uncommon in the South.

6: Consider forage testing soon if you suspect that quality is declining.

7: Pines have begun pollinating. Allergy season begins.

8: The period between January 8 and 12 is one of the main storm windows of year.

9: Stores are setting out the spring bulbs you forced for extra cash.

10: Below the Great Lakes region, spring bulbs start to peek up through the mulch.

11: Skunk cabbage blooms in the warmest swamps.

12: Bluebirds end their brief winter vacation in the Deep South.

13: Have supplies ready for the birthing of lambs and kids.

14: Plan for baking hot-cross buns for the Ash Wednesday market.

15: After its passage, the January 15 front initiates a 10-day period during which average temperatures are the lowest of the year.

16: Prepare for the seeding of broccoli, cabbage and kale after new moon.

17: Between the middle of January through the middle of May, spring moves north from New Orleans at a rate of six miles per day or one degree every four days.

18: The incursion of powerful southerly winds from the Gulf of Mexico often creates the “January Thaw.”

19: Tomorrow’s new moon marks a surge in the running of sap.

20: Today’s new moon is likely to foil the arrival of the January Thaw this year. Stay indoors and seed your



Question of the month

How does it work? Easy!

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(If you have a question for your fellow homesteaders, include that, too.)

What is your most-used homestead skill?

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Send your answers (and/or any other thoughts) to:

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But don't think too long--the deadline for the March/April issue is December 26th.

bedding plants.

21: Frost seeding typically begins at this time of the year: red clover is broadcast in the fields, and grass seed is scattered over bare spots on the lawn.

22: Foxes and coyotes mate—and may be extra hungry. Check the chicken coop and keep watch over your livestock. Owls are nesting.

23: Rhubarb leaves emerge in the sun, and Lenten roses are budding.

24: Crows have begun migration.

25: The front that arrives as late winter begins often spawns storms, accompanied by snow or rain, and the days following its arrival make the 25th and 26th some of the month’s chillier days.

26: Today is the first day of the season of late winter. Late winter contains five to six cold fronts and lasts from today through February 18.

27: The day now starts to grow at the rate of two minutes per 24 hours instead of just one.

28: Average temperatures, which have remained stable from the middle of January, climb one degree almost everywhere in the United States today. Averages continue to climb at the rate of about one degree every two weeks.

29: Cardinals and doves begin their pre-dawn songs, a major shift in the sound of winter.

30: The Groundhog Day Thaw often begins today or tomorrow and lasts until about February 3.

31: The sun is one quarter of the way to spring equinox today.

February

1: Birthing season begins for ewes and does bred in early autumn.

2: Today is Groundhog Day. In the South, groundhogs may be out digging up hillsides and pastures and eating new grass along the roadsides.

3: The fierce cold front of February 3 raises the possibility of below-zero temperatures. Full moon makes bitter cold more likely this year.

4: 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 24th and the 27th.

5: Mountain cedar, acacia, smooth alder, bald cypress, American elm, red maple, white poplar and black willow start to pollinate.

6: The next three days frequently bring dangerous weather to the nation’s midsection and produce some

of the most frigid mornings of the entire year.

7: Bluegrass revives and starts its seeding cycle.

8: As conditions permit, plant oats and barley in the South.

9: Doves begin mating calls before dawn, joining the titmice and the cardinals.

10: Monarch butterflies start migration from Mexico.

11: Prepare for Mardi Gras sales of beads and other paraphernalia.

12: The early spring bird chorus grows as grackles, starlings, blackbirds and blue jays increase their conversations.

13: Deer have gathered in herds for winter feeding.

14: 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 15th and 23rd.

15: 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.

16: Pastures start to grow if snow-cover recedes.

17: Tomorrow is full moon day: Expect storms.

18: This is winter's Cross-Quarter Day, the first day of early spring. A relatively long season of eight to ten major fronts, early spring lasts from mid-February through the end of March.

19: Turkeys are flocking, socializing before April courting.

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: Throughout the central states, the ground temperature is moving above 35 degrees, the temperature at which earthworms become active.

22: Make plans to sell kids and lambs to the Easter Market at the end of March and early April.

23: As the moon wanes, take care of the animals: trim hooves, slaughter, worm, and treat for external parasites.



24: The chilly February 24 front almost always pushes Snowdrop Winter deep into the South.

25: Mares show signs of estrus as the days grow longer.

26: In the South, honey bees and carpenter bees collect pollen from dandelions, yellow-flowered wild radishes, red maples, henbit, blue toadflax, white clover, and chickweed.

27: The last front of February is almost always more gentle than the February 24 front, and its transit signals the end of Snowdrop Winter.

28: Redbuds and azaleas are in full bloom in southern Georgia, Alabama, Mississippi and Louisiana.

Lunar feeding patterns for people and beasts

Best hunting and fishing should occur with the moon above the earth. The second-best time occurs with the moon below the earth.

Date: Above; Below

January

1-4: Evenings; Mornings

5-13: Midnight to Dawn; Afternoons

14-20: Mornings; Evenings

21-26: Afternoons; Midnight to Dawn

27-31: Evenings; Mornings

February

1-3: Evenings; Mornings

4-11: Midnight to Dawn; Afternoons

12-18: Mornings; Evenings

19-25: Afternoons; Midnight to Dawn

26-28: Evenings; Mornings

Winner of the November- December Sckrambler Sweepstakes

A total of 34 readers solved the last puzzle, and a prize of \$5 was promised to the 4th, 44th or 74th person to return the correct unscrambled words before my deadline. John Volungus

from Rexford, New York, was the 4th, so he gets the prize!

Answers to the November- December Sckrambler

AIESL	AISLE
LSIE	ISLE
MESLI	SMILE
HIWEL	WHILE
ELYGAR	ARGYLE
LEIB	BILE
MIEL	MILE
LESTI	STILE
EILW	WILE
EFIL	FILE
EILN	NILE
LEHIAW	AWHILE
ELIUQ (not a typo):	QUILE
ELIP:	PILE
TLIE:	TILE
XIELE:	EXILE
FILDEE:	DEFILE
IRHATSLYE :	HAIRSTYLE
ELILAB:	LABILE
ELIAX (not a typo):	AXILE

The January – Februry Sckrambler: Marketing Holidays for Homesteaders

If you are the 3rd, 33rd or 53rd person to return your correct Sckrambler solutions by my deadline to Poor Will, P.O. Box 431, Yellow Springs, OH 45387, you will win \$5. If you happen to find a typo, you may simply skip that word without penalty – and you will receive a 50-cent bonus if you win. *And if you can sell to all these markets, you may really see an increase in your income!*

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COUNTRYSIDE is proud to present an on-going photo contest. Send us photos from your homestead—livestock, grandchildren, garden, barn, etc.—and we may share it with COUNTRYSIDE readers! Each issue's "Featured Photo" will receive a FREE COUNTRYSIDE t-shirt!

E-mail your photo(s) as jpeg attachment(s) to friend@countrysidemag.com with "Capture Your Countryside" in the subject line, be sure to include your name, mailing address, phone number and a brief description. Or mail photo(s), including your name, mailing address, phone number and a brief description, to "Capture Your Countryside," 145 Industrial Drive, Medford, WI 54451.

Any photos received will become the property of Countryside Publications and can be used at anytime. Countryside Publications retains the right to publish and/or reproduce any and all photos submitted in future issues or publicity, with or without mention of source.

Featured Photo



The quietness,
peace, and beauty
brought by a
winter snow.—
Jeanne Kemper,
West Virginia

I took this photo on a misty
sunrise in Northampton-
shire over the weekend—
it's certainly turning into
winter! — Aimee Bracken,
England





**Sunrise on Salmon Brook Farm in the winter.—
Lavinia and Rick Ross, Oregon**



We are now the proud owners of 12 goats. My daughter Maezy is thrilled. I love this photo of Maezy and one of the babies.— Abbey Smith



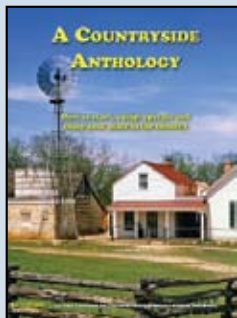
This is my favorite Speckled Sussex hen named Speckled Bird. I have trained the chickens to come to the white bucket. No matter where they are, I can go out with a white bucket and they come to me. She likes to check the bucket just to be sure she hasn't missed out on anything.— Rhonda Crank, Louisiana

This is a picture of our dog named Woody and our rescued wild pig named Willie. Willie's mom got killed on the road in front of our farm and he was rescued by two guys driving by. Willie lived here for years and was the talk of the town. He loved the chickens, cows and rolling in the mud with the dog.— Dawn Hodges, Texas



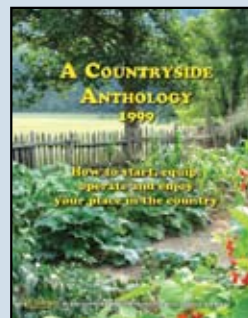
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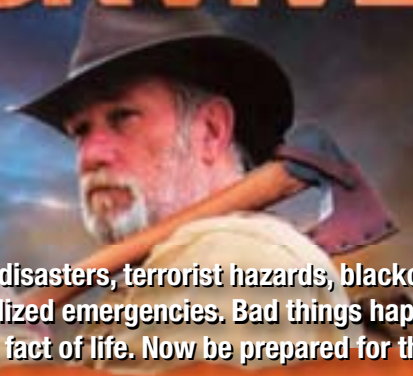
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UNDERHILL FARMS, Lynn & Karen Kaufman, 187 21st Ave., Moundridge, KS 67107. 620-345-8415. <info@underhillfarms.com> <www.underhillfarms.com> Belgian Blue Cattle.

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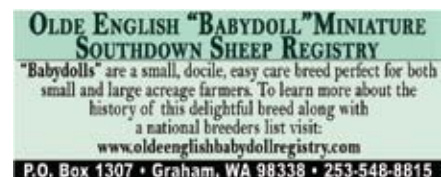
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2014 COUNTRYSIDE Index

Vol. 98

Alpacas: raising, 98/5:47

Alternative energy: Lifestyles & habits determine system design, 98/1:18; Chinese water heaters, 98/1:24; battery banks, 98/2:32; sizing/monitoring battery banks, 98/3:20; solar tax credit info, 98/3:10; choosing inverters, 98/4:22; basic solar power, 98/4:27; burning smoke, 98/4:30; windpower decisions, 98/6:23

Bees: Adventures in amateur raising, 98/4:70; fall & winter care, 98/6:34

Book reviews: *Butchering Poultry, Rabbit, Lamb, Goat, and Pork: The Comprehensive Photographic Guide to Humane Slaughtering and Butchering Beef*, 98/2:67; *Tomatoland: How Modern Industrial Agriculture Destroyed Our Most Alluring Fruit*, 98/3:76; *An Introduction to Heritage Breeds*, 98/4:64; *Hemp Bound*, 98/6:72; *The Permaculture Handbook*, 98/6:75

Building: cob cottage in VA, 98/5:26; greenhouse, 98/4:48

Business: when to call a lawyer, 98/1:78; starting an online, 98/2:26; protecting patents, 98/3:26; farm tourism for income, 98/4:39; Clover-Leaf Creamery & Dairy, 98/5:52

Cabbage: growing, 98/1:68

Can/preserve: butter & cheese, 98/3:70; Ball® FreshTech system, 98/4:63

Cattle: Akaushi breed, 98/3:38; Watusi breed, 98/1:46; train oxen pt. 2, 98/1:49; train oxen pt. 3, 98/2:82; Scottish

Highland breed, 98/2:84; grain & rumen, 98/4:7; American Vintage beef breed, 98/4:83

Chickens: raising chick instructions, 98/1:52; home-made brooder, 98/2:70; raising back garden, 98/2:72; edible vaccines, 98/3:44; tips for coop cleaning, 98/4:73; Langshan breed, 98/4:74; TN small processing facility, 98/4:76; winterizing the coop, 98/6:43

Composting: how-to, 98/1:62
COUNTRYSIDE: 2013 survey results, 98/5:89

Death: BioUrns, 98/5:73

Dogs: guardian, 98/4:77; intro to herding, 98/6:55; Biscuits recipe, 98/2:63

Eggs: recipes, 98/2:64, 98/3:71

Eggplant: growing, 98/4:55

Emergency: evacuation of livestock, 98/4:34

Farming: corporate, 98/4:44

Fishing: ice how-to, 98/1:26; ice tips, 98/1:29; recipes, 98/6:82

Food: Safety & Modernization Act, rules delayed, 98/2:56; as medicine, 98/6:79

Garden: 12 overrated selections, 98/2:50; high desert techniques, 98/2:52; grow lettuce, 98/2:54; Integrated pest management, 98/3:46; natural soil health, 98/3:48; elevated beds, 98/3:51; outdoor flower container combos, 98/3:54; growing kohlrabi, 98/3:62; growing wolfberries (goji), 98/3:63 (recipe correction 98/4:7); gathering "wild" food in cities, 98/3:68; natural ant killer, 98/4:52; fast growing plants, 98/4:59; steril-

ize soil, 98/5:58; growing asparagus, 98/5:60; ready for winter, 98/5:65; community for survival in Honduras, 98/5:66; water with clay pots (olla), 98/6:62; truck vegetables, 98/6:64; grow potatoes, 98/6:65; eco-friendly community, 98/6:67; basket from lamp shade, 98/6:69; army worms, 98/6:70

Goats: Nigora breed, 98/2:75; pack-goats not allowed in forests, 98/4:80; breeding for the small dairy herd, 98/5:41; urinary calculi in bucks, 98/6:44; AI class, 98/6:46

Grass feeding: New York farm/heritage breeds, 98/1:38

Greenhouse: building instructions, 98/4:48

Hay: growing healthy, 98/5:54

Hogs: raising adventures, 98/1:44

Homeschool: reasons I'm grateful, 98/5:76

Horses: planning a facility, 98/2:86; Gambia Horse & Donkey Trust, 98/2:88; meaning of farrier, 98/3:41; Equine Infectious Anemia test, 98/3:42; feeding horses, 98/3:43; for haying, 98/5:36; health vital signs, 98/6:49; hoof care for aging, 98/6:51; rescue on the Mesa, 98/6:52

Lamb's Quarters: soup, 98/5:72

Laundry detergent: recipes, 98/3:16; 98/2:63

Livestock: managing in winter, 98/1:34; & water conservation, 98/3:33; caring for organically, 98/6:39

Machinery: BOAZ mini-combine, 98/6:32

Mushrooms: Shiitake growing tips, 98/1:7

Neighbors: 20 years on WV homestead, 98/1:84; friends thru COUNTRYSIDE, 98/3:80

Organic food: at Maine General hospital, 98/2:44

Paint: house in 3 days, 98/2:39

Poor Will's Almanack: 98/1:91; 98/2:92; 98/3:92; 98/4:92; 98/5:92; 98/6:94

Preparing/survival: the Get Home Bag, 98/5:14; 50 essential items, 98/5:18; hiding valuables, 98/6:20

Purslane: recipes using, 98/2:58

Rabbits: as pets, 98/3:45

Raw milk: laws to protect public, 98/6:60

Recipes:

Beverages: tea, 98/1:73; Tamarind drink, tamarind water, 98/1:71; harvest & dry herbal tea, 98/3:73

Breads: Beaten Biscuits (no yeast or baking powder), 98/3:74; Skillet Wolfberry Muffin, 98/4:7 (correction)

Desserts: Grape Hull Pie, 98/2:62; Concord Grape Pie, 98/2:62; Bon Bons, 98/2:62; Fudge, 98/2:62; Syrup, 98/2:62; Goofy Cake, 98/2:63

Eggs: Clafouti, 98/2:63; Egg Loaf (2), 98/2:64; Stir Fry, 98/2:64; Thai Sauce, 98/2:65; Sweet & Sour Sauce, 98/2:65; Curry Eggs, 98/2:65; Bean Burritos, 98/2:65; Chocolate Meringue Pie, 98/2:65; Egg Cheese (2), 98/2:65; Egg Sausage, 98/2:66; Mustard Eggs, 98/3:71; Eggs with Black Beans, 98/3:71; Curry Omelet, 98/3:71; Eggs in a Nest, 98/3:71; Mama Smith's Egg Jelly, 98/3:71; Egg Custard, 98/3:72; Steaming eggs, 98/3:72;

Fish: Fried, Grilled Kebabs, Oven Cooked, Cakes, & Burghul Patties, Stuffed Grouper, Steamed Cantonese-style, Salmon Teriyaki, Colombian Seafood Stew, Fish Stew, 98/6:82

Jams: Seedless Wild Blackberry Jam, 98/4:60; Pear-Cranberry Conserve, 98/4:61;

Meat: Grandma Strong's Possum, 98/6:88

Purslane: & Yogurt Appetizer, Cooked Purslane Greens, Purslane Soup, Purslane & Tomato Salad, Purslane & Corn Stew, Cheese &

Purslane Casserole, Pickled Purslane, 98/2:58

Soup: Lamb's Quarters soup, 98/5:72

Tamarind: butter-sauce, Tamarind Rice, Tamarind-Lentil Soup, Ginger & Tamarind Chicken; Tamarind Beef, Split Peat Patties with Tamarind Chutney Tamarind Flavored Banana & Yogurt Dessert, Tamarind Sugar Balls, 98/1:71

Vegetables: Sweet & Savory Sweet Potatoes, 98/6:85; Versatile Herbed Pasta, 98/6:85; Zucchini (many), 98/5:68, 98/6:88; Orange-Ginger Carrots, Carrot Orzo, Apple Brussels Sprouts, Herbed Potato Dumpling, 98/6:86

Recycling: household items, 98/6:11

Right-to-Farm laws: what it means, 98/5:34

Salads: history, suggestions,

98/4:57

Septic tanks: plywood?, 98/4:46;

Sheep: Hidden Springs Creamery, WI, 98/2:77; pregnancy tests for, 98/2:78; American Blackbelly breed, 98/5:44

Skunk: remedy for animals, 98/2:63

Snakes: keep out of coops, 98/6:12

Tamarind: herb & laxative, meal recipes, 98/1:70

Tomatoes: vitamin deficiencies, 98/1:64

Water: conservation tips, 98/4:50

Weasels: friend or foe?, 98/5:56

Winter: survival dressing, 98/1:31; driving supplies, 98/1:32; managing livestock in, 98/1:34

Woodlot: deer control, 98/1:58; planting trees for profit, 98/2:41; stacking firewood, 98/3:31

WOOF (Willing Workers on Organic Farms): travel & garden experience, 98/2:48



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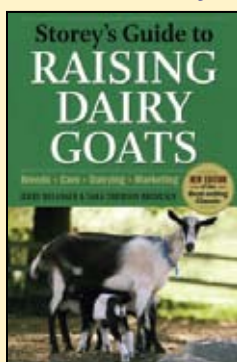
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Farms have an abundant crop of chores in need of attention and machinery in disrepair. Don't get me wrong, I love painful, thankless manual labor. Never do I feel more alive than when muscles in my back begin to spasm and my skin drowns in sweat. Tending to livestock, plowing the fields, and baling hay all possess a certain charm.

My gripe is the way work is disguised on my family farm. Around these parts, pain and labor are masked with one deceiving word — party.

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Allow me to plead my case. Grandma is one of those special individuals born after her time. Had she been around a couple hundred years ago, I believe she would have made a fine plantation owner. I picked up the phone to Grandma asking, "Do ya' wanna' come on over to the farm for a rock party?"

Thinking my grandparents were trying to remain young at heart and had perhaps discovered the soothing sounds of Pink Floyd, I immediately responded, "Yes!"

I wasted no time driving over with a wide assortment from my favorite bands. Imagine my disappointment when music was replaced by the distinct clinking sound of a tractor pulling up with an empty trailer hitched to its rear. Worse yet, the terrible green monster angled towards the largest field on the Nych Farm. I began to sense I had been duped.

Rock party really meant a controversial form of torture practiced by Pennsylvania farmers. With blind obedience, grandchildren followed the tractor through the dusty field. All the while, kids were expected to heave heavy boulders up and onto the trailer. Once pleasantly vacant, the trailer quickly filled with geologic specimens. To this day, I blame the scarring experience for an assortment of severe side effects and phobias. For starters, Grandpa's John Deere led to chronic chlorophobia (fear of the color green). A touch of geophobia forced me to discard my rock collection and any hope of being an expert geologist. Sadly, I no longer listen to classic rock music. Many other repercussions are emerging and the rest will surely surface in my damaged future.



Months following the rock party, after my back had just started to straighten out, the telephone once again rang. Grandma's three daughters, whom I also refer to as my aunts, merrily chirped on the other end of the phone. "Marshall, come on over to the farm for a pierogie party!"

"Alright! I'll be right over," I said, already tasting homemade noodle and the cheesy potato filling. Certainly this party wouldn't go awry like the rock party. Driving my truck to the family farm just down the road, I thought positive thoughts aloud, "We must be getting together to celebrate our Polish heritage and the delicious cultural traditions associated with it."

As I am discovering on my road to self-actualization, I was again wrong. The family had conspired in the kitchen of Grandpa and Grandma's farmhouse. When I arrived to

the "party," I noticed the attendees were my grandmother, aunts, and all fellow grandchildren. The grandchildren's presence was not alarming. However, I was curious as to why the partying adults were all women. I asked myself, "Where are the men of the family... Grandpa, Dad, and the uncles?"

The answer to this timeless question comes with experience. The Nych men, who are seasoned veterans, have mastered the art of avoiding such parties.

As I slowly and quietly inched out of the kitchen, using my stealth hunting techniques, the matriarch of the family spotted me. "Great! Marshall's finally here!" hollered Grandma.

"Quick! Grab the rope and handcuffs!" chimed in my loving aunts.

I labored the rest of the day away in the prison that is Grandma's kitchen and in the name of crafting homemade dough. My specific dough duties included summoning dough from scratch, cutting dough in circular shapes, stuffing dough with filling, pinching the edges of dough to form a seal, and boiling dough for packaging. Come to think of it, I did everything to the dough except eat it.

After all of the partying, my inner angler certainly didn't have the spunk to throw a top water plug for an evening bite. And the last thing on my mind was to venture the depths of forest in search of deer.

To this day, when the telephone rings I have developed an unusual, uncontrollable response. The muscles in my back instantly cramp and I go into a cold sweat. Like a trained parrot, I greet the caller with a convincing imitation of my answering machine, "Hello...sorry I am not available right now. Please leave your name, number, and a short message after the beep. Beep!"

No one understands the concept of party favors better than me. Party favors have little to do with tokens of appreciation or gestures of kindness. I know all too well that farm party favors refer to laborious favors guests do for the host. This is why I am so down on the farm. 🌾

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