

The magazine of modern homesteading

# COUNTRYSIDE

*& Small Stock Journal*

Volume 100 • Number 6  
NOVEMBER/DECEMBER 2016

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WHAT YOU CAN  
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## FEATURED PHOTO



This photo was taken on a recent trip to Gatlinburg, Tennessee. I love all things vintage, including farmhouse and barn finds, kitchen tools, farm machinery and trucks! This truck was on a property called Ely's Mill and had some interesting things to see. I enjoy photographing all types of vintage scenes. —[Janet Garman, Maryland](#)

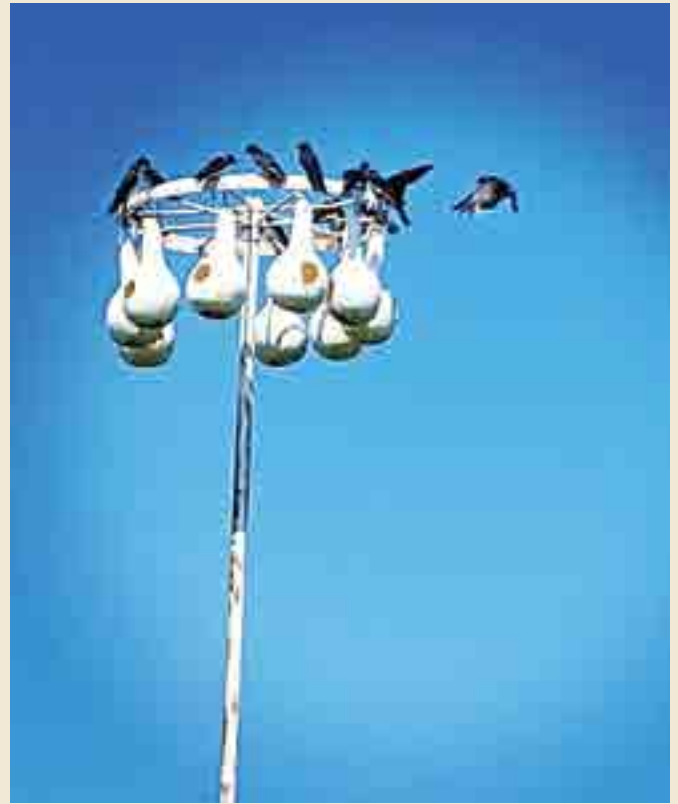
Looking at clouds through the teeth of the harrow. — Ken Newman, Pennsylvania



This is an early winter sunset on our farm. Our farm dates back to the 1750s and a small one-room house with a loft. The big house we live in was built in 1846. With many outbuildings, including a working smokehouse and root cellar, it was once a thriving cattle farm from the late 1800s into the early 1900s. We have restored the home and enjoy teaching our two young children how to live self-sufficiently. — Judy Parsons, Virginia



Buster and Buddy are true brothers, they came from the same litter. They love to run around in the field with their toys. In this picture, Buster and Buddy are enjoying their time on my parents' farm. They always seem to enjoy having their picture taken. —Christy Fitzmorris, Louisiana



The Purple Martins gathering before they fly away for the winter. —Starla Hester, Alabama

My Tennessee mountain homestead. — Joe Harmon, Tennessee





Snuggles makes sure she gets hay by climbing right in the hayrack. —Liz Meyer, Wisconsin



Meet Penny, our one-horsepower lawnmower! Penny is living the retirement life on our farm. When pasture pickings get slim, we turn Penny out in the yard and she does the mowing! She never ventures too far and doesn't disturb any ornamental plants. —Suzy Seagraves, Georgia

My grandkids petting the calves. I've been trying to tame them since they were born and Ava (the calf whisperer) is petting them within two days. They also have names now, Lola, Bella and the steer, Brisket. —Mark Crain, Tennessee



**COUNTRYSIDE IS PROUD TO PRESENT AN ON-GOING PHOTO CONTEST. SEND US PHOTOS FROM YOUR HOMESTEAD—** each issue's "Featured Photo" will receive a **FREE COUNTRYSIDE T-shirt!**

E-mail your photo(s) as a jpeg attachment(s) to [friend@countysidemag.com](mailto:friend@countysidemag.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 any time. 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.*

# Contents

4 **Capture Your Countryside**  
Inspiring pictures provided by our readers.

12 **Country Conversation & Feedback**

20 **Bookstore**

## FIELD & GARDEN

22 **The Remarkable Aloe Vera Plant**  
It's an antibiotic, astringent, pain inhibitor, emollient, moisturizer...and more.

24 **The Fall and Resurrection of Hemp**  
A once-illegal crop is now returning as a major opportunity for some farmers.

28 **Propagating House Plants**  
It's getting cold, so here are two plants you can grow indoors this winter.

30 **Remembering the Heroes of the Homestead**  
Anita B. Stone recalls those who helped pave the way before us.

## IN THE KITCHEN

34 **The COUNTRYSIDE Cookbook**  
Classic recipes from the COUNTRYSIDE Cookbook.

36 **Finding the Best Pumpkins for Pies**  
Marissa Ames couldn't find the right one, so she went looking for answers.

40 **Congrats on the Harvest! Now What?**  
The best ways to store all the different vegetables you grew last summer.

44 **What You Can, and Can't, Can**  
You can preserve almost everything in a can, so Gail Damerow details the exceptions and explains why.

48 **On to Cuba**  
Recipes and travel ideas for those interested in a country Ernest Hemingway once called home.

## HOMESTEAD IMPROVEMENT (NEW!)

54 **How to Build a Bar**  
Step-by-step instructions for

constructing a fun place to entertain your visitors.

58 **Solar Gadgets on the Homestead**  
Fence chargers, gate openers and other ways to add electricity without all the cost.

## LOST SKILLS

62 **Homesteading Hack #2**  
Measuring your pond volume in gallons.

64 **Think Like a Squirrel**  
Kenny Coogan contributes a handy guide for collecting your own winter stash of nuts.

## COVER STORY

58 **A Degree in Purpose**  
Why we are focusing on what universities are teaching the next generation.

60 **Farming, to the Nth Degree**  
Doug Ottinger wanted to learn what colleges and universities are teaching agriculture students. Along the way, he found 10 schools doing it right.

## ANIMALS & LIVESTOCK

78 **Candles Made from Beeswax**  
How to make divine beeswax tapers.

82 **Winterizing Your Beekeeping Setup**  
A few steps to take to make sure your equipment is stored properly this winter.

86 **Tube Feeding a Weak Kid**  
How to perform a necessary technique for saving a young, struggling goat.

## COUNTRY LIFE

90 **An Assignment to Fall For**  
How Marshall Nych passed biology class, while watching his friends discover their own toughness.

94 **The Big Adventures of Piggy Smalls**  
One cute pig. One West Virginia town. One gigantic adventure.

## GRASSROOTS

98 **Rethinking Rural Retirement**  
Is sitting still too boring?

## IN EVERY ISSUE

99 **Past Issues**

100 **Almanack**

102 **Marketplace**

106 **Breeders Directory/Classifieds**

## On the cover



Hopefully, your harvest looks like this. Check out how to store all your seasonal bounty on page 40.

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## Happy Writing

We receive letters after we mail out every issue, and many of them are positive, believe it or not. You tell us stories about your life, your homestead and the things you have learned along the way. You send us emails, you write them on the backs of subscription notices, and you send us long-form, handwritten letters. We read every one, and publish as many as we can. Those letters are at the heart of who we are at COUNTRYSIDE, and so this is my way of encouraging more.



RYAN  
SLABAUGH  
Editor,  
COUNTRYSIDE

And it goes beyond just the letters. We have, for a century, depended on our readers to help fill all the pages in the magazine, to tell us about themselves, and what works for them around their homestead. We never want that to change, which is why in this issue (and most issues), every single writer is experienced in the topic they are writing about, from travel to gardening to livestock, to whatever. We're lucky to have such a cache of talented, creative people who love to write about what they know.

Of course, some writers aren't so nice or constructive. I've been called an Obama-loving, liberal-minded, God-hating yuppy, just in the past month, and I've been called a lot worse. One letter writer even professed that he wished "karmic harm" upon my soul, the effects of which I haven't felt, yet. But I'm waiting for it. Maybe it was that indigestion last Thursday.

Anyway, I appreciate the lively discussion, even when it is harsh criticism. I'm not above it. Nobody is. Since there are plenty of things to talk about, I look forward to hearing from you.

Send letters to [countrysidemag@swiftcom.com](mailto:countrysidemag@swiftcom.com), or in the mail to  
145 Industrial Dr., Medford, WI 54451.

## 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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# Country Conversation & Feedback

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## How to Battle with Japanese Beetles

COUNTRYSIDE: I thought your readers might enjoy how my chickens have learned to help me with Japanese beetles. In my orchard I have, among other things, grape vines, raspberries and tart cherry trees, all on the Japanese beetles' "A" list. When the ladies see me get an old pint freezer box, they come running and join me at the grapevines. I'll pick the beetles off and either throw them on the ground in front of the birds, or put them in the box, which I later hold out to them so they can eat out of it. Either way, the beetles are gone in a flash.

Then we move on to the raspberries and do the same thing. I've learned that if I gently bend a cane over the ladies will pick the beetles right off the leaves. I have to use a different tactic with the dwarf cherries. I shake the branches and, as is their habit, the beetles fall to the ground. Their life expectancy is now about a nano-second. This whole process doesn't take long, is full of entertainment, and I'm not using pesticides.

**Brian Vissers**  
Mason, Michigan

*Thanks Brian. We have cohorts who use their chickens regularly to clean their gardens from pests, especially green worms. Chickens love those things.*

## A Trick When Growing Pumpkins

COUNTRYSIDE: I read the article in the September/October issue about growing pumpkins. You might want to consider scratching your youngster's name on the pumpkin when it is small. When it matures, the name will stretch all around it. Do two or three to ensure you have one.

**Carl Lewis**  
New York

*Carl, good one! Can we do our name too?*

## A Family Affair

COUNTRYSIDE: I was wondering if you would be interested in publishing this letter our 47-year-old son gave us for our anniversary. I thought it was very touching to read his thoughts about when he was just a boy. I used to feel so bad he had to work so hard for us, but I guess he didn't mind so much and it taught him a lot. He didn't mention he had to carry huge logs down to the cellar every morning before school, and then again at night. He had to make sure I always had a log of stove wood in the kitchen as the old Andes cook stove was our only source of heat. It was not and still isn't airtight, but still works. We use it through the winter still and love it.

My son is a wonderful young man, and still works very hard. I'm really proud of him.

**Diana Stigberg**  
New York

*Diana, since your son gave permission, we are going to print it. Here you go:*

**THE WOOD IN THE WOODBOX**  
BY RICHARD STIGBERG

I grew up in the rural town of Duanesburg, New York. Nestled in the rolling hills of upstate New York, there was never a lack of changing weather, or work to be done in preparation for it. In the spring, there was tilling and planting the garden, fixing the plow damage from clearing snow the previous winter, and taking plastic off the windows and replacing them with screens. In the summer, we stayed busy cutting the grass, weeding the garden and gathering the hay bales from the fields. In the fall, we closed the pool, raked the leaves and retrained ourselves in the nightly routine of doing homework after school.

But when the air became crisp, and the morning dew was replaced with icy puddles and frost, we started the most important process

and chore we would have for the next six months—processing firewood! And while some folks may have looked forward to weekends filled with football games or some rest and relaxation, this was not the case for me. Rather, my Saturdays (after breakfast, of course) consisted largely of loading up the chainsaws, wedges, and other tools for the task, hopping in the old rust-bucket monster truck alongside my dad, and four-wheeling it through the fields and into the woods.

There, we found an abundance of locust, dead elm and an occasional apple tree along the edges, but a trek deeper would lead us into the mature hardwood sections full of beech, ash, maple and a few oaks. My dad would do the cutting, and I was the dragger and loader, except for the logs too big for me. The work was hard, but the few breaks we took were priceless—sitting in the woods, quietly chatting with him about whatever came to mind, and enjoying the autumn air. After a long day of collecting wood, I always enjoyed a great night of sleep.

Now, Sundays were a bit different, but just as memorable to me. After church, Dad would fire up the ol' Farmall tractor that was equipped with a large saw blade for cutting the long log lengths we collected the day before into standard burnable length pieces. My job was to split (if necessary) the pieces and then to stack the wood based on size into the woodshed. There was a section for stacking the large furnace wood, another area for fireplace wood, and a third designated for small woodstove wood. All in all, we would need about eight full cords in a season. That's a bunch! The last step, of course, was filling all three wood boxes in the house so Mom could keep the fires going and the house warm. And there was nothing more fun for me back then than arriving at my grandma's house on Sundays at dusk to enjoy her roast beef dinner, with our other family relatives from the city.

Doing firewood all those years, while I may not have realized it at the time, built a strong relationship between me and my parents, and played a big part in my development as a responsible adult. I may not have been the best basketball player, but I was an important part of another team—my family! Together we worked and played, and in doing so, I learned how to enjoy and respect others, nature, the things we have, and life. And oh how I still enjoy the smell and gentle crackling of a warm fire in the cold season.

Many of us know the phrase, "The wood in the wood box warms you twice; once when you cut it and once when you burn it." But I believe it warms a person with the right attitude again and again... not just when you cut it, carry it or burn it, but also when you look back at all the simple, character-building moments. At least for me, no matter how cold today's world can be, my heart will always be warm, largely in part because of my memories of doing firewood, and living together as a family.



### **From Infertility to Farmer**

**COUNTRYSIDE:** My husband and I live in Tuscumbia, Alabama. Our farm is located on Hawk Pride Mountain, the foothills of the Appalachians. Right now we call our farm a hobby farm, which any farmer will tell you can become expensive. Animals,

feed and equipment can become very pricey. We hope one day it will turn from a hobby farm to a profitable and productive working farm. Either way, it has been amazing watching it grow over the last few years, and knowing that my hard work and the hard work of my family is a part of that growth is particularly incredible.

Daniel (my husband) and I have been married for 10 years. We have been through many ups and downs of marriage. Infertility was our biggest hurdle. We tried to have children for years, but it never happened. We fostered children for three years but the children we fostered never resulted in an adoption. Although I would not give up the experience for the world, fostering children was unbelievably hard for us as an infertile couple. Bringing home children from the hospital, and watching them leave sometimes two years later, was almost unbearable.

We always knew we wanted a lot of farm animals, but thought children were the key to our happiness, so we put it off for years. I did not know how I would overcome not ever having children. It was truly heart breaking, but one day Daniel found a beautiful horse for sale, so we cleaned up the old barn at my in-laws and fenced in several acres of land. The horse was beautiful out in our new pasture, and it was very humbling to have something to care for. Out of the blue, Daniel shows up with a kid Billy goat he bought on a whim. Eventually he thought that goat needed a friend, and then the goat herd began! We are up to seven goats with more on the way. But that's not all we would have!

Daniel found the cutest bottle baby heifer whose mother died. I call her Little Orphan Annie. Annie grew up to be a beautiful cow and is about to have a calf of her own. My husband always tells me not to name the animals because one day we will sell them, but I always

name them anyway. We have only sold one cow so far and her name was Oreo! Our cattle herd is now up to seven, and we are expecting two of our heifers to calve this year. Our bull is a registered Dexter bull. A Dexter bull is small, and best for first time heifers, and also us first time cattle owners. Their babies are generally small and the heifer can handle the birth well.

As a woman I find myself very excited about the birth of the animals. Since I have never given birth myself, I attain happiness in watching life be brought to our little farm, and knowing I had a hand in the development of these animals. I never thought that I could be happy without children, but I am. I have many cousins who are children that love to see our animals, and an ex foster child still visits me and is learning all about farming from our little hobby farm. As hard as farming is, it has brought me a sense of peace and happiness knowing that life goes on. I cannot imagine a better life than the fulfilling life of farming.

**Starla Hester**  
Alabama

*Starla, it means a lot that you shared your story with us. We know you are not alone in trying to figure out life's big surprises, and we think you sound like a pretty amazing person. Being a caring foster parent and a successful farmer are two pretty amazing lines on your resume.*

### Every Now and Again

COUNTRYSIDE: Every now and again, I get a little frustrated with everything going on in the world—the election mess, the terrorists, the wars, the earthquakes—and I take a little break by going to what is known in the modern day vernacular as my “happy place” in the hills of north-central Arkansas.

Once there, I find myself sitting on the front porch of the cabin at Shiloh, looking out across the hay field toward the giant Sycamore tree. I survey the timber around the home site to see what might need to be taken out—for safety’s sake—and turned into firewood for the woodstove standing in the corner of the cabin. I smile with satisfaction as I look at the firewood cut, split and stacked by my son and his wife during their recent

visit to the family farmstead. I look across the clearing in the woods toward the majestic, ancient oak tree around which we have created this “place to be” for those moments when we need some time away and, ultimately, when we retire.

As I walk the land, I see the remnants of the rock wall that once surrounded the old home place and the barnyard. I see the old road behind the woodlot that used to be the public byway so many, many years ago. I see the creek bed, now dry but full of rolling rapids and gently moving pools during the rains of spring.

Looking even more closely, I see the old foundation—now mostly covered with dirt and grass and barely visible—that once anchored the footing of the house Dad built so many years ago. The house is gone now, but the memories of that place are etched in my mind. I lived there for a summer while Grandma and Grandpa built the house, farther up the road, they lived in during Grandpa’s retirement.

Across the road the hay waves golden in the sunlight, waiting to be harvested.

As my mind takes me back to my “happy place,” I realize some might say it’s not all that much of a place; that living down in a “holler” filled with old timber and rocky ground and ticks and snakes might not be their idea of the fulfillment of the American dream. Everyone is entitled to their own opinion.

As for me, well, I’ll just keep traveling back there in my mind, slowing my heart rate and easing my stress, until that day when I’m sitting on that porch looking out across the hay field toward that giant Sycamore tree.

And not just every now and again.

**Bob G. Stewart**  
Missouri

*Bob, great piece, and thanks for sharing. It’s a good reminder to stop and look around sometimes, and not get caught up in all the unimportant chatter.*



## Feedback on the September/October Issue

COUNTRYSIDE: For credibility's sake, I will tell you about me: a lifelong horse lover, from a long line of horse lovers, and married into a family of horse lovers. I raised four horse-loving children, and two of the nine grandchildren also have this genetic defect! We also love cattle, especially the Angus and Braunvieh breeds.

We live on a farm in north central Missouri, and before my husband's health began to decline, we ran a 500-cow registered Angus herd, a 75-cow registered Polled Hereford herd, and later used a couple of full-blood Braunvieh bulls on a portion of the Angus cows. Plus, we kept six full-blood Braunvieh cows. After my husband was no longer able to work, we drastically cut the Angus herd, sold all of the Polled Herefords, and while we kept the Braunvieh cows, we have not used a Braunvieh bull for several years, which may have been a mistake, because the cows are super mothers, and nothing can top the Braunviehs for good disposition. Plus, they are so pretty. Okay, I will concede that their birth weights can be too much.

Regarding the "Beginner's Guide to Container Taters": containers for growing almost anything can be made using old wire for a frame, and lining the inside with several layers of newspapers. I have used old, woven wire fencing, 2-by-2 concrete reinforcing wire, and double wrap of 2-by-4 fencing. When the potatoes are ready to harvest, I just lift the wire frame, and the dirt falls away and I pick up the potatoes. The earthworms don't like being disturbed, but they quickly bury themselves and go on about their lives.

Regarding "The Future of Food": Use of artificial insemination is a mixed blessing. It has narrowed the genetic base of the major dairy and beef breeds, with the result that genetic defects that cropped

us as a rarity are now rampant, and for some breeds, DNA typing is now required for registration, and the cattle are identified on their papers as being carriers, or being free from several genetic defects. AI is also labor intensive. In the early days, we spent hours daily during the breeding seasons (spring and fall) heat-detecting the cows. Insemination was usually done by a technician, since most breeders did not do their own insemination work. Now, timed breeding using half a dozen protocol cuts the time spent heat detecting, but it means running the females through the chute three or four times for various procedures. And after all this, sometimes it doesn't take. Last year, a friend ran his 30 heifers through a three-step timed insemination protocol, and did not get a single calf from the AI. And it ain't cheap, even if you do your own inseminating. For someone with only a few cows (less than 25), it would work for them to have their veterinarian do the work, or if there is one available in your area, there are technicians who will come to your farm and guide you through bull-selection and the whole AI process.

I have to disagree strongly with the paragraph, "Artificial insemination is less expensive than running a bull, and far less dangerous, especially on farms with children. It's not uncommon to hear of a farmer being found dead in a field after being attacked by a bull." AI is not less expensive, and if the cows don't settle on first insemination, you still need a clean-up bull.

Small children should never be allowed to wander around pastures where there are cattle of any sex! Cows, being very protective of their calves, will chase and even kill "critters" of any kind that they perceive as a threat. In my 60 years of raising cattle, the only person I ever heard of being killed by a bull was a man who got into a

trailer with a bull that was already upset. I know a lot of people who have been hurt or even killed by cows. I am referring to beef bulls; dairy bulls are a different story. They are notorious for their unpredictable and unpleasant dispositions, with the beautiful little Jerseys being tops on everyone's lists of bulls not to keep around.

AI works very well for swine, and very few hog producers use natural coverage to breed sows. Boars can be difficult to work with and extremely dangerous. When we had hogs, we never kept a boar for more than a year.

Dealing with large numbers of cattle gives one a different perspective on livestock in general. Raising breeding livestock is very different than raising commercial cattle, and both ventures are foreign lands to those who are new to raising animals, have small acreages and keep only small numbers of any kind of livestock. I have heard it all: "Oh, my cows are so gentle, they wouldn't hurt a fly!"

My cows are gentle, too. We handle them regularly, and at weaning time, we begin their training, so that they respect us and

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know to yield to pressure when they must be handled. I still don't want your kids playing out there in the pasture, and your dog is taking a big chance sniffing around a pasture with cows and calves.

Also, regarding "A Healthy Walk in the Country," I was wondering about chewing thistle leaves. The thistles I am familiar with have small briars on stems and leaves.

**Lynda Blades**  
Holliday, Missouri

*Hi Lynda. Thanks for subscribing again, and for writing us about your experiences. On your last question, removing the briars is key, which is easier if you carry a pocket knife around. If you don't, perhaps you skip this trailside treat.*

## Population and Food Technology

COUNTRYSIDE: Thank you for publishing "The Future of Food" in the September/October issue.

It is important to remember that, in addition to the pursuit of ever-higher profits, all the "innovations" in food production have come about to fill the need to feed an exploding human population on Earth. In 1804, the number of people reached 1 billion; in 1927, 2 billion; in 1959, 3 billion; in 1974, 4 billion; in 1987, 5 billion; in 1999, 6 billion; in 2012, 7 billion; and we are on target to reach 8 billion in 2026.

If Homo sapiens were actually sapiens, we would limit our numbers so that sustainable agricultural methods could be used that would feed everyone, not damage our ecosystem, and not cause all the problems resulting from massive monocultures requiring huge inputs of artificial fertilizer, pesticides and herbicides.

The most important and effective contribution to the health of this planet that anyone can make is to not have children. See [www.vhemt.org](http://www.vhemt.org).

**Jay Winslow**  
Rosendale, New York

*The population control argument is interesting, and sensitive, and personal. Just as we won't be forcing our POV of what you should eat for dinner, we also won't be advocating for this step, either, although it is certainly viable and getting more popular. We also know humans in the future could invent a cure, a code or a science that could allow us to live more comfortably on the same planet. Either way, it's worth looking at more in a future issue, so we will.*

## Wrong about GMOs

COUNTRYSIDE: Although I do applaud Ms. Jerri Cook's foray into an admittedly charged area of debate, it saddens me that not only could it lead many to champion and proliferate a detrimental form of agriculture and food-production management, but do so with poorly substantiated arguments.

I could not find the source citation that corroborates the correlation between artificial insemination, increased meat and milk production, and milk prices that defy inflationary trends over the last decade. Further, what metrics were used by the author to make a claim that the "consistency and quality of dairy and meat products has improved" as a direct result of artificial insemination? And finally, in reference to the artificial insemination section of the article, where is the consideration that excessive production (and thus, waste) coupled with the knowledge that dairy farmers have only had a three-cent pay increase over the last decade might not be such a noble objective?

When moving to the GMO debate, Ms. Cook switches from excess production being a good thing for dairy and meat to a not-so-good thing when it comes to fruit and vegetable production. She was gracious enough to voice the refrains of the anti-GMO contingent that people should grow their own produce, but then dismisses this with a blanket statement that is

this "unrealistic rhetoric," without really explaining why. More people are doing that every day. The magazine that published her article is a testament to this fact. In regards to the health problems and GMO foods being a link, not a cause, I would have liked Ms. Cook to expound upon what research she has reviewed that indicates the true cause of these ailments, if not fully or partially attributable to genetically modified foods.

Most importantly, I believe there is an extremely big and dangerous disconnect that Ms. Cook is making with her article. She is avoiding the whole concept of monoculture farming, and how that continues to be proved to be the cause of destructive occurrences and environmentally detrimental farming practices.

In conclusion, I have not been swayed from my "unrealistic rhetoric" by an "unsubstantiated case" as presented in Ms. Cook's article.

**Christopher Emerson**  
Texas

*Mr. Emerson, good questions. We looked at several studies about GMOs to support our statement that there is no proven cause between GMOs and the spread of disease. We would encourage you to look at a 2013 study by Andrew Dewan, Yale School of Public Health, whose abstract says, "Our bloodstream is considered to be an environment well separated from the outside world and the digestive tract." Large macromolecules from food can't pass directly into the circulatory system, and don't change DNA, which are two factors commonly misused in GMO debates. Any paper or research that claimed a direct cause-and-effect relationship between GMOs and disease has been widely discredited, and most are written or funded by predatory groups or anti-GMO institutions.*

*That said, and we tried to make this point in our cover story introduction, we don't support the environmental abuses that GMO allows, nor the overspraying of pesticides or underpaying of farmers.*

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*Like any science, GMOs can be used for good, or bad, and looking at it as completely right or wrong, in our opinion, is short-sighted. To your point though, pesticides have been proven to cause disease and DNA changes, but are a separate topic from GMO plants. Related, perhaps, but too big for us to tackle in one issue. We'll get to it in the future.*

*On your other questions, we sourced the Bureau of Labor statistics and U.S. Department of Agriculture data, which show how many dairy cattle are in production and total dairy produced over the long term. The rate of dairy consumption is rising, but not dairy cattle in production, which is one piece of evidence that shows higher efficiency rates in the dairy industry.*

## Disagreeing with "The Future of Food"

COUNTRYSIDE: While I have the greatest respect for Jerri Cook's wide-ranging intellect and excellent writing style, it seems important to make a few points regarding her recent article, "The Future of Food."

It starts off with bioengineering (BE), and sliding into genetic engineering as if they're on the same level, a common ploy of GMO advocates. In reality, they're totally different technologies and not at all equivalent in respect to their safety concerns. BE is a refinement of traditional breeding techniques, taking a rifle approach instead of a shotgun. The latter is what I do trying to develop heat-tolerant vegetables here in Tuscon, Arizona, where I grow lots of specimens and hope a couple display that ability. I've had some success cultivating a summer lettuce, albeit over many generations, instead of isolating the specific gene on the first try in a lab.

BE wheat is designed to produce more gluten to aid the baking industry, along with other traits, which is admirable, but no doubt contributes to the increase in gluten intolerance.

As for glyphosate degrading in a couple hours, that's simply not

true. When it dissipates, where does it go? Into the water, air and soil. Round-Up Ready plants absorb some of it, getting into our food. It is being investigated as a probable human carcinogen by the World Health Organization.

True, Cook can cherry pick a few glowing successes of GMO-produced medicines, yet for every one, there's another lethal horror story lurking behind it, like the L-tryptophan tragedy in 1989 that sickened thousands and killed dozens, glossed over by the Food and Drug Administration to protect the fledgling biotech industry.

Bt corn contains a ricin-like compound that is present in every cell, an allergen to certain people. Even animals won't eat it if given a choice. Conventional crops contaminated with GM pollen are no longer technically organic. This is a serious problem when exporting American food into non-GMO countries, which reject shipments containing those genes, and they're relatively easy to test for.

Maybe future scientific advances will indeed create better food, but for now, there's plenty of evidence that GMOs are far from benign. All it takes is looking in the right places, as much as their cohort of hired skills would prefer us to ignore them.

**Bruce Maier**  
**Arizona**

*Bruce, the L-tryptophan tragedy was terrible, and partly caused by legislation that removed all checks and balances against the supplement industry. The drug was thought to help weight loss and muscle gain, but instead, caused a rare disorder that killed and maimed thousands. It was a horrid example of corporate greed taking advantage of consumers. That said, we still stand by our claims that no research has proven GMOs to directly cause any disease. Zero. Scientists would gain world acclaim for being able to prove that fact, as well as change our world, so we know that there are many out there clamoring to prove it. If they do, we will jump to report that fact. ©*



## A Story from the Cartoonist

My neighbor hired two boys to pick up little square bales of hay a couple years ago, and when he stopped at a four-way intersection with the tractor pulling a full rack of hay, the boys jumped off and ran back to town. I still laugh every time I think of him telling me that story. — Rick Friday

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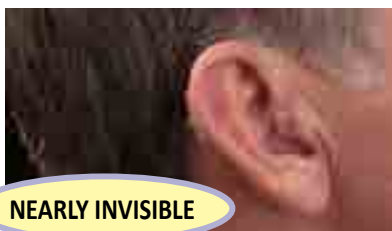
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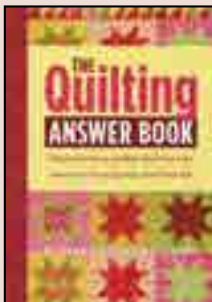
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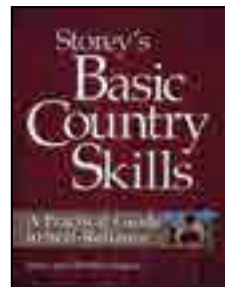
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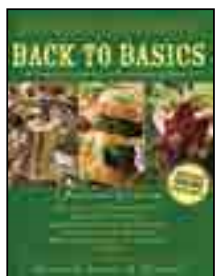
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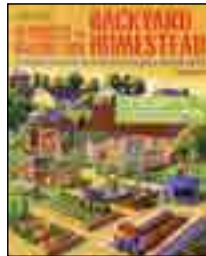


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# The Remarkable Aloe Vera Plant



BY  
CHRISTOPHER  
NYERGES  
CALIFORNIA

**S**OME TIME IN LATE 1978, my mother shared with me an experience she had with the aloe vera plant. My mother, Marie, was a registered nurse who worked at a Pasadena retirement home. About three months earlier, a housekeeper who lived on-site at the retirement home began to break out in a hive-like rash that caused her to itch constantly. The cause was said to be a nervous condition. The patient's thighs, back, arms, shoulders and neck all broke out in this rash, which the patient described as "burning like fire."

My mother offered to apply the juice of the aloe leaf to the patient's red spots, but the patient responded, "No, I'll have the doctor check it." The doctor came and prescribed Atarax (internally) for the itching and allergies, and cortisone (externally), which was applied as a cream. The doctor also prescribed tranquilizers for sleep.

After about 45 days, the patient, Lucille, told my mother that she still could not sleep at night, and that the rash hadn't improved. Lucille noted that there was a slight improvement in the rash when she stayed home and didn't go to work, so Lucille and the

doctor assumed this was a nervous condition associated with work.

So my mother, Lucille's nurse, asked again if she'd like to try some aloe. Lucille responded, "Yes, please, bring me anything!" My mother noted that Lucille's skin was hot to the touch, and there were big red spots all over.

At 7:30 a.m., my mother took a fresh succulent aloe vera leaf, slit it open, and rubbed the gel on Lucille's arms, legs, back, neck—almost her entire body. Lucille said her skin immediately felt better. By 3:30 that afternoon, all the visible red spots had disappeared, and Lucille happily told my mother that all of the burning and itching was gone. The next day Lucille told my mother that that night was the first night she'd slept in approximately 45 days.

My mother had been somewhat reticent to apply the aloe because she was subservient to the doctor, and could have lost her license by doing something without the approval of the doctor.

When the doctor arrived, Marie told him that Lucille's rash had cleared up, and she admitted to having applied aloe juice. The doctor was somewhat taciturn as he examined the patient, and, without commenting on the aloe, told my mother, "It's good that the medicine finally worked." Really?!

My mother always had a laugh re-telling this story about a doctor who couldn't see the obvious! Eventually, the other nurses referred to my mother as the "witch-doctor" because she used aloe and various other natural methods of healing, behind the doctor's back.

Over the years, I had my mother document the many cases where she used aloe to cure various skin conditions, on her patients, herself, and even cats. Marie used aloe for

Aloes for sale at a farmers market.

PHOTOS BY CHRISTOPHER  
NYERGES

sunburn, burns from hot oil, skin sores, diaper rash, bedsores and even poison oak rash. In one case, our family cat had a large open ulcer on his thigh—we weren't sure of the cause, but we presumed that the cat got into a fight. My mother directed me to put some of fresh aloe gel onto the ulcer every day for three days, while also making some of the aloe leaf into a juice, which was added to the cat's water. The wound was completely healed after three days. "It was unbelievable," expressed Marie, "but it worked!"

My mother's experiences took place more than 35 years ago, and today, aloe vera is a common household word. You can buy it anywhere, even Trader Joe's markets. And as the succulent was studied and researched all these years, many have come to call it a miracle plant.

The properties of aloe are a broad mix of antibiotic, astringent, pain inhibitor, emollient, moisturizer, antipruritic (reduces itching), as well as a nutrient. It apparently works because of the polysaccharides present, the main one of which is a glucomannan. Other ingredients of the aloe include galactose, uronic acids and pentoses. The miracle qualities of aloe are not believed to be the polysaccharides alone, but the synergistic effect of these and other compounds in the leaf.

Obviously, many have tried to create an aloe product that you can buy in the bottle, and some are quite good. I've had some good results

## Growing Aloe Vera Indoors



1. Plant your aloe vera plants in wide, well-draining containers, with soil made for cacti and succulents.
2. Place in indirect sunlight or artificial light.
3. Water deeply but allow soil to dry one to two inches deep between waterings.
4. Remove offshoots or "babies" that will produce a new plant as you find them.

A few mature aloe vera plants.



from the aloe drink that I have purchased at Trader Joe's market. But please make no mistake about it: the best results come from the gel from the freshly broken leaf of aloe. And though aloe vera seems to be the best, any of the juice from any aloe can be used for burns and poison oak. ©

*Nyerges is the former editor of Wilderness Way magazine, and the author of 14 books, including Guide to Wild Foods, How to Survive Anywhere, Foraging California, and others. He leads regular outdoor field trips to identify edible and medicinal wild plants. He can be reached at [www.SchoolofSelf-Reliance.com](http://www.SchoolofSelf-Reliance.com) or P.O. Box 41834, Eagle Rock, CA 90041.*



Rod Bruyere, Ojibway, holds an aloe vera plant.

Marie used aloe for sunburn, burns from hot oil, skin sores, diaper rash, bedsores and even poison oak rash.



LEFT: Arnold Valdez of Resolano Institute of San Luis, Colorado, in front of his hemp test plot. TOP: Arnold Valdez with helpers make hemp bricks at Resolano Institute. ABOVE: Testing the fiber made from industrial hemp.

# The Fall and Resurrection of Hemp

What was once declared illegal is now returning as a major cash crop

BY KARIN  
DENEKE  
COLORADO

**A** COMMON CROP George Washington raised during the 1760s on his farms in Virginia was declared illegal in the 1930s. Known as *cannabis sativa*, or hemp, the plant originated in Asia thousands of years ago. The first industrial hemp crop was planted on North American soil by a French botanist in Nova Scotia in the year 1606.

Another strain of cannabis—much more in the limelight—is marijuana. Both plant varieties display the telltale palmate compound leaves, yet the THC (tetrahydrocannabinol) content of industrial hemp stands at a mere 0.3 percent—and definitely lacks the hallucinogen drug potential of marijuana.

While hemp is primarily cultivated for its fiber and the oil from its seeds, it is no secret that marijuana is raised for its medical and recreational uses. Its THC content,

or psychoactive component, ranges between 5 to 30 percent or more.

There was a time when Washington, who had devoted himself to the improvement of American agriculture, debated whether industrial hemp could be a more lucrative cash crop than tobacco. In those days, the fiber from hemp plants was a much called-for commodity used for the production of paper, rope and canvas. And for the first 162 years following the signing of the Declaration of Independence, which was recorded on hemp fiber, marijuana was legal and industrial hemp was a common field crop in the United States.

George Washington would have turned over in his grave if he knew what transpired in the year 1937—four years after the end of alcohol prohibition—when industrial hemp production, and also the cultivation and recreational use of its psychoactive sister plant marijuana, were outlawed.

During the 1930s, certain elements in the U.S. Government, as well as big name corporations in the



LEFT: Young clones protected by shelters at Tree of Life; an industrial hemp field in the north central part of the San Luis Valley in Colorado.

ABOVE: A single clone.

PHOTOS COURTESY OF THE TREE OF LIFE FARM

private sector, pushed the hemp industry into a corner. Hemp fiber posed an economic threat to the timber industry and its related paper manufacturing.

It is estimated that one acre of hemp can produce as much paper as two to four acres of trees.

Hemp plants can reach heights of 12 feet, and require less water, herbicides and pesticides than other fiber crops. Hemp, when planted at a high density, within a month from emergence, can quickly spread a tight canopy over a field, and thereby choke out weeds and conserve topsoil moisture. However, the marijuana plant requires more growing space than hemp, and consumes more water as it develops into a more bushy, multi-branched plant.

Years ago, industrial hemp was a sought-after crop for the manufacturing of rope, for canvas and for sailing vessels, for the roofs of covered wagons, and served as the mainstay for the printing industry. It was made into articles of clothing—the first Levi Jeans contained hemp fiber. Henry Ford's early automobiles ran on hemp ethanol, extracted from the seeds of industrial hemp.

In the year 2012, the voters of the State of Colorado passed

Amendment 64, making the personal use of marijuana legal. And Senate Bill 13-241—the cultivation of industrial hemp—was signed by Colorado's Governor Hickenlooper in May of the following year.

A provision in the 2014 Farm Bill signed by President Obama that February, addresses section 7606, allowing universities and state departments to cultivate industrial hemp for limited purposes, and requiring certification and registration of grow sites.

In 2015, Congress introduced the Industrial Hemp Farming Act, to exclude industrial hemp from the definition of marijuana, as both are considered cannabis species. No final action has been taken. (It is said that the recent endorsement from Bernie Sanders has given the bill a boost.)

Even though industrial hemp farming is still in the infant stages, presently 28 states, including Colorado, have recorded laws related to industrial hemp cultivation. These laws and rules differ from state to state.

## ON THE GROUND

Costilla County, part of the San Luis Valley in south central Colorado, is one of the least prosperous counties in the state. A considerable portion of its high desert, alkaline sandy loam soil is covered in sage and rabbit brush. Annual rainfall amounts are less than 10 inches. Soon after Governor Hickenlooper signed Senate Bill 13-241 making industrial hemp cultivation legal in Colorado, Costilla County Commissioners in San Luis became interested in conducting industrial hemp research. This project was later transferred to the Resolana Farm/Institute in rural Costilla County, operated by Arnold and Maria Valdez. The 23-acre farm prides itself for its Certified Naturally Grown (CNG) Produce.

Arnold Valdez, a trained architect with 15 years experience in land use planning, dedicated one acre of Resolana Institute, his sustainable farming and research center which emphasizes renewable energy, to industrial hemp research. Here he tests conventional and minimum

tillage, various cover crops, natural fertilizer applications, crop rotation and water use related to hemp.

Hemp matures in approximately three months, planting to harvest, and can tolerate light frost. This fits well into the high elevation farming of the San Luis Valley, where short three-month growing seasons and cool nighttime temperatures limit cultivation of other cash crops. Industrial hemp, with its large root system, will also improve the quality of heavy soils.

Resolana Institute's research is conducted in cooperation with Adams State University of Alamosa, Colorado, and Fibershed, a California organization with a mission to develop renewable textiles, as well as the Colorado Department of Agriculture. Seeds for the project had to be imported from France. Obtaining hemp seed in the United States still presents a legal nightmare.

Hemp fiber is a versatile product with many uses. Valdez is currently experimenting with hemp blocks for construction purposes. He uses hemp fiber made from shredded dried hemp stalks, incorporates this fiber into a mixture of sandy loam soil, water, and natural wood ashes (instead of lime), and presses this mixture into a single chamber of an old hand operated compressed brick machine. The result are blocks lighter in weight than conventional adobe earth blocks, and more energy efficient, because the hemp

## When It's Legal



The following is Colorado's interpretation of the hemp law:

"Colorado permits growing and processing Industrial Hemp by registered persons for commercial or research and development purposes.

Establishes an Industrial Hemp committee to work with the Department of Agriculture to establish an Industrial Hemp registration program and a seed certification program.

Establishes an Industrial Hemp grant research program for state institutions or higher education to conduct research to develop or recreate strains of Industrial Hemp best suited for industrial applications."

— C.R.S.A. 35-61-101 – 35-61-109

blocks have mass on the inside and insulation on the outside, and are well suited for exterior walls. Another advantage is hemp's resistance to mold and mildew. The usage of hemp to create building materials in the United States is on the upswing. However, we are far behind Australia and Europe.

Valdez did not separate the inner and outer layers of his hemp stalks, and fed the entire stalks through

a wood chipper to obtain the fiber needed for his hemp building blocks. Colorado, at this point, does not have a facility where the pulping and breakdown of harvested industrial hemp fiber bundles is performed. The nearest plant is located in Nebraska. The inner layer of the less than an inch in diameter stalk, is referred to as pith. The pith is surrounded by an outer layer of woody core fiber called hurds, and this layer is used for textiles, cordage and fine paper products. The inner wood-like core fiber is made into animal bedding, mulch, fuel and building materials.

At another location in Costilla County, not far from the New Mexico line, the Tree of Life, a 12-acre hemp farm, is growing specially bred hemp plants with the goal of extracting high potency CBD oil (Cannabidol) from their crop. At the Tree of Life Farm, asexually reproduced cannabis clones, or feminized cuttings, were rooted in a greenhouse prior to transplanting into prepared fields in late June and early July. These clones are spaced two feet or more apart to allow room for the developing bushy plants. During the month of September, they were hand harvested by severing the stalks at the base of the plant and then processing them in a special indoor environment. CBD rich oil will be extracted from the harvested leaves and flowers. This valuable oil has anti-inflammatory properties and is used for medicinal applications. CBD is considered a non-psychoactive cannabinoid.

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There is a considerable difference, not only in profit, between the CBD-rich oil produced from the hemp “drug” plants and the oil produced from hemp seeds, which contain zero CBD and THC. Industrial hemp seed oil is used in varnish, paints, body care products, as well as snack foods.

The oil is even sold on Amazon.

The key difference between industrial hemp plants and “drug plants” is their resin content, which is low in industrial hemp and high in “Medical Jane.” Resin is the sticky gooey cannabis resin found mainly in the plants’ female flowers.

In the north-central part of the San Luis Valley, where the major crops are small grains and potatoes, a new crop is showing up—industrial hemp, watered sparingly by center pivot irrigation. Planted in tight rows and at a high density, these fields by early July, formed a tight canopy, suppressing weeds and hiding the soil underneath.

The cultivation and the growing of its sister plant marijuana is increasing all across Colorado as well as in other complying states. Commercial cultivation of marijuana is strictly controlled by law enforcement, and marijuana plants are required to be raised in greenhouses only. Owner-operators are forced to apply for special licenses and have to hand over a large fee for the legal privileges.

Many countries, including France, Germany, and China have developed extensive hemp fiber industries. A major car manufacturer in Germany has switched to hemp fiber to build automobile fenders and panels instead of using traditional fiberglass. Cultivation of industrial hemp is in full swing on the fields of our neighbor to the north in Canada.

It is estimated, when considering the low inputs required to raise industrial hemp, profits for farmers will outnumber those from conventional crops such as corn and soybeans. ☺

*Karin Deneke writes from her homestead in Fort Garland, Colorado.*

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# Propagating House Plants can be a Rewarding Hobby

TOP ROW:  
African violets bloom on and off for most of the year.  
BOTTOM ROW:  
Christmas cacti blooms in shades from pink to orange to white and is a succulent.

BY  
KARIN DENEKE  
COLORADO

**Y**OU DO NOT NEED A DEGREE in botany to successfully propagate colorful house plants. It is a rewarding hobby, a hobby which requires little investment, and provides much satisfaction. African violet and Christmas cactus plants lend themselves well for rooting individual leaf cuttings.

The process is almost foolproof. Even those who profess to lack a green thumb will be surprised at the results.

Believe it or not, a few years ago I rooted a single African violet leaf, and now have an east facing windowsill filled with mature plants, each an offspring from the original cutting. These plants bloom on and off for most of the year—sometimes all of them at once, creating a colorful display—a spirit-lifting sight on dreary winter days.

The Christmas cactus is almost foolproof for propagation. Take a stem, or even just a single stem segment, push the lower portion into moist potting soil—preferably using a small clay pot. Give it time to root, do not let the soil dry out, and you will be rewarded within a month or two with your own starter plant.

I have experimented with African violet propagation by either taking the 2- to 3-inch stem connected to a single leaf and placing the lower inch of the stem in a small water filled glass container, or by planting the stem into a small clay pot filled with moist potting soil. The advantage of the glass container is that you can watch the root development, however once that has occurred, you have the additional chore of planting your cutting.

You will be surprised when you spot multiple tiny leaves emerging from the original African violet leaf stem. These will in time develop into individual plants. I have transplanted six or more offspring from one leaf cutting. Should you prefer not to separate these small plants, the end result is a multi-crowned plant. For the latter I would start out using a 2- to 2 1/2-inch pot. For the individual transplants a smaller pot will do.

Shop for a good quality potting soil for house plants, or a special African violet mix, to obtain super performance. Occasional fertilizer sticks will boost flowering and leaf development. To keep my African violets happy, I make sure their soil remains moist. Avoid making contact with the crowns when watering, otherwise sunspots develop on the leaves. I prefer watering from below by adding water to

the saucers. By checking the leaves of my plants I can determine their need for water. If they have lost their crispness and are drooping somewhat, don't delay watering. Periodically I treat my plants to a thorough soaking. That means I place the clay pot into a larger water containing vessel for several hours, thus allowing the clay to soak up moisture. This works well as long as I do not overdo it, and later make certain the plants are resting in dry saucers. I always remove the dried up flowers, this allows more vigor for the plants, and gives a more attractive appearance. African violets do best at a location where they are exposed to moderate, bright indirect or indoor light. South- or west-facing windows are not a good choice. My plants thrive in east-facing windows which have wide sills allowing space for plant growth. However it is only a matter of time, before re-potting is in order, requiring larger diameter containers.

African violet cultivars range from miniature to medium, or large diameter plants. Flowers come in a variety of hues from blue and purple to pink and white. Blossoms may be single, double, fringed and ruffled. Their attractive leaves come in ruffled, scalloped, or variegated form.

The Christmas cactus, which blooms in shades from pink, to orange and white, is a member of the succulent species. It is a relatively easy house plant to take care of. By rooting stems from different colored plants, it is also possible to create a potpourri of blooms in one pot. The plants do best in filtered light. Direct sunlight is not recommended. Do not over water, but when in bloom the plant requires more moisture than normal. My plants flower several times a year. Contrary to what some people recommend, I do not keep them in the same location at all times. Often, after moving them, they start to bud again.

Homegrown African violets and Christmas cactus plants make wonderful gifts for any occasion, whether it is for house-warmings, birthdays or on holidays. It means so much more to present a gift that has not been bought in a store. ©

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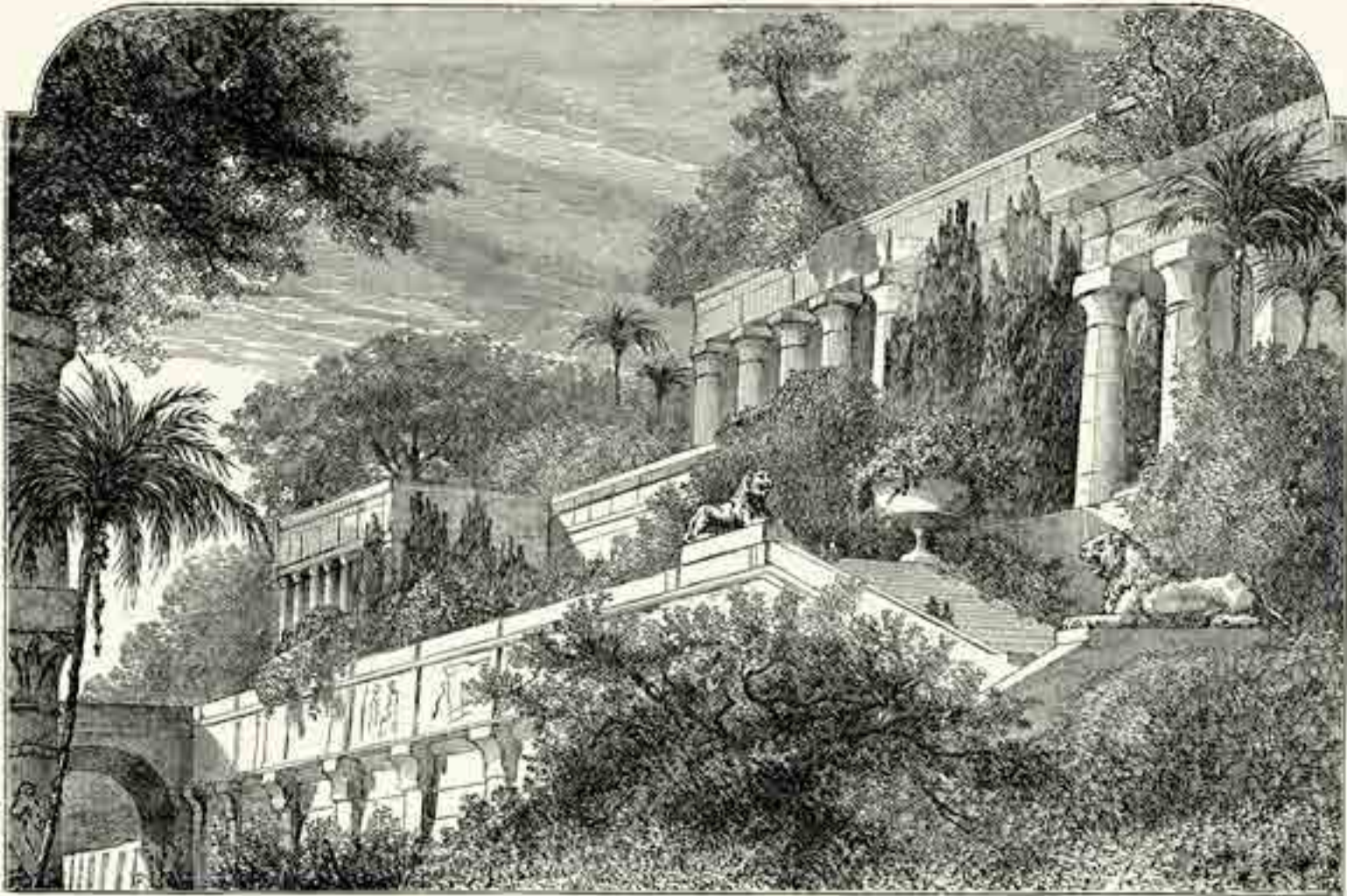
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## Remembering the Heroes of the Homestead

BY ANITA B.  
STONE

THE HOMESTEADER'S  
BITS AND PIECES

**I**F GIVEN A CHOICE OF LIFESTYLES, homesteading would be my number one pick because there is a self-sufficiency and reliance on growing, harvesting and preserving our food. The reliance of not depending on someone else to sustain my family has become a popular choice with many of us. The Homestead Act, which dates back to 1862 (and is no longer in effect), impacted our world. What began as an agricultural way of life, including home food preservation, small-scale production of textiles, clothing and craftworks, has come full circle.

Fast forward more than 150 years to modern-day homesteaders, progressing to the use of renewable energy, including solar electricity, wind power and even invented DIY cars—anything to make our lives easier and less costly. We are not defined by whether we live in the city or the country, but by lifestyle. We have returned back-to-the-land as healthy homesteaders,

We are not defined by whether we live in the city or the country, but by lifestyle.

using familiar techniques in a 21st century mindset. We continue to grow, harvest and preserve food. We insist on self-sufficiency and sustainability.

It might have all started with one of the Seven Wonders of the World—the Hanging Gardens of Babylon, or history-makers such as George Washington’s row cropping, McCormick’s reaper and Thomas Jefferson’s homestead methods. We don’t have to search far to find unsung homestead heroes we follow today.

For example, J. Rodale was a pioneer, whose organic methods are recognized by the USDA. We have become a community of both conventional and organic gardening.

So we give kudos to pioneers like Rodale who introduced us to organic farming. It has been proven that yields can surpass conventional crops, even during drought. All we need is to maintain healthy soil. In comparison, homesteaders using organic gardening methods will realize an increase in healthy living.

More information about how to maintain healthy soil can be found by reading *The Manifesto of Organic Farming* from the Rodale Institute.

Agronomist George McKibben stated, “If we resist the will to till, we may find out how positive the soil responds with its own set of microorganisms and nutrients.” The no-till gardening method is widely used today and has been labeled as the greatest single contribution in decreasing soil erosion.

Engineer Mel Bartholomew, set out to find the perfect vegetable garden and popularized a grid-like framework for what he called “square foot gardening.” He calmed

his frustration with weeding and watering rows of vegetables in his backyard by applying his engineering expertise and constructed a 12-foot-by-12-foot subdivided plot, which introduced a concept to horticulturists and a book. He is known to have said, “I garden with a salad bowl in mind, not a wheelbarrow.” Ironically, his first book, *Square Foot Gardening*, was published by Rodale Press. Bartholomew and his sister established the Square Food Gardening Foundation and started planting programs at nursing homes, schools, community gardens and added nutrition education.

I would be remiss if no mention was made of Biltmore Estate in Asheville, North Carolina. This proves that homesteading arises in any size garden, from a castle to a tiny house. The Biltmore legacy stands out in everyone’s mind, with 8,000 acres that established the first forestry education program in the United States and introduced Victorian landscaping; a form of homesteading.

The Homestead National Monument of America near Beatrice, Nebraska, has saved a piece of history by preserving a representation of the things homesteaders needed to survive: food, housing and water.

There are many homesteaders who invent and use their own methods of farming. You only have to look in kitchens and backyards to discover new and unique ideas to improve, preserve and treasure the homestead. ©

*Anita Stone is an expert gardener who writes frequently for COUNTRYSIDE magazine. Ask her questions by emailing them to countrysidemag@swiftcom.com, with the subject line, “Anita’s Row.”*



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## Recipes



### Sweet Potato Pancakes

One of our favorite breakfasts in our little country place is pancakes. Almost all of our frying is done in a cast iron frying pan, the same one my grandma gave us when we got married 35 years ago.

#### Ingredients:

- 1 egg
- ¼ cup brown sugar
- 1 cup self-rising flour
- ¼ teaspoon cinnamon
- ½ cup cooked sweet potatoes
- ½ cup milk or more for texture
- 2 teaspoons vanilla flavoring
- 2 tablespoons molasses
- \*Butter and maple syrup

Boil or bake a small sweet potato. Then, mix all the ingredients together. Pour the milk for your texture of pancake batter (think thin).

Once pancakes are cooked, spread butter on top liberally while hot and then serve it with maple syrup.

—Dale Russell

### Ham Chowder

Leftovers reheat nicely and freeze well. Excellent served with homemade cornbread and honey, then home canned pears for dessert.

#### Ingredients:

- Leftover pieces of ham you've roasted (bone in preferred). Keep the juices from the bottom of the pan, too.
- 2 large sweet potatoes, peeled and cubed
  - 2-3 large white flesh potatoes, peeled and cubed
  - 1 large onion, peeled and diced
  - 4 large parsnips, peeled and cubed
  - 1 medium/large rutabaga, peeled and cubed
  - 6-8 carrots, scrubbed and cut into pieces
  - 2-3 ribs celery, sliced
  - 2 cups snap peas, cut into pieces
  - 2 cups green beans, cut into pieces
  - Black pepper to taste

In a large Dutch oven, place ham (cut into bite-size pieces) and pan juices (you may add water if needed). Combine with ingredients and cook on the stove top until vegetables are tender, or place in oven at 325°F for 3 hours.

—Bonnie Wolfe



### Zucchini Pineapple

Here is a recipe perfect for the really big zucchini, which is how I like them best anyway.

#### Ingredients:

- 4 quarts cubed zucchini, peeled and cut into 1/2" cubes (3 very large zucchini, with the guts scooped out, are about what is needed)
- 46 ounces of canned, unsweetened pineapple juice
- 1 1/2 cups bottled lemon juice
- 3 cups sugar

Mix all ingredients in a large saucepan and bring to a boil. Simmer 20 minutes. Fill hot jars with hot mixture and cooking liquid, leaving 1/2" headspace. Remove air bubbles. Wipe jar rims. Adjust lids. Process in boiling water bath—half pints or pints for 15 minutes.

Makes 8 pints.

—Cheryl Z., Odell, Illinois 



# Finding the Best Pumpkins for Pies

I couldn't find the right one, so I went looking for answers

BY  
MARISSA AMES  
NEVADA

PHOTOS BY  
SHELLEY DEDAUIW

## IT'S NOT A PUMPKIN. OR IS IT?

Three pies sat on my table. A sweetly spiced aroma wafted through the room while condensation glistened atop the baked custard. Freshly whipped cream with speckles of black vanilla bean mounded high in an earthenware bowl. One pie was deep orange, while another was more salmon-colored, and the third had a cinnamon-brown tone.

A dozen people sat around, waiting for the first slice. They scrutinized the selections. My friends had gathered for a pie tasting; their duties were to test all three and tell me which reigned supreme. All the pies adhered to the same recipe except for one ingredient. And I wouldn't tell my friends what it was.

Tamalyn, a certified chef, tasted and savored each one. Then she accused, "Hey, this is sweet potato!"

I just smiled. None of the pies were made with actual "pumpkin."

## THE QUEST FOR THE PERFECT PIE

Like most of my homesteading adventures, the quest for the perfect pumpkin pie began in my garden. And my first endeavor as a gardening adult involved pumpkins.

Raise your hand if you chose specialty French or Italian varieties for your first pumpkin-growing endeavor. You probably chose jack o' lanterns, right? They're cute, easy, and seeds are 99 cents a packet.

And they taste horrible.

But I didn't know that. Because it's a pumpkin! And pumpkins make pies. So I grabbed the first seed packet labeled "pumpkin" from the dollar store shelf and planted. Jack o' lanterns swelled up almost as big as my water bill. Then I cut the ripe fruit, roasted it and pureed loose, watery, bitter flesh into something that looked nothing like the deeply hued selections in commercial cans.

Realizing I had chosen the wrong type of pumpkin, I tried again the next year. I logged onto the seed company's website and searched up, "pumpkin." And I chose the only one that also had "pie" in the



The best pumpkins for pies may not be pumpkins after all, at least to Americans. What we call pumpkins here might not match the rest of the world.

description, convinced that “Small Sugar” was key to the pies, breads and cookies of my dreams.

Small sugar pumpkins did well in my climate. By October, I had 20 pretty orange globes curing atop my chicken coop. I couldn’t wait to try the first one. Since it wasn’t yet November, I baked bread first. After cutting the top off, scooping out the guts, and roasting the fruit, I tasted the cooked flesh. It was bitter, not sugary as the name suggested. But it was denser than the jack o’ lantern flesh so, after draining it in a colander for over an hour, I made bread.

I attribute the bread’s deliciousness to brown sugar, cinnamon, nutmeg, cloves...all the luscious seasonings that gave my creation its true flavor. Even the color was because of the spices, not because of the pumpkin.

I had to be missing something.

To the internet I went. How could I turn my garden pumpkins into the sweet, dense purée offered in the cans? By searching, “best pumpkins for pies,” I found articles with conflicting claims. They all agreed on one thing, though:

The best choice wasn’t a pumpkin at all.

#### A PUMPKIN BY ANY OTHER NAME

It’s semantics, really. The words we call things. Internet articles claimed the best choices were actually squash. Butternut, Long Island Cheese, Buttercup...not pumpkins.

But all pumpkins are squash. And, in some places, all winter squash are pumpkins.

While working on a story for Countryside Daily, the online portion of this magazine, I delved into the reasons “growing pumpkins” was really about growing squash.

There are five domesticated species of squash. All sub-species, such as butternut, cushaw, hubbard



## Farm Fresh Pumpkin Pie

Instead of peeling and cubing the squash, simply stab it with a knife and set it on a cookie sheet. Lower your oven rack until the pumpkin fits then bake at 400 degrees until a knife can easily insert through the sides. Cool the squash then cut it open and remove the seeds. Scrape out the flesh. Let the roasted flesh drain in a colander for at least 30 minutes.

If you want to save and roast seeds, cut the top off and scrape seeds out before baking. Then put the top back on and roast the whole pumpkin until it is soft.

Remember, “pumpkin” is a subjective term. You can even use roasted sweet potato if a loved one can’t eat squash. For a more distinguished flavor, substitute evaporated goat milk for the heavy cream or use 1 and ¼ cups honey instead of sugar.

#### Crust Ingredients:

1 cup white or whole wheat flour  
½ cup rolled oats  
½ cup cold butter  
¼ cup cold water

#### Custard Ingredients:

3 cups roasted, drained squash  
1 cup raw or brown sugar  
2 ¼ cups heavy cream  
4 large eggs  
½ teaspoon salt  
1 teaspoon vanilla extract  
1 ½ teaspoons ground cinnamon  
1 teaspoon freshly ground nutmeg  
½ teaspoon ground ginger  
¼ teaspoon allspice

Heat oven to 425°F.

Pulse the rolled oats in a food processor until the texture of coarse meal. Mix oats and flour in a bowl. Cut in the butter until the mixture resembles pea-sized chunks. Sprinkle in cold water, mixing with a fork, until the dough comes together and isn’t dry.

Lay a piece of plastic wrap or waxed paper on the counter. Place the ball of pie dough in the middle. Roll the dough into a circle on the plastic/paper until it is about nine inches across. Lift dough and plastic/paper then invert dough-side-down over the pie plate. Press the crust into the pie plate, shaping as necessary; then carefully peel the plastic/paper away.

Combine all the custard ingredients within a blender or food processor. Pulse until smooth.

Place the pie plate on a baking sheet to avoid spills. Set both plate and sheet onto the middle rack of the oven and carefully pour the pumpkin custard into the crust. Don’t worry about overfilling; let it rise all the way to the top edge.

Bake at 425°F for 15 minutes. Then turn the oven down to 350 and bake another 45-60 minutes, until a metal fork inserted into the middle comes out clean. Remove the pie from the oven and let cool completely before serving.

Top with real whipped cream.

Even Wikipedia agrees the term “pumpkin” has no specific botanical or scientific meaning.

A pumpkin within one region is a squash within another and a melon in yet a third.

and zucchini fall within those five. And most of what Americans call “pumpkins” are part of the *cucurbita pepo* species. They’re round, orange, ribbed...sometimes white with orange flesh. Sometimes flattened, sometimes taller. But they almost all look like something that grins, glowing with a candle inside, at the end of October.

It was while I researched that story that I realized people in Australia and New Zealand use the word “pumpkin” for all winter squash.

Back to the internet I went, this time to a large and cherished group of fellow writers. I asked those living in different countries, “What does ‘pumpkin’ mean where you live?”

Michael Manz was first to respond. He’s an expatriate Canadian living in China. Though other Canadian friends confirmed that “pumpkin” referred to jack o’ lantern types, Michael said pumpkins in his part of China are small and green. They’re still orange on the inside, and sweet. The Chinese pumpkins are dipped in egg and fried.

Then Holly Kench replied. She lives in Tasmania, just south of the Australian continent. “The concept of being able to carve a pumpkin makes no sense to me outside the movies,” she explained. The things she calls pumpkins are very hard and thick, but still sweet. They’re also green.

Holly showed pictures of the most common Kent pumpkin, a

round and squat fruit with thick orange flesh and a small seed cavity. The skin is forest green with yellow spots. I’d call it a kabocha squash. Lighter-colored Jarrahdale pumpkins are blue-gray. Holly described the only orange-colored pumpkins as “butternut pumpkins” and showed me a picture of my beloved butternut squash.

At that point, Michael spoke up and identified the photo of the “Kent pumpkin” as the type he eats in China. But in Chinese they’re called *Nan Gua*, or “South Melon.” Michael says, “Everything is a melon in Chinese. Cucumbers are ‘yellow melons.’”

Even Wikipedia agrees the term “pumpkin” has no specific botanical or scientific meaning. A pumpkin within one region is a squash within another and a melon in yet a third.

#### SO WAIT...IT IS A PUMPKIN?

No, it’s not. It is, but it’s... Okay, let’s start again.

The whole mix-up involves jack o’ lanterns. They’re so popular, due to American traditions, that we’ve come to accept those as the standard “pumpkin.” The term has become synonymous with round, ribbed fruits and cavernous seed hollows. Pretty pictures and marketing have convinced us that pies are made with these glowing orbs.

Though pumpkins are native to North America, their introduction

to Tudor England made them a popular pie filler. Pumpkin pie recipes are found in English cookbooks written as early as 1675. The Pilgrims carried the concept of pumpkin pie back to New England with them while the English took squash recipes in a different direction.

But jack o’ lanterns are a fairly new thing outside of America. Nick Johns, living in the United Kingdom, claims that in his first 20 years, jack o’ lanterns were only seen on TV and recently became popular when trick-or-treating overshadowed Britain’s autumn holiday of Bonfire Night. John says even butternut squash recently gained popularity due to the rise of celebrity chef shows.

Back in America, pumpkin pie is a regional thing. Pretty pictures and marketing often dismiss sweet potato pie, which is a cheaper and more available filling in the southern United States, but more difficult to grow up north. When drained to the same consistency, baked winter squash and baked sweet potato flesh are interchangeable within recipes.

In my pie tasting party, only Tamalyn, the certified chef, knew the difference.

#### ARE YOU GOING TO REVEAL THE BEST PUMPKIN OR NOT?

Jack o’ lanterns can make pies, if you roast the flesh then drain it long enough. But any palatable flavor comes from the sugar and spices. Cinnamon, nutmeg, allspice and ginger give pumpkin pie its traditional flavor. And even sub-par pumpkin can improve with good spices. Small sugar pumpkins work better. But if you’re also on a quest to make the best pumpkin pie, why not take it up a notch?

#### READ MORE FROM MARISSA AMES

Marissa Ames writes regularly for The Countryside Daily, our digital version of the magazine that goes out daily to readers and is full of tips, hints and ideas for your homestead, small farm or backyard.

My guests tasted all three pies then cast their votes. I still hadn't revealed the ingredients, though those who despised sweet potatoes were now hesitant to try that one.

Pie #3 was voted most flavorful. But not everyone wanted the deep, full-bodied tone of sweet potatoes.

Pie #1 was prettiest, a brilliant orange from the Castilla squash I'd purchased at the Hispanic market. With small seed cavities and undeniable sweetness, Castilla squash have stringy crimson flesh, which must be pureed for the best texture. They are bigger than Long Island Cheese and are also called Musque de Provence.

But the winner was made from a *zucchini rampicante* grown within my own garden. Like a butternut with a really long neck, these are tan on the outside and light orange within. Other names include tromboncino or *zucchetta rampicante*, and they're often eaten young as a summer squash. Seeds only form within the swelling at the end, leaving one to three feet of neck that can be peeled, diced, roasted, or made into pies. Pie #2 was such a favorite that one of the judges started *zucchini rampicante* in her garden the next year.

The best pumpkins for pies are the sweetest, densest winter squash. Usually they're *cucurbita moschata* or *cucurbita maxima*, as the *pepo* species is often too mild and watery. Grow buttercup or Musque de Provence within your garden or purchase butternut at the grocery store. Give *zucchini rampicante* a try or cultivate unique squash like Galeux D'eyesines or Marina Di Chioggia, which get their warts from sugars seeping through the skin. Make sure squash are fully ripe before roasting, draining and crafting into your perfect pie. ©

*Marissa Ames writes from Reno, Nevada, where she maintains Ames Family Farm on 1/8 of an urban acre.*

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# Congrats on the Harvest! You Did It!

Now what?



BY  
MARISSA AMES  
NEVADA

PHOTOS BY  
SHELLEY DEDAUIW

**A** SUCCESSFUL GARDENING SEASON means you're probably drowning in produce right now. And you don't want it to go right into the compost pile. So how do you store all this stuff?

## TO FRIDGE OR NOT TO FRIDGE

Though it's a marvelous invention, the refrigerator isn't for everything. It preserves some and kills others. But the list is not that complicated. Ripe winter squash and pumpkins, Irish and sweet potatoes, onions and garlic store best in the root cellar. Otherwise, the fridge is fine.

Potatoes and sweet potatoes, squash, and alliums are very much alive. They're ready to sprout if conditions are right and the fridge can shorten their life. Cold temperatures convert starches into sugars, starches alliums and potatoes need as fuel for new growth. And countertops are the same temperature as soil during a nice spring day. Too long in a warm room will trigger your vegetables to move into the next season. Even

squash will soften and seeds will germinate inside.

The perfect location for these living vegetables is in a dark room at about 55°F. The temperature keeps them dormant but doesn't damage the vegetable. Airflow allows them to breathe. And the lack of light hinders sprouting for a while longer. Root cellars naturally maintain this environment if they're not damp.

The "living vegetable" rule can also apply to apples but doesn't work for berries or other tree fruits such as pears, peaches and apricots. If you're still storing those this late in the year, put them in the refrigerator if you don't plan to use them immediately.

Refrigeration is best for anything green and for root vegetables such as beets, turnips, carrots, and Jerusalem artichokes. Even kohlrabi, which isn't technically a root, stores best in the fridge. Between 32 and 40 degrees, with humidity of 90 to 95 percent, is best. Consider storing these vegetables in breathable plastic bags, the same way carrots are stored in the grocery store. Don't worry about washing them; they actually last longer if you don't. Cut off tops just above the root crown because roots can dehydrate through the greens. Broccoli and cauliflower only last a few weeks while some root vegetables stay good for several months.

Check refrigerated vegetables regularly. If their odor increases, they're starting to go bad. Discard or compost vegetables that have blackened, shriveled, become slimy, or seep moisture.

## CURING YOUR LIVING VEGETABLES

For long-term storage, don't put these vegetables right into the root cellar.

Harvest your vegetables before it freezes. Though a little frost on

## How Long Will It Last?

**What can you expect from your vegetables if you store them correctly?**

This table applies to vegetables stored within the refrigerator or cool, dry areas, as described in the article.

**Broccoli, cauliflower, Brussels sprouts:**

7-14 days

**Cabbage:**

up to 2 months

**Scallions and mild onions:**

2-4 weeks in the fridge

**Pungent onions:**

up to a year

**Garlic:**

3-5 months

**Radishes:**

up to a month

**Beets:**

1-3 months

**Carrots and parsnips:**

2-6 months

**Rutabagas:**

up to a month

**Turnips:**

4-6 months

**Horseradish:**

up to a year

**Potatoes:**

up to 9 months

**Acorn and spaghetti squash:**

4 weeks

**Jack o' lanterns:**

2-3 months

**Butternut squash:**

up to 6 months

**Hubbard squash:**

4-8 months

**Decorative gourds:**

up to 6 months



Garlic, carrots and peppers can stay fresh for a couple months at least if stored properly.

the pumpkin does indeed sweeten it, frost also greatly reduces storage time because it kills sections of a cold-intolerant plant.

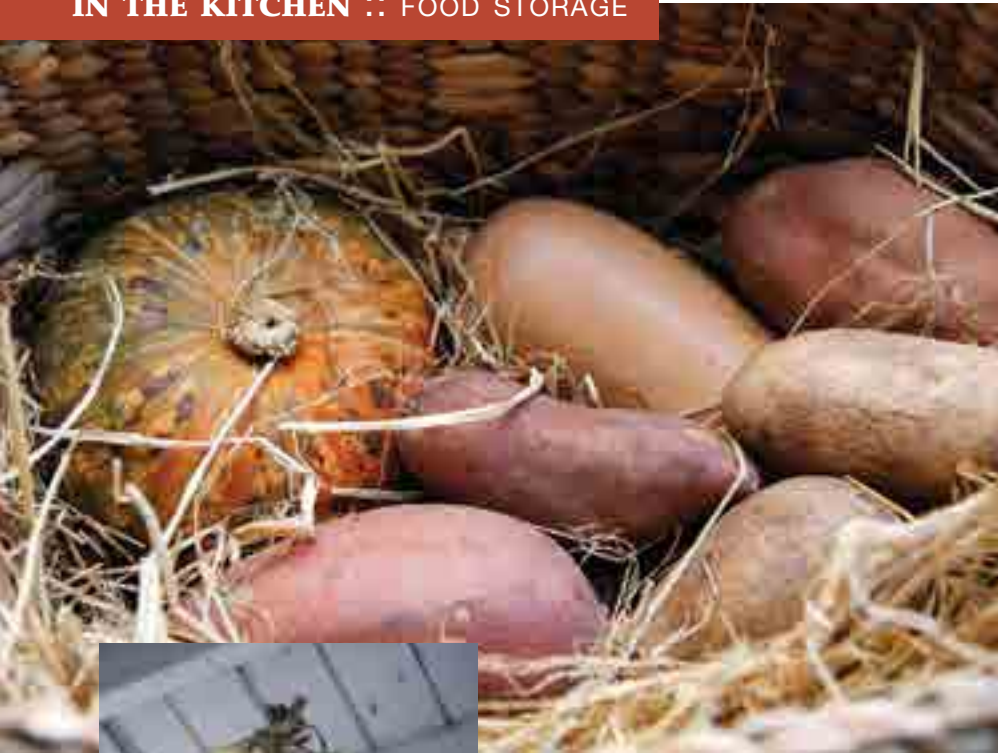
Resist the urge to spray off root vegetables. A little dirt won't hurt them; a little water might. Let them dry in the sun, but bring potatoes in before an hour has passed so they won't develop excess solanine. Dirty squash may be gently cleaned with a solution of one part bleach to 10 parts water. The bleach kills pathogens that may enter through nicks and scratches. Leave stems on pumpkins and winter squash and don't cut the roots off garlic and onions, since roots and stems help regulate drying. Don't throw vegetables into piles or wheelbarrows, as fun as it may sound, because it can cause damage that might not heal. Bacteria can enter even tiny scratches.

And speaking of healing, that's what curing is intended to do.

It allows the living vegetable a chance to heal those smaller nicks and bruises which occurred during harvest. It also develops a thicker skin around the vegetables so moisture stays inside.

Let squash, onions and garlic sit in a well-ventilated and warm area, about 75°F. Some farmers allow their crops to lie in the fields if the weather is dry and sunny. Others may set them on shelves in a comfortable room or tie garlic into bundles and hang it on a wall. Sweet potatoes prefer 80 to 85°F and almost 90 percent humidity; field curing only works in the deep south, so you might need to put these in the laundry room or kitchen. Nightshade (Irish) potatoes need it cooler, 45 to 60°F, with high humidity.

After two to four weeks, move the cured vegetables to a cool, dry, dark and well-ventilated location. This is when you can cut the tops and roots



from your onions and garlic. Do not place living vegetables in plastic bags or waterproof containers because this can promote decay from excess moisture. Cardboard boxes, wire baskets, or burlap sacks are ideal. Some dedicated gardeners even purchase slatted wooden racks for their winter vegetables. Squash and pumpkins should sit in a single layer, with gaps between, so air can circulate.

Store each vegetable with its own kind. Those “Taters and Onions” bins are best for either taters or onions. Onions and apples release gasses, such as methane, which can make others ripen or decay faster.

### OUT OF SIGHT, WELL IN MIND

The downside to root cellaring

is that you don’t see the vegetables every day. It’s easy to forget them.

Research the best storage times for your vegetables, since they differ by variety. Acorn squash is best in the first month, while hubbards can last until spring. Mild onions should be used within a few weeks while pungent varieties can last a year if they’re cured right. And both sweet and Irish potatoes should stay good at least until it’s time to replant in the spring.

Check your vegetables often.

Gently squeeze the pumpkins to be sure they’re still rigid.

Look for wrinkling in tubers.

Lift bags and boxes to be sure no liquids are oozing out.

If your vegetables start to spoil, it’s not compost time yet. Squash just beginning to soften can be roasted then stored as pureed flesh in the freezer. Peel onions’ outer layers and you may find the inside is still good. Sprouted potatoes can



Gourds, potatoes, onions and radishes should not be stored in plastic. They will last longer in cardboard or baskets and should be stored separately. Hanging onions and letting them dry after harvest helps them develop a thicker skin and cure any scratches or cuts.



Check refrigerated vegetables regularly.

If their odor increases, they’re starting to go bad. Discard or compost vegetables that have blackened, shriveled, become slimy, or seep moisture.

## Canning, Freezing & Dehydrating

**Altering the vegetables through canning, freezing and dehydrating can extend life exponentially.**

### WATER BATH CANNING

All vegetables are too low acid to can within water. While tomatoes can stay safe with a little added vinegar or lemon juice, root vegetables need strong vinegar to keep them safe. Have you tried pickled beets? They're delicious. Always use a 5 percent vinegar to can vegetables. Use an approved recipe and never alter measurements.

### PRESSURE CANNING

The list grows longer if you add pressure. Potatoes and turnips are safe, even canned in water. But do not try pumpkin puree, even if acid is added, because the mixture is too thick for heat to fully penetrate. Freeze any thick purées.

### FREEZING

Though food stored below 0°F stays safe indefinitely, quality declines after 3 to 6 months. Some food freezes well, such as roasted pumpkin puree measured out for perfect pies, while others such as mashed potatoes become bitter and inedible. Most vegetables require blanching, which is quick cooking and cooling to stop the enzymatic action, which can make vegetables mushy and unpalatable. Blanching is unnecessary for tomatoes and peppers; the freezer is a great place to stockpile these until you're ready to make salsa or marinara.

### DEHYDRATING

The oldest and safest food preservation method, dehydrating used to be done on flat rocks. Now we have equipment that does the job better. With the elimination of moisture, bacteria do not grow. Some foods, such as potatoes, should be cooked beforehand. Always store dehydrated food in airtight containers, vacuum-sealed if possible, so moisture does not enter and spoil the food.

still be eaten if sprouts and any green parts are removed. And if your sweet potatoes are sprouting, lucky you! Though all parts of the sweet potato are edible and nutritious, now is your chance to grow out some slips for spring planting. If they are stored well, sweet potatoes will bud about the time gardeners grow slips anyway.

If you choose to eat food that isn't storing well, do not eat it raw. Always cook to a temperature over 160°F to kill any bacteria, which may be present within the vegetables.

Do not eat shriveled vegetables, whether they are squash, potatoes or alliums. Never eat anything that seeps liquid or has an unpleasant odor. Throw away vegetables with blemishes or decay. Though you may be able to salvage squash seeds, the rest is compost-worthy. Don't even try to plant potatoes in the spring if they have decayed.

### STORAGE ALTERNATIVES

So what if you don't have a root cellar or even a basement? Don't worry. Most houses have somewhere that will work for storing winter vegetables.

Consider the humidity, temperature and ventilation requirements of each food. If your garage stays cold in the winter but doesn't freeze, keep potatoes in a closed cardboard box on the concrete floor. Tiled entryways and closets can be 10°F to 20°F cooler than the rest of the house, making them perfect for pumpkins and winter squash. Sweet potatoes may be happiest in the laundry room, where it's warm and humid. And garlic looks idyllic tied in bundles to a kitchen wall, though it will last months longer in the garage.

Have you seen those Facebook shares that show a five-gallon bucket of carrots buried in the garden with a straw bale on top? Works great. In fact, if your area isn't prone to negative temperatures, you can probably

leave the root vegetables right in the ground. Many gardeners use this method if they've grown too many potatoes or carrots for in-house storage to support.

To store in-ground, first make sure it's a crop that can handle the cold. Sweet potatoes need to come inside. Second, consider your temperatures and moisture levels. If you live in warm locations where winter brings rain and the ground doesn't drop below 50°F, root vegetables will just decay. And if you live in subzero temperatures, the vegetables will freeze along with the dirt. They'll thaw mushy, bitter, and absolutely inedible. Gardeners with mild winters can toss thick mulch atop their potatoes and carrots then dig up what they need, when they need it. Those with harsh winters can dig a hole, insert a five-gallon bucket so the lip is at ground level, then fill with carrots and throw an intact bale of straw on top.

Another option for root vegetables is a bag of moist sawdust. Don't use this for potatoes, as the moisture can quickly damage the tubers. It's best for carrots, beets, turnips, and horseradish. Be sure the sawdust is fresh and clean. Toss root vegetables into the container along with the sawdust and sprinkle with water until just slightly damp. Keep the container cold to deter decay. Check the vegetables often.

Whether you use a refrigerator or the root cellar method, no vegetable will keep indefinitely. Squash that lasts six months in one home may be good for only four months in another. But knowing how to store your winter harvest allows you to enjoy the bounty through the frozen months and well into spring. 🍅

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*Marissa Ames writes from Reno, Nevada, where she maintains Ames Family Farm on 1/8 of an urban acre.*



## What You Can, and Can't, Can

BY GAIL DAMEROW

**J**UST ABOUT ANYTHING YOU WOULD GROW in your garden may be preserved by canning. Only a few foods cannot be safely canned at all, some may be canned in one form but not another, and still others don't hold up well under the prolonged heat of processing. The biggest issue when it comes to home canning is to know which foods may be safely canned in boiling water or steam, and which items must be pressure canned.

### THE ACID TEST

All foods may be categorized as being either low acid or high acid, as measured by pH. In case you missed, or forgot, this part of chemistry, here's a quick review: The acidity of any substance is measured on a pH scale, where low numbers are high in acid and high numbers indicate low acidity. The letters pH stand for power of hydrogen, so-called because the pH scale is logarithmic (in powers of 10) and measures the concentration of hydrogen ions in a water-based solution.

A pH scale typically runs from 0 to 14, with each number 10 times less acidic than the previous number. Pure water is neutral and has a pH of 7. Working toward lower numbers, a pH of 6 is 10 times more

acidic than pure water. Working toward higher numbers, a pH of 8 is 10 times less acidic than pure water. You can see, then, that a substance with a pH of 1 is strongly acidic, while a substance with a pH of 14 is weakly acidic.

In terms of canning, the line is drawn not at the neutral pH of 7, but at the acidic pH of 4.6. Any food that is below 4.6 is considered high acid, while any food that is above 4.6 is considered low acid. This distinction is important because high acid foods may be safely canned in boiling water or steam, while the only safe way to can low acid foods is under pressure. (These three canning methods—boiling water, steam, and pressure—will be discussed in detail in the next three installments of this series.)

As a general rule, most fruits are high acid foods, while most vegetables, as well as all meats, including poultry and seafood, are low acid foods. Any mixture that combines high acid and low acid foods is considered to be low acid unless it is acidified through the addition of a sufficient amount

Pumpkin chunks are safe to can, but densely packed mashed pumpkin is not.

OPPOSITE: High acid foods (those having a pH less than 4.6) may be processed in a water bath canner, while low acid foods (having a pH greater than 4.6) must be processed in a pressure canner.

ARTWORK BY BETHANY CASKEY

of vinegar, lemon juice, or citric acid. Low acid foods also may be acidified through pickling or fermenting, as in the case of pickled beets or sauerkraut.

The low pH of high acid foods is sufficient to prevent the growth of *Clostridium botulinum*, the bacteria responsible for botulism poisoning. *C. botulinum* spores grow in low acid foods in the absence of oxygen, and are not killed at 212°F, the normal temperature of boiling water or steam. They are, however, killed at a prolonged temperature of 240°F, which may be achieved only in a pressure canner.

Although low acid foods may not be safely canned in boiling water or steam, all foods may be safely canned under pressure. The reason high acid foods are not typically canned under pressure is that the total processing time is longer, which may cause deterioration in fruit texture. Many home canners choose to process only high acid foods, because water bath canning and steam canning are easier and faster than using a pressure canner.

#### DON'T CAN

The list of things you shouldn't can is pretty short and amounts to common sense. For instance, you don't want to can overripe fruits. Acidity decreases as fruits ripen, and overripe fruit may not be acidic enough for safe water bath or steam canning. Further, overripe fruits tend to become bruised, moldy or damaged and therefore may contain microorganisms that make them unsafe for canning.

A notice in a local paper once told of two elderly sisters who died from botulism poisoning after eating their own home canned peaches. For many years I wondered how peaches, a

## Examples of High Acid and Low Acid Foods

HIGH ACID (PH < 4.6)	LOW ACID (PH > 4.6)
Apples	Beans
Apricots	Beets
Berries	Carrots
Cherries	Corn
Cranberries	Greens
Fruit Juices	Meat & Poultry
Jams & Jellies	Mushrooms
Oranges	Okra
Peaches	Onions
Pears	Peas
Pickles	Peppers
Pineapple	Potatoes
Plums	Pumpkin
Rhubarb	Soups & Stews
Sauerkraut	Spinach

## Canning Code



**ACIDIFIER.** An acidic ingredient such as citric acid, lemon juice, or vinegar added to decrease a food's pH to below 4.6, making it safe for water bath canning.

#### BOILING WATER CANNING.

Processing jars of food surrounded by boiling water; also called water bath canning.

**DRY PACK.** Food processed in jars without added liquid.

**HIGH ACID FOOD.** Any food having a pH less than 4.6.

**LOW ACID FOOD.** Any food having a pH of 4.6 or more.

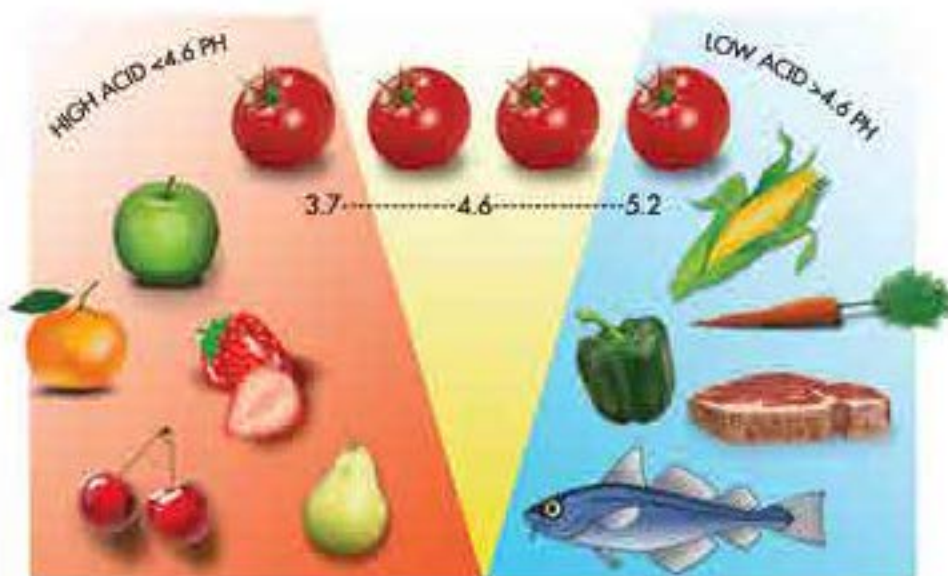
**PH.** A measure of acidity in which low numbers indicate higher acidity and high numbers indicate lower acidity.

**PRESSURE CANNING.** Processing jars of food surrounded by pressurized steam.

**STEAM CANNING.** Processing jars of food surrounded by steam at ambient pressure.

#### WATER BATH CANNING.

Processing jars of food surrounded by boiling water; also called boiling water canning.



	3.70	CELEBRITY hybrid
	4.07	PURPLE CALABASH heirloom
	4.16	BIANCO GREAT WHITE heirloom
	4.37	YELLOW BRANDYWINE heirloom
	4.40	RED CHERRY heirloom
	4.59	BLACK heirloom
	3.20	SUPER MARZANO hybrid

a low of 3.70 for Celebrity to a high of 5.20 for Super Marzano. Among all the hybrid varieties tested, 66 percent had a pH above 4.6, compared to the heirlooms with only 8 percent having a pH above 4.6. Factoring in heirlooms with borderline values, like 4.56, ups the percentage to 15 percent. According to

these statistics, hybrid

varieties tend to be less acidic than heirlooms.

A few of the same varieties were tested by more than one source, and it's interesting to compare the results. The hybrid Celebrity had a pH of 3.70 in one study at the University of Utah, and 3.92 in a follow-up study the next year, while in a study at North Dakota State University the same variety had a pH of 4.93. The heirloom Opalka had a value of 4.51 in a study at the University of Illinois, but 5.08 at North Dakota State. The heirloom Super Italian Paste had a pH of 4.33 at the University of Illinois, but 5.06 at North Dakota State. Why the discrepancy?

Many conditions in the garden affect a tomato's acidity. The acidity varies as a tomato matures, being highest in unripe tomatoes and decreasing as the tomato ripens. Acidity may also be influenced by

growing conditions such as extreme heat or excessive moisture, and by bruising, cracking, or other damage to the fruit including from frost, insects, or blossom end rot. Tomatoes that grow in shade or are ripened off the vine are less acidic than the same tomatoes when vine ripened in full sun. Tomatoes picked from dead vines are lower in acid than tomatoes from healthy vines. Combining different tomato varieties having different pH values affects the total pH of tomatoes in the canning jar.

Since you can't determine a tomato's acidity by looking at it or tasting it, the USDA recommends adding ¼ cup vinegar, 2 tablespoons lemon juice, or ½ teaspoon citric acid to each quart jar before processing. Of these options, citric acid (usually available where canning jars are sold) is least likely to adversely affect flavor, although in all cases the acidified tomatoes, and any dish made with them, will be quite puckery. The recommended remedy is to add sugar to each jar or to the recipe in which acidified canned tomatoes are used. Since no method has been tested and approved for pressure canning tomatoes without acidification, the USDA recommends acidifying even tomatoes processed in a pressure canner.

Any recipe that combines tomatoes with other foods—for example, salsa or spaghetti sauce with meat—increases the total pH. Such recipes must always be processed in a pressure canner.

— Gail Damerow

high acid fruit, could develop botulism. I now realize those peaches must have been well overripe, and possibly bruised or otherwise damaged, to the point that their acidity fell below the level required for safe water bath canning.

Another thing not to can is any densely packed food. Even in a pressure canner, heat may not fully penetrate throughout the contents of the jar, making the food unsafe for pantry storage. Examples of densely packed foods include mashed items such as pumpkin, winter squash, potatoes, or parsnips; pumpkin butter; refried beans; and pâté. Among fruit purées, the following are not recommended for canning because safe processing procedures have not been developed: Asian pear, banana, cantaloupe and other melons, coconut, fig, ripe mango, papaya, tomato. While many of these foods may not be safely canned in mashed or puréed form, most of them are perfectly safe to can as chunks covered by liquid.

Some vegetables don't maintain quality when pressure canned, so are best preserved by pickling. These include artichokes, broccoli, Brussels sprouts, cabbage, cauliflower, cucumbers, eggplant, summer squash, and olives.

Dry pack canning shelled nuts is no longer recommended. Condensation that may develop inside the jars could prove potentially hazardous.

Years ago, an Extension home economist developed specific recipes for cake in a jar, and the idea took off. Today the internet is teeming with

## A Special Case for Tomatoes

**Both heirloom and hybrid tomato varieties have a wide range of pH values, and within each variety acidity varies with growing conditions and stage of maturity.**

Tomatoes, tomato juice and other tomato products are the most popular foods for home canning. And they are borderline when it comes to pH. Traditionally, tomatoes have been classified as a high acid food, making them safe for processing in a water bath or steam canner. When grown under normal conditions and harvested at optimal ripeness, most tomatoes have a pH below 4.6.

However, acidity can vary quite a bit from one variety to another. In a list I compiled of pH values derived from four reliable sources, among 118 varieties the pH ranged from

directions for baking cake or pie in canning jars, then sealing them as soon as they come out of the oven. USDA canning experts frown on this practice, because you can't be sure the cakes or pies are entirely free of bacteria when the jars are sealed.

Oils and fats must be handled carefully. Poultry and other meat should have as much fat removed as possible before being canned. Melted fat tends to float in the jars and may interfere with sealing. Oils that are not heat-tolerant become unhealthy when heated, and all oils are low in acid, therefore canning flavored oils is not recommended. Approved recipes for such things as marinated peppers or mushrooms contain oil, but are also acidified with vinegar and lemon juice, making them safe for water bath canning.

High on the don't-do list are using canning instructions from outdated sources and making up your own recipes for canning. Do not can any food item for which you cannot find a recently tested recipe published by a reliable source. Such sources include your local county Extension office, the National Center for Home Food Preservation ([nchfp.uga.edu](http://nchfp.uga.edu)), the 2015 edition of USDA Complete Guide to Home Canning ([nchfp.uga.edu/publications/publications\\_usda.html](http://nchfp.uga.edu/publications/publications_usda.html)), and the 2015 edition of Ball Blue Book Guide to Preserving (available at [www.freshpreservingstore.com](http://www.freshpreservingstore.com)). These sources publish scientifically tested directions for canning specific foods using precise processing methods. For safety's sake, follow instructions exactly as they are published. ©

*Gail Damerow started this beginner's guide to canning in the March/April 2016 issue. This installment is fourth in the series.*



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## On to Cuba

Ernest Hemingway had a famous love affair with Havana

BY HABEEB  
SALLOUM  
A TASTE OF  
HOMESTEADING  
AROUND  
THE WORLD

**I**N THE LATE 1970S, a colleague of mine asked when I told him I was going on a trip to Cuba, “What do you want to do that for? People there are poorer than you were on the farm in southern Saskatchewan. You want to go for a holiday? Go to a rich resort. Go where the people are happy and they have money to spend!”

I was thinking of his words when I took my first vacation to Cuba in the 1970s. Touring the country, I looked around. The countryside was luxurious: fertile and green, much different than the dry lands I was used to during the dust storms of the south Saskatchewan Depression years. How could he compare this rich-looking country to the blowing sands of the prairie landscape?

The people, although not having much more than we had on our homestead farm, still seemed to be

happy, a sort of *joie de vivre*, and everywhere dancing to music. It was the Cuba that Ernest Hemingway loved and made his home in the mid-20th century. Some three decades later, on a trip I made to Havana, Cuba’s capital, I went with the intention of experiencing what Hemingway loved about the city and discovering some of his footprints.

Some years ago, on a trip to Havana, Ernest Hemingway’s granddaughter Mariel is reported to have said: “Cuba has three icons—Che, Fidel and my grandfather.” Without question her words ring true. A good part of Hemingway’s history saturates Havana. In this city, he is everywhere.

Hemingway, who made Havana his main home from the early 1930s, frequented numerous bars and restaurants that have today become almost iconic places for countless tourists as well as for Cubans.

Our first stop on the Hemingway trail was in Old Havana at the Bodeguita del Medio Bar-Restaurant, located midway on a small street near the Plaza de Catedral. I could barely even peek through the window as I made my way through scores of tourists trying to enter one of Hemingway’s watering spots. It was here that Hemingway made the drink mojito famous. Thousands of tourists visit the Bodeguita every year just to remember the novelist and try to decipher the innumerable writings of famous people who have inscribed their names from top to bottom on the bar walls. At the back, there is an overpriced restaurant where one can savor traditional Cuban cuisine. Yet despite the price, his name imbues so much magic that the restaurant is always full.

From the Bodeguita, we walked for about 15 minutes to Hemingway’s favorite eating-place, El Floridita Bar-Restaurant, located on the edge of Central Park. Here he spent much time

sipping on daiquiris—some assert that this drink was his invention. Today, steady streams of tourists drift in and out to soak up the bar’s atmosphere and down the not-so-cheap daiquiris. For those who follow Hemingway’s trail in Havana, after the entire tour, one needs to return to this restaurant that diffuses the novelist’s aura to enjoy a gourmet meal while listening to delightful live Cuban music.

A 10-minute walk from El Floridita, we came to the edge of Plaza de Armas, where the fully renovated Ambos Mundo Hotel stands. It is a charming lodging place, its décor infused with Spanish Colonial details. This is where Hemingway stayed before he bought Finca la Vigia, his permanent home in Havana. Popular folklore has it that anyone staying at this hotel surely dreams of the characters in Hemingway’s novels.

In his favorite, very small, room number 511, Hemingway was inspired to write his famous novel, *For Whom the Bell Tolls*, and it was with the royalties from this book that he was able to purchase Finca la Vigia. The room has been turned into a museum, where about a dozen personal items of Hemingway are exhibited. For a small fee, visitors can view Room 511, preserved as it was when he stayed there in the 1930s, even the bed he slept in still looks like it is freshly-made up. When I visited the museum there was a line of visitors, mostly Canadians, waiting to enter.

Leaving Old Havana behind, we drove to Finca la Vigia, meaning “Lookout House,” located on the outskirts of the city. This was Hemingway’s country home from

## Some Havana Facts

- Founded in 1515, Old Havana (La Habana Vieja) never fails to impress its visitors with its rich history and incomparable New World grandeur. One of the earliest urban centers established by Europeans in the Americas, this part of Havana is a lovingly restored monument to the city’s glorious past.

- Known to the Spanish Conquistadors who built the original city as “Queen of the New World,” Old Havana is a remnant from Cuba’s colonial era, a jewel of Spanish colonial architecture. UNESCO has declared this 2.5-square-mile area of Greater Havana consisting of narrow streets, secluded squares, impressive fortresses, centuries-old churches and ancient palaces as a World Heritage Site. On a continual basis, its 907 colonial palaces and more than 100 other monuments are being gradually restored.

- Travelers can easily see that this venerable part of the city is being returned to its once renowned architectural splendor.

- Today, Havana has greatly expanded beyond its historic sector. A city of almost 2.5 million, it is the largest urban center in the Caribbean and home to one quarter of Cuba’s more than 11 million inhabitants.



1939 to 1950. Here he entertained distinguished guests. Eventually, his wife Mary donated the house to the country that Hemingway loved where it has become a tourist shrine, now The Ernest Hemingway Museum.

The Finca is famous for its high tower-like structure that has a fine view of Havana. His wife Mary had ordered it built as a writing den for her husband that in the end, he never used. In addition, mementos from his life such as his swimming pool, the graves of his four beloved cats and his renovated fishing boat, El Pilar, are featured on the grounds. As we walked past workers renovating the Finca, one of our group remarked, “They have enhanced Hemingway’s Cuban aura. Truly they have adopted him as an idol.”

Still wrapped up in the mystery of one of the world’s greatest literary figures, we ended our tour at Cojimar, a fishing port on the edge of Havana where Hemingway often went on fishing trips on his El Pilar, and where he was inspired to write his famed novel, *The Old Man and The Sea*. It won him the Nobel Prize for literature and Hollywood eventually made into a movie, starring Spencer Tracy.

Besides the people and the country, Hemingway must have liked the food of Cuba and he had a point. Today, there are two distinctive styles of Cuban cooking: the traditional, which is primarily a peasant cuisine; and nuevo Cubano, (new Cuban)—much more spiced with a notable emphasis on presentation. Traditional dishes feature excessive fat, salt and sugar—all bad for

### THE WORLD TOUR

Join **HABEEB SALLOUM** during the next several issues as he takes us around the world to six continents, describes their homesteading culture in every city he visits, and presents us recipes from the region. In the next issues, he will take us to Brazil, and then on to Tunisia.



the health. However, in the nuevo Cubano, the Cubans have added healthier alternatives, albeit preserving the taste and/or texture of the traditional.

Root vegetables such as boniato, malanga and yucca, usually flavored with a marinade called “mojo”, are common staples in the Cuban kitchen. Citrus juices are used to marinate meats and poultry, which are often roasted until tender, literally falling off the bone. For seasoning, in the main, the Cuban kitchen relies on a few basic spices, such as garlic, cumin, oregano and bay leaves. Cumin and oregano are the most used spices and the use of pepper and other hot spices, unlike in most other Caribbean countries, is very limited. As well, the most common condiments used are mojo criollo, Cuba’s national table sauce, and sofrito, employed in a whole series of dishes whose principle ingredients are beans and other pulses and all types of meats.

Simple in concept but complex in flavor, the kitchen of this Caribbean island nation has a sweet tinge with frying as the main method of cooking. Because Cubans do not like dry foods, they have a good many sauces and stews to soak up their numerous rice-based dishes.

From among the most important dishes that are popular with the Cubans are: arroz con pollo (rice with chicken), Moros y Cristianos (Moors and Christians), a rice and black bean dish introduced by the Spaniards; congri, red kidney beans with rice of Haitian origin; empanadas, chicken or meat turnovers; escabeche pecado, pickled fish; pastelitos, small flaky turnovers; maduros, sweet fried plantains; and polvorones, cookies introduced by the Spaniards.

Of all the tropical foods in Cuba, Hemingway loved most its seafood dishes like these few Cuban dishes.



### Lobster Fritters

**SERVES 8**

*Light and slightly spicy with a subtle crunch of peppers and onion, lobster fritters are simple to prepare. It is one of the seafood recipes that Ernest Hemingway probably enjoyed.*

Vegetable oil for deep-frying  
 3/4 cup flour  
 2 eggs, beaten  
 1/2 cup milk  
 1/2 teaspoon salt  
 1/2 teaspoon black pepper  
 Pinch of cayenne  
 1 cup chopped lobster meat  
 1 small onion, very finely chopped  
 3/4 cup finely chopped bell pepper  
 1/2 cup finely chopped green onion  
 4 tablespoons finely chopped coriander leaves (cilantro)  
 4 garlic cloves, crushed

In a large saucepan, heat oil to medium-high.

In a large bowl, mix together the flour, eggs, and milk until smooth. Stir in the remaining ingredients until well blended. Drop rounded tablespoons of mixture into hot oil and fry until golden brown. Drain on paper towel. Serve immediately.

### Stuffed Avocados

**SERVES 4 TO 6**

*Canned tuna is a good replacement for the crabmeat.*

1 teaspoon salt  
 1/2 teaspoon paprika  
 1/4 teaspoon black pepper  
 3 tablespoons olive oil  
 3 tablespoons lemon juice  
 4 medium avocados  
 1 1/2 cups crabmeat, cooked

and cut into small cubes  
 2 tablespoons sour cream  
 8 green olives  
 1 small canned pimiento, sliced in small strips  
 Lettuce leaves



In a bowl combine 3/4 teaspoon of the salt, paprika, pepper, 1 tablespoon of the oil and 1 tablespoon of the lemon juice to make a marinade then set aside.

Slice avocados in half lengthwise and peel then brush with the marinade. Refrigerate for 2 hours, stirring in marinade a few times.

Combine crabmeat, sour cream, remaining salt, olive oil and lemon juice then fill avocado halves. Decorate with olives and pimiento then serve cold over a bed of lettuce leaves.

### Coconut Chicken

**SERVES 4**

4 tablespoons vegetable oil  
 2 pounds chicken breast  
 1 medium onion, finely chopped  
 6 cloves garlic, crushed  
 1 medium green bell pepper, seeded and finely chopped  
 1 medium red bell pepper, seeded and finely chopped  
 1 1/2 cups coconut milk  
 1 teaspoon salt  
 1 teaspoon oregano  
 1/2 teaspoon black pepper  
 1/8 teaspoon cayenne

Heat oil in a large frying pan then fry chicken over medium heat for 8 minutes (4 minutes on each side) then stir in onion, garlic, green and

red pepper and sauté for a further 5 minutes. Stir in remaining ingredients and cook for a further 3 minutes then transfer frying pan contents into a casserole and cover.

Bake in a 350° F preheated oven for 40 minutes or until chicken is tender. Serve hot from the casserole with cooked rice.



### Escabeche Pecado, or Pickled Fish

**SERVES 4**

*Once prepared by the Moors in the Iberian Peninsula, escabeche, from the Arabic sikkaj (fish, meat and vegetables marinated in vinegar), is a common method of preparing food in all Hispanic countries.*

- 1 1/2 pounds any firm fleshed fish filet cut into 1-inch pieces
- 1 1/2 teaspoons salt
- 1 tablespoon lime juice
- Flour
- 1/2 cup olive oil
- 1/2 cup vinegar
- 2 medium onions, thinly sliced
- 1 medium green pepper, seeded and thinly sliced
- 2 teaspoons dry oregano
- 1/2 teaspoon black pepper
- 1/2 cup cooking oil
- 4 cloves garlic
- 1/2 cup any type stuffed green olives, chopped

Sprinkle fish with the lime juice and remaining and 1 teaspoon of the salt then dust with flour and set aside.

Place olive oil, vinegar, onion, green pepper, oregano, black pepper and remaining salt in a saucepan then cover and cook over low heat

for 1 hour to make a sauce, stirring occasionally. Set aside to cool.

Heat cooking oil then fry garlic cloves until they turn light brown then remove and discard. Fry fish in same oil over medium-low heat for about 8 to 10 minutes or until they turn light brown, turning them over once.

Cover the bottom of a small casserole with fish pieces then spread a little of the sauce and some of the green olives over top. Repeat the same procedure until fish slices are finished. Spread the remainder of the sauce and olives over top. Cover and refrigerate for 1 to 2 days before serving cold.

### Paella Cuban-style

**SERVES 4-6**

*This my version of a way to prepare delicious Cuban-style paella. The time element is short and the end result is authentic.*

- 4 tablespoons butter
- 1 large onion, finely chopped
- 4 garlic cloves, crushed
- 1 large red bell pepper, seeded and finely chopped
- 1 pound uncooked shrimp, peeled
- 1 pound hard flesh fish filet cut into 1-inch pieces
- 1 1/2 teaspoons salt
- 3/4 teaspoon black pepper
- 2 cups crushed tomatoes
- 6 cups cooked white rice
- 2 cups fresh or frozen peas

Preheat oven to 375°F.

In a frying pan, melt the butter then add the onion, garlic and green pepper and sauté over medium heat for 5 minutes. Remove from heat.

Stir in the remaining ingredients, and



then spoon into greased casserole dish and bake uncovered for 30 minutes.

Serve immediately.



### Vieiras al Ajillo – Scallops in Garlic Sauce

**SERVES 4**

*A rich tasting dish with a strong flavor of the sea infused with garlic, coriander (cilantro) and a touch of lime—a dish Ernest Hemingway would have cherished.*

- 2 tablespoons olive oil
- 2 tablespoons butter
- 8 cloves garlic, crushed
- 1/4 cup dry white wine
- 2 tablespoons lime juice
- 1/4 teaspoon dried thyme
- 1/4 teaspoon cumin
- 1/2 teaspoon salt
- Pinch of cayenne
- 1 pound scallops (preferably large)
- 2 tablespoons fresh coriander leaves (cilantro)
- 4 cups cooked rice

In a frying pan, heat oil and butter over medium heat until butter melts then add garlic and stir-fry for 2 minutes. Add the remaining ingredients except the scallops, coriander (cilantro) and rice and continue simmering for 2 more minutes. Add the scallops and cook for 6 minutes turning over once. Turn off the heat, and stir in the coriander (cilantro). With a slotted spoon, remove the scallops reserving the sauce in the frying pan. Place scallops over cooked rice. Spoon the sauce over the scallops.

Serve immediately. ©

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## How to Build a Bar

It's time to belly up at home

STORY AND PHOTOS  
BY ROMIE HOLL  
WISCONSIN

**I** WANT TO THANK MY CO-WORKER Steve Zwolinski for letting me tell his story of how he built this bar.

There was always an unused corner in this area of the house that seemed to become the “drop off” area for the kid’s items when they were living here. Now, they have moved out and taken all their stuff away, (They came back once, but maybe this one will take. Ha!). I decided I would build a bar, something I thought that should have been there when I built my house, especially when I have friends and family over.

After measuring the area, I decided to go with a “U-Shape” bar, eight feet on two sides and five feet the last side. This will give three feet to walk through, plenty of room to bring in a keg for the beer tap that will be located on the bar.



### **BUILDING BASE FRAMES**

I decided to build out from the wall first, and instead of a straight 8-foot, I went with a 6-foot section; this will allow me to put a 45-degree corner on the bar, not only giving the bar a little more character, but allow more room for people to walk around the place.

I am using standard 2-by-4s to frame it in. I use a nail to hold it in place (along with a clamp), and then I come back and screw the wood together. You don't have to do it this way, but I wanted to make sure it is as strong as I can get it. (I tend to over build things, but this also means it doesn't break on me).

Since I decided to put in a 45-degree corner, which changed the 5-foot section of the bar to 3-foot, this setup is enough room to have one person on the 3-foot section, one person on the 45-degree corner, and two people on the 6-foot section of the bar. Since I have four tall bar stools, this will be perfect.

Getting the 45-degree corner was a little harder than it should have been. (I came up a little short a few times, but I finally got it after making sure the miter saw was clicked on in the 22.5-degree mark, half of the 45-degree corner.)



### **CONNECTING THE STRUCTURES**

After the base frames were done, I put the 2-by-4s on the top of bar. This not only gives support for the top of the bar, but it ties in the three frames into one solid structure. It also means this bar will never leave the room, since my doors are not wide enough to accommodate it being moved (the bar is 40 inches tall).

When I was walking through a Restore (Habitat for Humanity) I came across a really nice Kohler sink with matching faucets, and since it was only \$25, I bought it, and will place it where I think it should go after the bar is done. Before this, I was unsure if I wanted this to be a wet bar, but I couldn't pass it up.

Because I like seeing the grain of the wood, I decided to use oak.



### **ADDING THE TRIM**

I knew I wanted to stain the bar (instead of just painting it) so I chose to put on Birch Plywood. It was a little more expensive than other types, but the wood is clear without any knots, and it takes stain very well. Cutting the plywood was easy straight cuts, and the corners will be hidden behind trim, so I didn't have to worry about trying to make an angle cut.

I wanted the main structural part of the bar to be dark to help contrast the wood style flooring (Pergo), and the trim to be halfway between the dark color of the bar and the floor color. Because I like seeing the grain of the wood, I decided to use oak. The corners will be 4-by-4s that were run through a table saw to make the 45-degree corners. The rest of the trim is standard 1-inch by 4-inch boards on top, and 1-inch by 6-inch boards on the bottom. It is easier to the stain the wood before you cut the pieces to install it. True, you will have to touch up the cut wood, but the majority of the wood will be done and you won't have to worry as much about drips on the rest of the bar.



Once I had the dark color on the bar and the stain on the trim was dry, I installed the trim with an 18-gauge finish nail gun. I like using this size of nail gun when installing oak because you do not have to predrill it. You just place the trim (using a level and/or a tape measure to get it in the right spot), and pull the trigger. When the trim is in place, you can return and stain the cut, bare wood. By doing it this way, you can make sure to get all the bare wood the same color, and it will “flow” better. The top of the trim was placed 1.5 inches above the 2-by-4s; this is so the top of the trim will be level with the finished bar.



### CREATING THE BAR TOP

I used two sheets of standard 3/4-inch plywood for the top. These were glued (PL400), and then screwed in place between the trim boards. This leaves a 3/4-inch gap between the plywood and the top of the trim. I wanted something around the bar that would look like “coasters,” but would also be very durable. After visiting various tile shops, I found a nice 4-inch by 4-inch tile at a local discount store. The tile is only

3/8-inch thick, and because the tile will be level with the top of the trim, I needed something that is 3/8-inch thick, to make up space.



I bought 1/4-inch dura-rock board (needed two sheets), and after cutting 4-inch-wide strips, I glued and screwed it into the plywood. The mortar will take up the rest of the space that I need 3/8-inch tile and a 1/4-inch board leaves 1/8-inch mortar space). I used a 1/8-inch trowel when installing the tiles. Because I like the “seamless” look that comes without the grout lines, I didn’t want any space in between the tiles. I also think it makes it easier to clean up the bar without the grout lines between the tiles. I was able to just butt the tiles up next to each other until I got to the corners, these required me to use a wet tile saw and a few (okay quite a few) cuts to get it to fit properly, but I think the look is worth the extra time. It is also the reason you should buy at 10 percent more tile than you think you will need.

After the tiles were dry, I cut away any extra mortar or material sticking out of the tile. I needed the space to be as smooth as possible. Once I was satisfied, another trim board (3/4-inch by 3/4-inch) was cut, stained the same as the other trim boards and installed. This was done to help “frame” in the tile and the rest of the bar top.



The reason I installed the trim on the outside of the bar the way I did was so I could use wood flooring for the top of the bar. I decided to use raw wood flooring for the rest of the bar top (oak to match the trim). Yes, you could buy prefinished wood flooring and install it. But if you look at the prefinished flooring, you will find there are little bevels on the edges, and when installed on the floor and it is not as close, it is not a problem, but on a bar top you will notice it much easier. Plus, I wanted the top to be as smooth and seamless as I could get it.

When installing flooring, you want to overlap the joints by at least 6 inches, and not have the joints at the same spot unless there are at least two boards between. This will create the strongest structure possible, and it also helps it not to pop loose. I have been using a compound miter saw on all my cuts, when I was cutting the 2-by-4s for the structure, you want to have your blade to have less teeth (usually around 40 teeth for the 10-inch saw blade). This makes fast work for cutting that type of wood.

But if you use this blade for cutting flooring (or trim), this blade will “tear” the wood and you won’t have the nice clean cut you want. I usually put in an 80-tooth blade for trim and flooring, and it provides the type of cut I want without sacrificing speed (the higher the tooth count, the slower you have to go so you don’t burn the wood).

As I cut the wood, I install it in the bar using the same 18-gauge finish nail gun when you use flooring as a floor. Most people rent a floor nail gun, and nail every 12 inches or so. I don’t own one, but using my 18-finish nail gun every 3 inches works great. Remember to use a “scrap” board to help tap in the wood to get as tight a joint as possible without damaging the wood. It took a few tries to get the corners right, but I liked how it looks.

Once the top is fully installed, it is time to sand. Starting with a 36-grit you go cross grain to help level out the individual boards. Then you switch paper and put in 500-grit and start cross grain again, but once you are happy that the top is flat and level, then you sand with the grain, and you will keep sanding with the grain for the rest of the grits (80, 100 and 120 grit). The reason you go with the grain is you will not see the sanding marks when you stain, and it will look like a natural part of the grain of the wood. If you keep sanding cross grain, you will see “lines” between

the boards when it is stained.

When I am happy with how it looks I sand one last time, but this time I use a dual-action sander. It is called this because it moves in two ways, back and forth and in a circle. This type of sander will not leave any sanding marks at the higher grits (I finished the top with 150 grit).

### STAINING THE BAR TOP

Before staining the top, you will have to remove all the dust that the sanding caused; if you don’t then you will see “grit” in the bar top and it will ruin the look. So after sweeping as much as I could to clean it, then I start with damp (not wet) paper towels, which will pick up any remaining dust. I use the towel like this: I make one swipe, then I fold the towel and make another swipe and keep going until I have to get another damp towel. It takes longer, but I am not spreading the dust. Once the top is dust free, I let it sit for at least 15 minutes so any water from the damp towels dries.



Using painter tape, I cover the walls and the tile. The top will get at least two coats of stain, and since I want a reddish dark brown color, the first coat is a mahogany stain. When you apply the stain you always go with the grain of the wood, for the same reason you sand with the grain. Also use long strokes with your brush, if you use short strokes you will see where you stop and start and the color won’t flow the way it should.



Once the first coat was dry (let it stand overnight), a dark walnut color was put on the same way as the first stain was applied.



After the stain was done, I applied three coats of semi-gloss polyurethane to the top, between coats I used Double O steel wool to smooth it out.

### TIME TO PARTY

The bar is done (for now), so it is time to decorate it for Cinco De Mayo party. I bought and added LED lights on the bottom of the top (they change color with the remote). In the future, I will install the Kohler sink and a wine glass cabinet will be built and installed. ©



# Solar Gadgets on the Homestead

You don't have to spend a lot of money to get portable, renewable power

Portable solar pads like this can power cameras, fences and tools away from any plug-in or outlet.



BY ALEXIS GRIFFEE

**O**FTEN TIMES, SOLAR POWER is viewed as a desired, yet unaffordable option to the farmer and homesteader. While a full solar system may not be in the budget for every farmer, there are still numerous ways that solar can be an asset to your farm without breaking a budget!

Due to the huge interest in renewable energy, many companies have branched out from traditional large systems to offer affordable smaller solar products. These products, while not all directly marketed to the farmer and homesteader, have a lot to offer to this way of life. These affordable and useful solar energy options are often overlooked.

## SOLAR FENCE CHARGERS

Probably one of the most versatile and practical solar items for the farm is the solar fence charger. Solar fence chargers are an amazing, and affordable, asset to any farm and can be used in a variety of ways! Regardless of the size of your farm or homestead, the uses for solar fence chargers are endless. Aside from the obvious benefit of being able to have standard electric fence in an area where there is no power, these chargers offer other options to farmers.

Solar chargers also have a variety of uses off of the homestead. Trail riders often will set up portable corrals for their horses for the evening or when not riding. Traditionally, this required the use of heavy and cumbersome metal panels. Aside from taking up valuable space while you travelled, they also were very hard to manage, especially if you were on your own. Due to this, many people have started carrying solar fence chargers and electric fencing as a part of their normal camping and travel gear. Not only will the electric fence help to keep animals in, but predators out.

Back on the homestead, solar fence chargers can also be of great benefit to those without livestock as well. Gardeners know all too well the pain of losing valuable crops to pests, whether they are rabbits or deer. For the gardener plagued with these issues, solar chargers can be used to power electric nets to keep rabbits, dogs, and even deer out when combined with electric net fencing. On a similar note, beekeepers also use the combination of a solar charger and electric net fencing to protect their hives. These fences have even been known to keep a hungry bear from raiding beehives! The options with a solar fence charger and electric net fencing are virtually endless to the crafty and innovative homesteader!

### SOLAR PHONE CHARGER

Another fantastic solar tool for the homesteader is the solar cell phone charger. Farmers often will spend all day working and generally, the charge on their cell phone is not at the top of their list of priorities! While a farmer or homesteader probably will not be using their cellular phone for games and social media, it is a vital tool for safety. Especially when working alone or with equipment, accidents can happen. Having a means to notify help can be a matter of life and death. Additionally, if you are in an area without good cellular coverage, the battery on your phone will be drained faster since it has to constantly search for a signal. Solar cellular phone chargers are great to keep in your vehicles, or on the tractor, ATV or even in your saddlebags. Costing around \$20 to \$40 each, solar cellular phone chargers are a great piece of equipment to own for added assurance.

### SOLAR BATTERY CHARGER

Power tools are required for maintenance on the homestead. For those with larger parcels of land, this can be problematic, as they are needed where there is no electricity available. Even a fully-charged, battery-powered tool will not be able to handle a full day's worth of use without recharging. Instead of having to run back to the home front and wait for your battery to recharge, a solar charging panel is a great option. With all of the recent advancements in solar technology, these panels are available in standard form, but also foldable for those that are short on space or may need to pack them to their locations.

The portable charging panels also have a variety of other uses. Far beyond just charging power tools, the options for these portable panels are virtually endless. They can be used to charge and

power GPS systems, cell phones, computers, and numerous other small electric devices. Similarly, some panels are actually designed to plug into your vehicle or tractor. These are proven to work to help vehicles with weak batteries or starting problems. Many farmers are now keeping these systems on hand for just these instances. Depending on the size and specifications of the panels, they range in price at about \$50 to \$150.

### SOLAR WEATHER RADIO

It is no secret that weather is vital to a farmer and homesteader. Knowing what the weather has in store for you each day is important, but weather has a habit of not sticking to the forecast and changing quickly.

Due to this, weather radios are an important tool for a farmer. Long days of work in the fields or pastures may take you away from typical weather alert sources like televisions, internet and a typical radio. Having a solar weather alert radio allows you to stay connected and informed no matter where your work takes you.

### SOLAR LIGHTING FOR BARN

Farmers are no strangers to slogging to the barn at all hours of the night. Whether it is to make sure that the crops get in on time, calm an unsettled animal or to check on livestock that is due, late night barn visits are common. Depending on the location, running power to your barn may not always be feasible. It

is in situations like this where you can really benefit from solar lighting. Aside from releasing you from dependency on the power grid, solar lighting can save you a lot compared to the cost of running power and then paying for your usage. With a wide range of solar lighting options, you will have plenty to choose from! Solar lighting is available in everything from pathway lights, overhead lighting and flood and security lights, all at a minimal cost!

On a similar note, late night journeys to the barn are easily lit up with the use of solar powered head lamps and flashlights. Starting at only \$14, these are both great items to keep on hand at all times. Even if you do not trek outside at night often, these can be invaluable in emergency situations. Whether you lose power and cannot find batteries, or keep them in your vehicle's emergency kit, these are yet another affordable and versatile solar option.

### SOLAR GATE OPENER

While it may not be as versatile as some of the other solar gadgets, the solar gate opener is a welcome addition to any farm! Kids and all those who ride in the passenger's seat will rejoice at no longer having to get out and manually open gates. Aside from saving you from the great debate of whose turn it is to open the gate, these can be wonderful niceties to have. Solar gates come with numerous options depending on your preferences and gate size. From remotes to open and close it to opening out, or up, there

Aside from releasing you from dependency on the power grid, solar lighting can save you a lot compared to the cost of running power...

are solar gate options to fit all farms and their needs. More than simply a nicety, solar gates actually have practical purposes for safety too. These can be wonderful tools for the instances where livestock may accidentally get out of their pasture and you cannot make it to the gate before them. Additionally, if you need to be opening gates in violent thunderstorms, it is always safer to not have to grab onto a metal gate yourself! Furthermore, for security, solar gates will only open with a code so people with ill intentions cannot simply unclip a gate and walk away with your possessions.

**SOLAR GENERATOR**

Possibly the most versatile solar gadget is a solar generator. The advancements in solar generators are astounding and they now range greatly in size and strength. Although costlier than the other



Solar lights, waterers and feeders are cost-effective ways to manage your garden or livestock.





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solar gadgets, solar generators range in price from \$200 to \$7,500, depending on the size and options that you need. Each generator has unique qualities that are very customizable to your situation. The higher priced generators will have more capabilities with what they can power.

Before choosing a solar generator, you need to decide what exactly you hope to accomplish with it. If you want to have power for a few select items in your barn, you will not need one as large, and as expensive, as one that will connect to your home and power large appliances. Defining exactly what your needs are will save you money and time when choosing the product that is right for your situation.

Many smaller solar generators are portable, but still capable enough to power larger devices. However, if your goal is not to power tools and equipment, but your own home items in an emergency, there are generators for that as well. These generators are quickly becoming a "must have" option for areas that have to deal with natural disasters on a frequent basis. In the south where hurricanes can knock out power for weeks at a time, and gas can be scarce, these are a simple choice and one that people are turning to successfully.

While you may not be ready to go completely off grid yet, there are still several affordable ways to decrease your dependency on the power grid. Many of the smaller solar options currently available now offer some outstanding benefits to the farmer and homesteader. No matter what, you cannot go wrong when you are utilizing a tool that not only makes your life easier, but it is easy on your pocket book and benefits the environment.

With the advances in solar engineering, the availability of products and lower prices, this peace of mind truly is affordable for those of all budgets. ☺



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Simple homesteading solutions that have been around for centuries ... and still work



## Measuring Your Pond Volume in Gallons

**P**ONDS. They seem so harmless. Until, one day, when you wake up and algae is blooming all over and you find a dead fish in strange weeds that shot to the moon overnight. We all learned from Florida recently that if things get out of balance in your water system, it quickly becomes toxic. And if you have to add chemicals to your water system to restore its ecosystem, you have to know your pond's volume in order to determine how much to use.

Here's an example of how to do it (originally published

in *COUNTRYSIDE & SMALL STOCK JOURNAL* in 1999):

**Step 1:** Find the pond's acre-feet. A pond's volume is its surface area multiplied by the average depth, so we have to find those two numbers. Say we have a 1-acre pond that is an average of 4-feet deep. Since  $1 \times 4 = 4$ , we know that our pond is 4 acre-feet.

**Step 2:** Convert acre-feet to cubic feet. This gets a little trickier. First, we convert acre-feet of water to cubic feet of water. One acre-foot is 43,560 cubic feet, so  $4 \times 43,560 = 174,240$  cubic feet.

**Step 3:** Convert cubic feet to gallons: Since 1 cubic foot equals 7.48 gallons, this means  $174,240 \times 7.48 = 1,303,515$ . So, our 1-acre pond that is 4 feet deep has 1,303,315 gallons of water.

**Final Steps:** Measure your dilution rate. If directions call for one ppm (part per million), then you can measure out 1.3 liquid gallons to be evenly applied to the pond. And one note, from experience: you have to follow those directions exactly. ©

*Got good ideas you know work around the home? Share your homesteading hacks with editor Ryan Slabaugh at [rslabaugh@countrysidemag.com](mailto:rslabaugh@countrysidemag.com)*

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pecans

# Think Like a Squirrel

A few ways to identify and store nuts for the winter

BY KENNY COOGAN  
FLORIDA

**S** CARLET LEAVES are among us as the nights become cooler. If you are starting to feel a little squirrely, you are not alone. It is the chilly fall that encourages those popular plume-tailed bandits to collect, hoard and cache nuts throughout the forest.

Centuries ago, our ancestors earnestly competed with the acrobatic omnivores for those rich sources of protein, dietary fiber, vitamins and antioxidants. Today, the excitement of identifying, collecting and preparing these tasty wild epicurean treats is still present.

Two folks wearing homemade wool hats dyed with black walnut hulls examine the dark trunk of a black walnut tree.

PHOTO BY DOUG ELLIOTT

## PECANS (*CARYA ILLINOINENSIS*)

Mark "Merriwether" Vorderbruggen, Ph.D. from the company Foraging Texas, has been a forager all of his life. Having learned the act of nutting, or foraging for nuts, from his parents was one of the ways they got food on the table.

Pecans are best harvested right when they've fallen from the tree, Merriwether advises. Pecans, which are a type of hickory nut, are easy to harvest, delicious and meaty. To collect, Merriwether recommends a "nut collector" of course.

"Most hardware stores around here sell nut collectors, which are giant wire springs curved into a half-circle and fastened to a stick," he described. "As you push the spring down onto the pecan the wire spreads then closes up again, trapping the pecans inside the spring. After getting 10 to 15 pecans, you dump them from the spring into a bucket."

While pecans are grown commercially, about half of the nation's crop is produced from native trees. Wild pecans are smaller than the dozens of commercial varieties that are grown from orchards spanning California to Georgia.

"Shelling pecans is tough but many of the larger farmers markets will have someone there with industrial cracking machines that will bust the shells for a small fee," Merriwether says. And for those do-it-yourselfers? "A shell cracking, lever-action tool is used," he says.



PECAN PHOTOS BY MERRIWETHER



PHOTO BY MERRIWETHER



PHOTO BY MERRIWETHER



PHOTO BY DOUG ELLIOTT

black walnut

### BLACK WALNUT (*JUGLANS NIGRA*)

A particular favorite for Merriwether is the Black walnut.

"When the nuts are still young and tender they can be pickled for a really neat snack," he says. "Once mature, they'll begin falling from the tree even though their outer husks are still green."

Removing green husks is hard and messy yet necessary to prevent the nut meat from picking up their iodine-like flavor, Merriwether says.

Naturalist, humorist and storyteller Doug Elliott of dougelliott.com is based out of North Carolina and teaches the skill of foraging throughout the U.S. He proudly has a large dark stain in his driveway from removing the shells of the black walnut with his car.

"Country tradition is to toss them in the driveway and drive over them for a week or so," Elliott explains. With a soft dirt or gravel

driveway the car tires remove the husk and the walnut's shell remains unbroken.

"You can use the husks for a rich brown dye on wool and other natural fabrics," Elliott says. "The nut shells can be made into buttons, knobs, and other useful items."

Elliott rakes the nuts, hoses them off and sun dries them for a few days. He then stores them outside in a well-ventilated, rodent-proof container, which can be stored for a few years. As the nut kernels begin to dry, the meat shrinks making them easy to shell.

"Once the outer husk is off, a hammer and a good TV show is the best combination for breaking open the hard, inner shell," Merriwether suggests. "It's mindless work once you get the rhythm down."

Elliott recommends a carpenter's hammer, as the hammer's leverage helps the process. "Many years ago we ordered the famous lever-

action Potter Walnut Cracker, made in Salpulpa, Oklahoma," Elliott shares. "Picking out the nut meats is still somewhat labor intensive, but using the cracker has increased our walnut consumption considerably."

"When the nuts are still young and tender they can be pickled for a really neat snack."

— DR. MARK "MERRIWETHER" VORDERBRUGGEN



PHOTOS BY MERRIWETHER



*hickory nuts*

*acorns*



**HICKORY NUTS  
(CARYA OVATA)**

When finding nuts, hickories are both a joy and a curse. With 20 species and subspecies spanning eastern and central United States, it is sometimes hard to identify the trees that produce the meaty sweet nuts and those that produce mostly shell, bitter nuts.

*Carya ovata*, or the shagbark hickory, is a large deciduous tree with a distinctly fringed trunk that can live hundreds of years and grow up to 100 feet tall. Hickory nuts are similar to a cross between pecan and walnuts. “They are easier than black walnuts to shell but still have a really nice flavor,” Merriwether says. “You don’t need to drive over hickories.”

A hammer, or a rock, is all you need to get at the nut meat inside. The outer husks of hickories have four “seams” running top to bottom, whereas black walnut husks have no seams.

**ACORN (QUERCUS SP.)**

To leave out acorns in a nutting article, one must be a nutcase, as they are the quintessential ubiquitous fall harvest. Acorns, a nut from an oak tree, can be harvested from any one of the 60 plus oak species in North America. Acorns from white oaks taste sweeter than those from black and red species. Acorns may be one of the oldest foods known to man with evidence of their ingestion dating back to Paleolithic cave abodes.

After shelling the acorns, sweet varieties can be eaten raw or roasted. Those that are slightly bitter to tannins can be boiled to make them more palatable. Boil the whole kernels

“They are easier than black walnuts to shell but still have a really nice flavor. You don’t need to drive over hickories.”

— DR. MARK “MERRIWETHER” VORDERBRUGGEN

for 15 minutes in an ample amount of water. Pour off the water and repeat the boiling process for another 15 minutes.

Keep repeating until the water does not become tinted due to the tannins. The water that you initially poured off can be used for insect bites, bee stings, sunburns and rashes, as the tannins are an astringent that help draw the tissue together.

To roast acorns in an oven, bake at 250°F to 300°F for one hour. Acorns can be eaten whole, chopped in bread and muffins or blended into a meal, which can be substituted for up to half the flour in any recipe.

Fall foraging is a great pastime that connects us to nature and our ancestors. It allows us to enjoy the new season, new flavors and get a little nuts. ©

*Kenny Coogan, CPBT-KA, is a pet and garden columnist and grows mostly edibles on his one acre homestead. His goal is to be self-sustainable through his permaculture landscape. Please search “Critter Companions by Kenny Coogan” on Facebook to learn more about gardening and homesteading.*

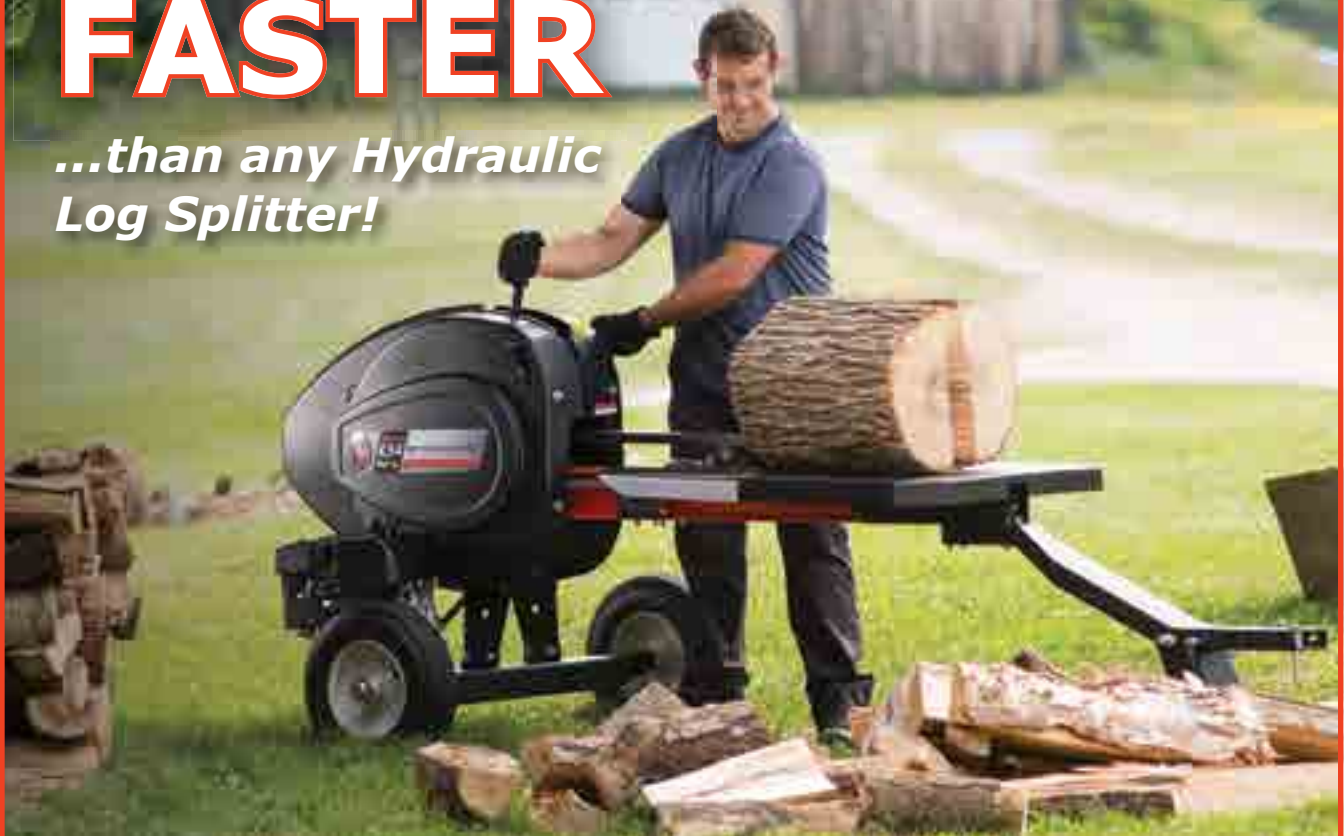
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# A Degree in Purpose

Colleges and universities haven't done much right lately. Between criminal athletic programs derailing entire campus cultures, students graduating with six-figure debts, and endless tuition increases that pay for equally endless marble monuments to alumni, it makes you wonder, why go?

The answer, at least one answer, is that there are exceptions, of course, schools that plow through the shoulder-padded temptations in order to find a higher purpose.

At least, that's what we hoped to discover when we turned Doug Ottinger loose on this issue's cover story. After he spent a few months searching, he found a number of universities, big and small, that were creating a direct line from their graduation stages to the fields and farms changing our agriculture industries for the better.

So the good news Doug reports is, they exist. Doug spoke with teachers, students and administrators to help narrow down his list (bonus points if the teacher answered her phone on her dairy farm), and learned that the idea of living simply is not lost on this next generation. Hundreds of students, we can thankfully say, are not just imbibing in the existential classroom talk. They are learning how to save our planet and feed the population by digging the fingers into the dirt and pulling out their food. As we know, you can learn about as much about agriculture in a classroom as you can learn about swimming on a mountain, and Doug made sure to eliminate any program that tried to cram a greenhouse into a textbook.

The bad news is, we need more people of all generations focused on the problem, but especially this next generation. There are 1.8 billion young people on this planet right now, according to the United Nations, which also predicts that between now and 2050, more than 33,000 people will become adults, every day. This puts a lot of pressure on the food system, and we are only just starting to feel it, which means most of the programs we featured are small, on the fringe, and in some cases, don't even qualify for a degree.

But all of these are a start. We are turning out a new generation of farmers—backyard or Big Ag—who are saving the world, and focused on rebuilding the trust between consumers and food growers. It's a vital mission, and one we hope succeeds. With this cover story, we are promoting the programs we feel have the best chance to accomplish this mission, and give their students—young or old—a nudge in the right direction.

—Ryan Slabaugh



# FARMING, TO THE NTH DEGREE

I wondered...what are colleges and universities teaching agriculture students these days?

**Nothing less than how to save the world, of course.**

BY DOUG OTTINGER

MINNESOTA

*a*cademia, I learned, is not all about laptops and college football games these days. In a few corners around the country, universities and colleges are training their students in the science of getting their hands dirty and making food.

Beyond the traditional college pillars and wood-paneled libraries, there are students who work every day under greenhouse skies along a path into agriculture. They are, like hundreds of their peers around the country, learning to build bridges between the science of agriculture and the ethics of natural resource management. And some are going a step further and focusing on food deserts, and how agriculture practices can help solve world hunger.

In this issue of COUNTRYSIDE, we have selected 10 schools that offer something traditional

agriculture courses, while also sewing in curriculums related to sustainability and responsibility. In our list, we have included both public and private colleges, and of the 10 schools selected, all were unique. So, to be clear, this is not a ranking. Just a list.

All of the schools had to meet very high standards and actually deliver on their educational promises. All had to go above and beyond when it came to teaching methods of sustainable farming and stewardship of our fragile ecosystems. All had to be making positive contributions to real needs in our world. Some are members and grant recipients of the Sustainable Agriculture Research Education program (SARE), an act passed by Congress in 1988 to further sustainability in American agriculture, and others are not.

*All are outstanding.*



## California State University at Chico (CSUC)

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IT WAS SUNDAY morning, June 19. The research had been done. We knew that Chico State (CSUC) had two programs we wanted to include in this article. However, Chico State is one of those larger schools, and faculty at larger schools can be managing hundreds of students, and often be difficult to contact.

Knowing this, I sent emails to two of the professors: Dr.

Lee Altier, of the organic vegetable production unit, and Dr. Cynthia Daley, of Chico State's certified organic dairy. I figured they might pick them up the next morning, possibly respond, and eventually we would make contact. Then I went outside to work on other projects.

When I came back inside the house, my wife told me that somebody from Chico State had called. She didn't get to the phone in time. The call was very broken-up. I tried to listen to the voice mail, but it was not very clear.

Not expecting much, I checked my incoming emails. To my surprise, I had emails from not only one, but both of these faculty members! I was also surprised to learn that Dr. Altier had responded from Nepal, and was very interested in sharing information with us.

When Dr. Daley answered the phone, I could hear the sounds of dairy equipment humming in the background. She had just finished milking and changing the water at her own dairy.

The University Dairy, meanwhile, was being taken care of by Darby Heffner, the manager of the organic dairy unit. Chico State has a certified organic dairy consisting of 85 milking head of Jersey-cross cows and produces its own feed and fodder. Being at a research university, the dairy experiments with both open and closed fodder systems. The dairy also raises its own replacement heifers.

Those involved with the dairy realize that if it is to be an actual model for the rest

*"We've been in ivory-towered academia for too long. If these programs are going to go mainstream, they have to be financially feasible. Otherwise, what is the point in doing them?" —Dr. Cynthia Daley, California State University at Chico*

of California agriculture, it has to be self-supporting and financially viable.

As Dr. Daley said, "We've been in ivory-towered academia for too long. If these programs are going to go mainstream, they have to be financially feasible. Otherwise, what is the point in doing them?"

Another of CSUC's viable operations is an organic vegetable production unit, headed by Dr. Lee Altier. Again, the program has been designed to be financially sustainable, and usable as a model for other growers in the state. What really amazed me was the close working relationship that the organic dairy and the organic vegetable unit have with each other. Both of these instructors seem to realize the importance of the symbiotic relationships necessary, not only in the biological world, but in the business and interpersonal world as well.

One of the big pushes that CSUC is making is working on building soil health through organic and microbial means, instead of using synthetic chemicals. Faculty members at Chico State are realizing that something has to change in our current system. A

number of them are working intensely in “carbon sequestering,” as well as developing agricultural methods that leave little, to nothing, in the way of carbon footprints. The university is already hosting seminars and workshops for growers in the state.

As Dr. Daley also pointed out, “Where we are with climate change, means we have to do something. These programs have to be real and be economically viable for the growers using them.”

If these programs can be used successfully in a large, commercial, high-cost and heavily regulated agricultural state like California, the reality is that they can probably be made to work, any other place in the world. •

## Sterling College

VISIT [WWW.STERLINGCOLLEGE.EDU](http://WWW.STERLINGCOLLEGE.EDU), OR WRITE TO THEM AT STERLING COLLEGE, PO BOX 72, CRAFTSBURY COMMON, VT 05827. CALL (800)648-3591.

LOCATED IN Craftsbury Common, Vermont, Sterling College is dedicated entirely to environmental stewardship and sustainable agriculture. The school offers five majors, plus an option for a self-directed interdisciplinary major. These include Ecology, Environmental Humanities, Sustainable Agriculture, Sustainable Food Systems and Outdoor Education.

As one of eight federally recognized work colleges in the United States, and the only one in the Northeast, all students at Sterling, regardless of financial aid or privilege, must work at least seven hours per week in some sort of campus industry. With a student-faculty ratio of 7:1, Sterling has one of the lowest and best ratios in the nation. The school is known for close faculty-student interaction and guidance.

The learning curriculum is designed for maximum hands-on experience in the real world, as well as classroom knowledge and theory. Many of the cognate and general education classes give much more than basic knowledge; writing and speech classes teach students how to be persuasive and influential in presentations in real-life situations. When a student leaves Sterling, he or she not only has a sound education in environmental and sustainable agricultural issues, but is also prepared to be a leader.

Sean Poynter, class of 2016, had this to say about his experience at the school: “Sustainable agriculture is integrated into so much of what we do. Whether or not you study agriculture, or work on the farm, every student at least does farm chores, gets to know the animals, and sees how the farm functions. Everyone here has a hand in growing the food that we eat.”

Another student, Amyah Cazares said, “To me, sustainable agriculture means intentionally working hard for a world where animals, vegetables and



*“To me, sustainable agriculture means intentionally working hard for a world where animals, vegetables and the soil are treated with dignity and respect. At Sterling, this plays out in soil tests, spending quality time with our animals, and continual planning made to improve our school farm.”*  
—Amyah Cazares, Sterling College

TOP TO BOTTOM: Students at Sterling College in Vermont attend to the fields and herd of cattle. Photos courtesy Sterling College

OPPOSITE: At Chico State, students manage an 85-head herd of cattle as part of their curriculum.



the soil are treated with dignity and respect. At Sterling, this plays out in soil tests, spending quality time with our animals, and continual planning made to improve our school farm.”

According to Christian Feuerstein, Director of Communications at the school, a full 20 percent of food served on campus comes from their own fields, and the school is working to significantly increase that amount. Seventy-five percent also comes from sustainable, humane

and environmentally responsible sources.

The school teaches students to work with, and care for draft animals, in the daily agricultural and environmental tasks. In fact, the school offers a minor in draft horse management. I made the remark to Ms. Feuerstein that it certainly appeared that the rubber really meets the road in the curriculum, to which she replied, “Or in our case, the hooves meet the turf!” •



## University of Hawaii—Hilo

VISIT [HTTPS://HILO.HAWAII.EDU/ACADEMICS/CFNRM](https://hilo.hawaii.edu/academics/cfnrm), OR WRITE TO THEM AT 200 W. KAWILI ST., HILO, HI, 96720-4091. CALL (808) 932-7038.

STUDENTS AT THE University of Hawaii at Hilo, College of Agriculture, Forestry and Natural Resource Management (CAFNRM), learn about tropical horticulture, with a heavy emphasis in organic and sustainable methods of production. Not to mention, it is also one of the most affordable sustainable agriculture schools.

At slightly more than \$10,000 per academic year, it ranks as one of the best-priced schools in the nation. A low student-faculty ratio of 13:1 also means that students have the opportunity to connect more closely with the faculty during the education process.

And there, food is truly a local issue. According to Dr. Norman Arancon, associate professor at the Hilo Campus, 87 percent of all food and fuel consumed in Hawaii is imported. Not only is the lack of current local production in basic food supplies of grave concern to the state, but waste management on the islands is also of very real concern.

Because of these concerns, the University of Hawaii campus, at Hilo, is involved in intense, hands-on research in sustainable and organic food production methods. Dr. Arancon's area of specialty is the handling and disposal of agricultural waste. An expert in vermiculture (earthworms), Dr. Arancon is a leading researcher in ways to convert waste into nutrient rich compost that can be put directly back into the soils for crop production in the island chain.

Organic and sustainable production is a very large part of the campus' horticulture and agriculture programs. Because of the climatic nature of tropical production, battling insect pests and plant disease without the use of sprays and toxic chemicals can be a very big challenge. Faculty at the school, including Dr. Arancon, realize that a long-term, sustainable, organic approach has many benefits over the short-term use of sprays and chemicals. Some of the methods currently in use include enclosed systems of production, as in greenhouses and screenhouses. According to Dr. Arancon, one of the biggest secrets to successful organic

production, however, is to develop stronger plants with better immune systems. Plants with healthier immune systems have an innate ability to resist disease and insect attacks much better. This is being done largely by the use of the organic fertilizers and composts that are produced from the organic breakdown of the waste products.

The Big Island, where the campus is located, has 10 distinct climatic zones, so the entire island is used as a laboratory for learning. Not only can students become knowledgeable and proficient in the basics of tropical production, they can become knowledgeable in farming and horticultural production in other climates. •

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## University of Vermont

VISIT [ASCI.UVM.EDU/CREAM](http://ASCI.UVM.EDU/CREAM), OR WRITE THEM AT UNIVERSITY OF VERMONT, BURLINGTON, VT 05405. CALL (802) 656-3131.

LONG KNOWN FOR being at the forefront of environmental stewardship, the state university is also a leader in areas of ecological farming and sustainable natural resource management. The Department of Plant and Soil Sciences has offered an undergraduate degree in Ecological Agriculture for well over 10 years, and the Department of Animal and Veterinary Sciences offers an outstanding number

of courses and degrees.

One of the flagship offerings is the CREAM program: Cooperative for Real Education in Agricultural Management. This is an eight-unit, hands-on agricultural curriculum in which small teams of students actively manage a dairy herd, and are responsible for all decisions and results, good or bad.

Amber Davis, a junior, who is majoring in animal science and pre-veterinary studies, is a participant. "I think it is the most valuable, hands-on program available," Davis said. "It gives students an opportunity to be in charge and make actual decisions, that most students only get to learn about in the classroom."

Amber, who grew up around animals on her grandfather's New Hampshire farm, knew she wanted to spend a career working with animals. When she got ready to go to college, she and her mother looked at several programs, including another CREAM program in another state. After a thorough review, she chose Vermont's program because of its unique opportunities and the school's ties with graduate schools.

She told me, "Being in charge allows you to learn in a way that no other program would. We actually make the breeding decisions and have to decide what traits we want to enhance. For example, it may be udder conformation or hoof health. We also get to work directly with a veterinarian. We actually get to administer IVs, something many students don't do until



*"Being in charge allows you to learn in a way that no other program would. We actually make the breeding decisions and have to decide what traits we want to enhance." —Amber Davis, University of Vermont*

TOP TO BOTTOM: At the University of Hawaii, students manage forestry and agriculture programs. Photos courtesy Dr. Norman Arancon

OPPOSITE: The University of Vermont established a Cooperative for Real Education in Agricultural Management (CREAM), where small teams of students manage dairy herds. Photos courtesy Jane Kennedy O'Neil



they get into a veterinary program." Students also do all of the milking and day-to-day operations. They may be there any hour of the day or night for calving or veterinary emergencies.

Not all students who apply are accepted. Grades are only one of the selection criteria. There are four basic skills tests, and a skills test may require a student to show up at 3 a.m., ready, to do the milking, help



with calving or finish other chores. The student does not need to know how to milk, for example, but they must show up prepared and be ready and willing to learn. The skills testing portrays real-life issues, that those in animal care may deal with, every day of the year. Being prepared, and showing initiative, is one of the biggest things that helps get students into the program.

The program currently has 15 students, but usually runs about 18. One other plus? All University of Vermont Veterinary School applicants who completed the CREAM program were accepted into the University's Veterinary Science Program, a notoriously hard program in which to gain admittance. •

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## University of Maine

VISIT [HTTPS://GO.UMAINE.EDU](https://go.umaine.edu), OR MAIL UNIVERSITY OF MAINE, ORONO, ME 04469. CALL (207) 581-1865.

HAVING THE LONGEST-running accredited forestry program qualifies the University of Maine as a standout school. The University's College of Natural Sciences, Forestry and Agriculture, has a very impressive education program in sustainable agriculture and environmental horticulture. Both of these programs rely heavily on organics and natural soil building. The college donates an impressive

amount of produce to local food banks, every year.

However, one thing that impressed us was the programs they offer in sustainable forest management. The school currently manages more than 13,000 acres of mixed North American forests, with some 6,200 acres being close-by University-owned land. Students in the forestry programs get weekly, year-round experience in all aspects of forest management. When students leave the school, they are well qualified to enter into a fairly large number of environmentally careers, including forestry. •

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## University of Missouri

VISIT [HTTPS://CAFNR.MISSOURI.EDU/ACADEMICS/SUSTAINABLE-AG.PHP](https://cafnr.missouri.edu/academics/sustainable-ag.php) OR [HTTPS://ONLINE.MISSOURI.EDU/DEGREEPROGRAMS/AGROFORESTRY/](https://online.missouri.edu/degreeprograms/agroforestry/), OR MAIL UNIVERSITY OF MISSOURI, COLUMBIA, MO 65211. CALL (573) 882-2121

THE UNIVERSITY of Missouri's College of Agriculture, Food and Natural Resources offers undergraduate degrees in various agriculture fields, including ones that emphasize sustainable agriculture. The standout offering from this fully accredited school is a master's degree in Natural Resources, with an emphasis in agroforestry, a farming system that incorporates crop

and livestock production with native plant and forest stewardship. The entire post-graduate degree can be completed online. For those who already have a four-year degree, but would like to continue learning, this offers a very appealing option. •

## Andrews University

VISIT [WWW.ANDREWS.EDU/CAS/AGRICULTURE](http://WWW.ANDREWS.EDU/CAS/AGRICULTURE) OR CONTACT ASSOCIATE PROFESSOR, GARTH WOODRUFF, AT [WOODRUFF@ANDREWS.EDU](mailto:WOODRUFF@ANDREWS.EDU). MAIL 8975 US-31, BERRIEN SPRINGS, MI 49401. CALL (269) 471-7771.

STUDENTS FROM conservative backgrounds who are interested in sustainable agriculture and helping others may find Andrews University, in Michigan, a fitting choice. Besides degrees in horticulture and animal sciences, Andrews offers a degree in International Agricultural Development. Well known for sustainable, international agriculture development, Andrews' policy is to respect the local cultures and use systems already in place. Organics and sustainability are integral to Andrews' focus.

The department is also active in helping develop clean, non-polluted sources of drinking water. One fairly recent project was a sustainable farming and clean water project, for an orphanage or "Welcome Center" in Swaziland ("Welcome

Center" is used because the term "orphanage" has a bad connotation in Swazi culture).

Andrews has many opportunities for students to actively work abroad and be a part of making a difference. One current project is agricultural development in Jordan. Native food crops that use less water are being located and reintroduced. At current rates of usage, Jordan could run out of water within 30 years. Andrews is working to help the country avoid potential disaster. •

## University of Kentucky

VISIT [WWW.UKY/HORT](http://WWW.UKY/HORT). PROFESSOR KRISTA JACOBSEN INVITES PROSPECTIVE STUDENTS TO CONTACT HER PERSONALLY AT [KRISTA.JACOBSEN@UKY.EDU](mailto:KRISTA.JACOBSEN@UKY.EDU). MAIL UNIVERSITY OF KENTUCKY, LEXINGTON, KY 40506. CALL (859) 257-9000.

UNIVERSITY OF Kentucky, Department of Horticulture, offers an impressive curriculum in sustainable growing practices. The department has a recurring, study-abroad program in Indonesia, where students can learn how small farms in Indonesia make a living. Just a few areas of learning are traditional rice production in Java, management of tropical forests in Sumatra, where the forest is left intact and coffee is grown in the under-canopy (often by women's agricultural co-



*Andres is working to help the country avoid potential disaster.*

TOP TO BOTTOM: The University of Kentucky offers programs in sustainable growing practices, and students can study abroad on small farms in Indonesia. Photos courtesy of Dr. Krista Jacobsen

OPPOSITE: Students at Andrews University focus on international agriculture, and are active helping an orphanage in Swaziland become sustainable. Photos courtesy of Andrews University





TOP TO BOTTOM: Unity College professors and students pushed the administrators to divest from fossil fuels and invest in sustainable agriculture programs. McKay Farm and Research Station (bottom) is a multi-faceted greenhouse operation that serves as an extension of a 225-acre campus farm.

ops), and tea production in Bali. Students can then take this knowledge and apply it to their own experience.

The university has a large, certified organic farm at its Lexington Campus. Seniors also have the opportunity to work closely with a faculty adviser in their senior-year's capstone-course in an area of their choice. •



## Unity College

VISIT [WWW.UNITY.EDU](http://WWW.UNITY.EDU), OR MAIL 90 QUAKER HILL RD., UNITY, ME 04988. CALL (207) 509-7100.

**HAILING ITSELF AS** "America's Environmental College," Unity College, in Unity, Maine, quite literally followed the old saying, "Put your money where your mouth is." By unanimous decision of the board of regents in 2008, the school made the decision to divest entirely out of fossil fuels.

The College offers 16 impressive environmental majors, including sustainable agriculture. Students at Unity gain hands-on experience at the College's McKay Farm, as well as the Unity College Barn. Both are living, working laboratories. The Farm embraces horticulture and soil sciences, while the Barn embraces hands-on education in the animal sciences.

With a student-faculty ratio of 11:1, students at Unity have the chance to work closely with their instructors. The school has not only impressive training in sustainable agriculture, but a strong emphasis in environmental biology as well. •

## Michigan State University

VISIT [WWW.MSUORGANICFARM.ORG](http://WWW.MSUORGANICFARM.ORG), OR MAIL 220 TRWOBRIDGE RD., EAST LANSING, MI 48824. CALL (517) 355-1855.

**WE CHOSE TO** include this educational program after it was spoken very highly about by other faculty from other states. The Organic Farmer Training Program is a nine-month, intensive education program that teaches the hands-on, actual operations of running your own small, organic horticulture-based operation. The program normally has only 16 to 18 students, is a not-for-credit program, and designed to help those who want to enter directly into organic farming but need more experience and education before taking the full financial plunge. The cost is comparable to a year's tuition at many state colleges, but a number of educators, from other colleges, say that the program can easily pay for itself by helping new farmers avoid a number of common mistakes and pitfalls. •

*Doug Ottinger lives in northwest Minnesota with his wife, Connie. They raise chickens, ducks and geese on their small hobby farm. Doug's educational background is in agriculture, with an emphasis in poultry and avian genetics.*

# APPRENTICESHIP TRAINS THE NEXT GENERATION

Dairy farming is an important part of rural economies. Each cow generates approximately \$20,000 of economic activity in the local community each year. But new farmers face significant barriers and are not entering the profession at a rate that offsets the loss of retiring producers. The U.S. loses 5-10% of its dairy farms every year. Because the average age of farmers is 59 years old and many do not have an identified successor, farm loss is expected to continue.

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a farmer who uses managed grazing. In managed grazing systems the majority of farm acres are planted to perennial forages and cows are rotated through paddocks of high quality grasses that are allowed to rest and regrow. Using this cost effective method, dairy

graziers are able to restore natural resources, produce high quality milk, and remain profitable in both conventional and value-added markets.

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zation. Its training program is a National Apprenticeship registered with the United States Department of Labor-Employment and Training Administration (DOL-ETA). The development of DGA has been supported in part by 2010, 2011, and 2014 grants from the Beginning Farmer and Rancher Development Program (BFRDP) of the National Institute of Food and Agriculture, USDA. To find more resources and programs for beginning farmers and ranchers please visit [www.Start2Farm.gov](http://www.Start2Farm.gov), a project of BFRDP.

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Candles and the dipping vats.

## Candles Made from Beeswax

How to make divine beeswax tapers

**B**EESWAX COMES IN A RANGE of colors, from lemon-yellow to warm, grizzly brown. Depending on its age and what part of the colony you harvest it from. While wax from all areas of the hive is useable to a degree, it is cappings wax, the newest wax you collect as part of your honey-extracting process, that makes the most divine beeswax tapers. It can take years for even the most productive small-scale beekeeper to save enough wax to fill a dipping vat with the material to make a single set of tapers.

STORY AND PHOTOS  
BY LAURA  
TYLER  
COLORADO

But since beeswax candles make a most precious gift representing a marriage of effort between the bee and the beekeeper, they are absolutely worth saving for.

Like many beekeeping families, my husband and I divide our beekeeping work between the two of us. Beeswax rendering and candle making are his domain. His engineer's mindset and interest in systems make for efficient and consistent candle production. While you don't need to be an engineer to make beautiful hand-dipped candles, it helps to be methodical. And with a measure of patience you will do just fine.

### PREPARATION

- Collect your equipment before you start. Look to beekeeping and candle supply companies for specialty materials like wick, wax melting containers and dipping racks. Equipment like water bath pots and cooling racks can be easily thrifted, or perhaps can be found in your home. Food and craft don't mix, so whatever you appropriate from the kitchen for candle making should remain candle making equipment forever more.
- Give yourself time and space. Candle dipping is a slow craft that you will enjoy more if you set aside the time for it to happen at an unhurried pace. Also, if you are using your kitchen for candle dipping, don't plan to also use it for cooking while your stovetop is occupied with wax.
- Make sure you have enough melted wax, and then some, to fill your dipping vat. It can take 10 or more pounds of wax to fill a 15-inch dipping vat, depending on its diameter. The wax level in your vat will drop as your candles grow so keep a pouring pot of melted wax nearby to add to your vat as needed.

to see him act as if he were fighting bees. — Abraham Lincoln

- Heat your wax safely. Beeswax melts at around 145°F. At temperatures above 185°F it will discolor, and at 400°F it becomes explosive. The ideal range for candle dipping is between 155°F and 175°F. Melt your wax in a water bath to maintain a safe temperature. Never melt your wax directly on a stovetop. Electric warming containers with a rheostat that allow you control the temperature are also available. Use a candy thermometer or laser thermometer to test wax temperature throughout your candle-making session. Invest in a fire extinguisher for your work area if you don't already have one.
- Protect your lungs by ventilating. While beeswax fumes are relatively benign, the beeswax molecule starts breaking down into respiratory irritants at temperatures of 220°F and above. Reduce your potential exposure to these irritants and any other colorants or scents you may use by ventilating your space. A range-top hood provides good outflow. Leave a door or window cracked to allow fresh air in.

#### HOW TO RENDER BEESWAX

Rendering is the process of heating and melting unprocessed wax to filter out impurities. I recommend using only cappings wax for dipping beeswax tapers. It is easier to clean than wax from other parts of the hive and makes for an exquisite, aromatic candle.

#### MATERIALS

- 1 or 2 nylon mesh straining bags available from most beekeeping suppliers
- 2 wax pouring pots with handle and spout
- Water bath (large cooking pot filled part way with water)
- Paper towels
- Silicone molds (cupcake size molds recommended for easy handling)

#### METHOD

- Set water bath to boil.
- Use warm (not hot) tap water to rinse honey residue from cappings wax in mesh straining bag.
- Fill wax melting pot halfway with a 50/50 mix of rinsed cappings and water.
- Set half filled melting pot in water bath to melt.
- Pour melted 50/50 mix through an empty mesh bag into your second wax melting pot. The goal of this first pour is to filter larger bee parts and detritus from cappings.
- Set pot in water bath to re-warm and settle.
- Wax and water will separate. Wax will settle on top. A layer of slumgum will settle under your wax on top of the water.
- Gently pour clean layer of wax into silicone molds. Avoid pouring slumgum and water into molds.
- Allow any remaining wax, slumgum and water to cool in wax melting pot. When cool, it will separate from the sides of the container allowing you to remove it from the pot. Discard water. Save cooled wax/slumgum disc for further rendering. Try using a single ply of a two-ply paper towel instead of mesh bag when rendering further for a finer result.

#### HOW TO DIP BEESWAX TAPERS

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**MATERIALS**

- Water bath (large cooking pot filled part way with water)
- Dipping vat tall enough to accommodate the height of candle you'd like to make
- 1 (or more) wax pouring pots with handle and spout
- Rendered beeswax, enough to fill dipping vat and replenish as needed while dipping
- Thermometer
- Taper dipping frame (optional)
- You may also dip candles freehand by tying little weights (nuts or washers) onto ends of wick.
- Wick for tapers, 2/0 square braid cotton wick recommended, but you are free to experiment
- Cooling rack (try using an old fashioned clothes drying rack)
- Blade for candle trimming



Wicks are strung through the candle dipping rack.

While you don't need to be an engineer to make beautiful hand-dipped candles, it helps to be methodical. And with a measure of patience you will do just fine.



A finished candle.

**METHOD**

- Set water bath to boil.
  - Place dipping vat in water bath and fill with beeswax. The dipping vat will float when empty but should settle neatly on the floor of your water bath as you add wax weight.
  - Prepare a reserve of melted wax to replenish dipping vat as you dip your candles. If you can get your wax pouring pot wax to fit in the same water bath as the dipping vat, great. If not, prepare a second water bath.
  - Monitor wax temperature using a thermometer. The ideal range for beeswax candle dipping is between 155° and 175° F. Do not allow wax temperature to exceed 185° to prevent wax from darkening.
  - String wick through candle dipping rack per instructions.
- Skip this step if you plan to dip your candles freehand. If dipping freehand, simply tie nuts or other small weights to wick ends before dipping.
- Dip candle dipping rack or weighted wick to desired depth in dipping vat. If this is your first dip wait for bubbles to rise from the wick before you remove it from the dipping vat. When the air bubbles stop rising it is a sign that your wick is properly saturated with wax. Do not wait for bubbles on subsequent dips.
  - Place on rack to cool.
  - Candle is ready to be re-dipped when it is still warm, but not hot, to the touch. You will learn to judge this as you progress.
  - Continue the process of dipping, cooling and re-dipping until

you reach desired candle width. Create a nice tapered tip on your candle by dipping it just deep enough to submerge previous high wax mark each time you dip.

- Count your dips and make notes for your next candle making session.
- Use a blade to trim the bottom ends of your candle pairs. Dip candles two to three more times after trimming to finish ends.

### TROUBLESHOOTING

- Candle making takes practice and good old-fashioned trial and error to master.
- If your candles appear rippled it may be because the wax is too hot, or you are dipping the tapers too fast. First, go slower. If that doesn't fix the ripples, lower the temperature in your dipping vat.
- If your candle ends look like ringed tree trunks when you trim them it means your layers have failed to bind. Either your wax in the dipping vat was too cool, or you allowed the tapers to cool too long between dips. Next time increase the temperature in your dipping vat and/or allow less time to pass between dips.
- If your candles fail to build mass it means your wax is too hot and you are melting your previous work each time you dip. Or you are dipping your tapers too slowly. Reduce your heat and try again. The trick to mastering hand-dipped candle making is to find the right combination of temperature and dipping speed.
- Dip candles at a consistent, steady rate to prevent ripples. ©

Laura Tyler is the director of *Sister Bee*, a documentary about the life of beekeepers, and lives in Boulder, Colorado, where she raises bees with her husband. If you have questions for her about raising bees, contact her at [laura@sisterbee.com](mailto:laura@sisterbee.com).

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# Time to Winterize Your Beekeeping Gear

A few tips to best store your bee equipment for winter



BY  
ALEXIS GRIFFEE  
FLORIDA

**A**S THE COOLER WEATHER ROLLS in, our thoughts on the farm often drift to the major winter tasks. However, for beekeepers, there are still some tasks to complete before hanging up your bee suit for the year. Proper storing and cleaning of your beekeeping equipment is not only vital to the life and functionality of your equipment, but also to the health of your bees.

As the honey flow winds down and your honey has been extracted, it is time to clean and put up your supers, frames and foundation. On our own farm, we always take this time to clean and prep all of our equipment so that

we are not left chasing our tails as we scramble to assemble it all while catching a swarm or in the middle of the bee yard. It is pretty common to find a frame that has gotten a bit off kilter from use, especially after being in an extractor for the honey harvesting! We take this time to rebuild what we have that was damaged during the year. It is also at this time that you can take inventory of your supplies. If you know that you had a certain item that was irreparably damaged, now is the time to write down what will be needed for replacements.

During this time, we go through and scrape off any extra propolis and wax, and inspect all of the frames for sturdiness. When scraping off your frames and boxes, it is important to pay special attention to the corners or any cracks. These are the areas that some pests will hide and lay their eggs. Not only is it important to eliminate these pests, but this will also tell you if there is a bigger problem brewing within your hives.

It is also through these inspections that we can really have a good look at what is going on with our bees. If there were any problems with pests like wax moths or hive beetles, it will be clear when you inspect these parts. If we do find a hive or frames that have pests on them, we often will freeze them in our deep freezer to kill off any eggs. Many beekeepers will do this to all of their equipment, space permitting, as an extra precaution.

However, if you find yourself lacking freezer space, another tried

and true method to sterilize your equipment is to use a blowtorch. Many beekeepers will use a blow torch lightly on the insides of all of their boxes and on wooden frames. This will not only help to burn off any residual wax and propolis but kill any eggs that may have escaped your inspection. This method is chosen often because it is fast, precise and does not take any particular skill all while being effective.

Chemical sterilization, although harder to use, is another method that is used commonly by commercial beekeepers with a large amount of equipment. Chemical sterilization of your hives and components has proven through the years to be effective with threats to your hive. While more commonly utilized overseas, the use of acetic acid to fumigate your equipment has been proven very successful.

To use this fumigation method, the hive components need to be bagged, wrapped or stored in a sealed, preferably wooden structure. To use acetic acid, you will need 80 percent industrial grade. This can be acquired from beekeeping supply stores as well as some chemical supply stores. For the treatment, you will need to place a dish of acetic acid, usually about 50ml worth, on top of a stack of hive parts. This is where many people seal the hive components up depending on their storage locations. The hives and the acid should be left undisturbed for approximately one week. After this time, the acid can be disposed of and the beekeeping equipment can be aired out so that it is ready for use before next year. Once this, or other cleaning and sterilization method has been completed, your equipment is ready for storage.

However, a word of caution when using acetic acid. Acetic acid will corrode metal as well as concrete. Due to this, it is recommended that you cover all metal parts with Vaseline to prevent the corrosion. Additionally, do not store your metal extractor in the same enclosed area as your other equipment when you are using this method! If your fumigation area has concrete floors,

be sure to bag your hives and seal them tightly before you begin this process so that it does not cause damage to your floor. Also, be sure that you wear proper eye protection as well as gloves when handling acetic acid to prevent injuries. Always keep acetic acid clearly labeled and away from children and pets.

Despite the extra caution needed when using acetic acid, there are many benefits. This method is especially valuable to the beekeeper that has dealt with pests and unexplained hive loss. Acetic acid is proven to kill nosema parasites, chalk brood spores, wax worms and other problems that have plagued beekeepers. No matter what method of cleaning your equipment you choose, all provide valuable benefits and are crucial to keeping healthy hives.

After you have your equipment repaired, cleaned and sterilized, it is time to store it for the winter. While you are preparing your own home to endure a cold winter, so are many pests. Areas that are prime for storing your equipment are also perfect for pests like mice, moths, snakes and roaches to spend their winter, too. It is no secret that mice alone can do a lot of damage to property. Mice are attracted to the sweet smell of the foundation and equipment. The boxes make great starting points for their nests and the wax gives them something to chew for the long winter. Aside from the obvious damage that this will cause your equipment, this is not sanitary. These same boxes will be holding honey next spring so keeping them clean should always be a priority.

As with anything in nature, for every action there is a reaction. In the winter, snakes need a couple of things: warmth and food. In your storage shed if it is not properly maintained, your bee equipment can be a supplier of both of those needs. Snakes will follow the rodents, and sometimes that may mean into your storage area. While they are just following their food source and do not have a specific interest in your beekeeping supplies, this can still

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During this time, we go through and scrape off any extra propolis and wax, and inspect all of the frames for sturdiness.

be problematic. Obviously some snakes are venomous, and even those that are not can still give you a nasty infection if you are to get bitten. Like the mice, it is just best to prevent the problem before it starts.

It is not just larger pests that can cause major damage to your beekeeping equipment. Moths, roaches and other scavenging bugs are drawn to the smell of foundation in particular. They will eat, destroy and lay eggs on your equipment. Aside from negating all of your previous work with cleaning and preparing your equipment at the end of the season, this will also put you at risk for introducing pests

into your hives next spring.

One of the easiest and cheapest ways to keep your bee equipment pest free through the winter is to use moth balls. Moth balls will repel most major pests and keep them out of your equipment storage area. Generally speaking, moth balls should be replaced every year to ensure that they are still potent enough to do the job effectively. To use these, simply sprinkle them around the base of your equipment. When we stack our hive bodies and supers, after every few, we put a layer of cardboard in between the boxes. On this, we lay some more moth balls. This tried and true method

is used commonly by beekeepers all throughout the United States.

Homesteaders are hopeful people and are always planning and looking forward to the next season in their life. Beekeepers are no exception to this rule! It is during these winter months where you can take the time to plan out your apiary and determine your plan for next year's success. It is also in this time that you will need to get your bees on order. This can be done by placing your order through a mail order company or by contacting other beekeepers in the area that catch and sell swarms or split their own hives for resale purposes. It is important to not end your beekeeping duties as soon as the cold weather sets in. Through a little hard work and planning with your equipment, you will be setting yourself up for a productive spring. ©

*Alexis Griffie is a beekeeper in Milton, Florida.*

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## Tube Feeding a Weak Kid

It's possible, and could be a necessary technique you need for one of your younger goats

BY  
CHERYL K.  
SMITH  
OREGON

**B**UTTERCUP, A 3-YEAR-OLD OBERIAN doe, unexpectedly went into labor before the calendar indicated she should. Upon checking breeding dates, I discovered that my farm partner and I had different breeding dates. She was at either 140 or 145 days gestation. That would make the kids either premature, or just on the cusp of maturity. Still, it didn't occur to me that there might be a problem with the babies.

The labor was normal and uneventful, and around 10 p.m., Buttercup delivered a little doeling, then a buckling and then a stillborn doeling. The problems began with the first kid, who was in respiratory distress and was having trouble getting a breath. Her tongue was hanging out and despite stimulation by both Buttercup and me, she was very weak. Her brother followed suit, and despite swinging and removing mucus with a bulb syringe, neither of the living kids could stand up. They were floppy, weak and had no sucking ability.

This was one of those times that I had to pull out my book, *Goat Health Care*, and relearn how to use a stomach tube to give them some warm colostrum. If they were mature enough, it would be the only chance they had to survive. Anyone who raises goats is wise to include a tube and syringe designed for such feeding in their birth kit to give weak or sick kids a fighting chance.

You can purchase a flexible rubber feeding tube, along with a 60 ml syringe and an irrigation tip for \$5 or less at most veterinary supply stores, or from a veterinarian. The tube has a tapered end, which attaches to the syringe. The cost is minimal, compared to paying a veterinarian; and while it seems scary to tube feed, it really isn't that hard.

The biggest fear that people have about tube feeding is that they will accidentally get liquid into the goat's lungs. Although you need to be careful, it is much easier to get the tube into the stomach than into the lungs, and there are several ways to check to make sure it isn't in the lungs before you add milk or colostrum.

To determine how far to insert the tube, measure from the kid's nose to the center of the ear base. Then measure from the ear to the chest floor and mark the feeding tube with the sum of those two measurements. That mark is how far the tube must be inserted into the kid's mouth. (If the tube cannot

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## The biggest fear people have about tube feeding is that they will accidentally get liquid into the goat's lungs.

be inserted that far, it is the first sign that it is in the windpipe [trachea] rather than the stomach.)

Although tube feeding can be done by one person, having a second person to hold the kid is better. Some kids (like Buttercup's kids) are too weak to even fight back, but others may have more spirit but yet be unable to suck.

To tube feed, hold (or have someone hold) the kid on your lap and tilt its head back slightly so the tube has a straighter path to follow. Open the kid's mouth a little

by pressing on one side of the jaw with your fingers. Take the softened tube and slowly slide it down the kid's throat, small end first. If it does not go as far as the mark, slowly pull it out and start over. (I have never had this happen.)

If the kid was crying before the tube was inserted and suddenly stops during the process, slowly pull the tube out and start again.

Putting one hand on the front of the kid's throat will help you feel when the tube enters the esophagus. When the mark on

the tube is at the opening of the kid's mouth, you are there.

There are several methods for checking to ensure that the tube is in the right place. The first is smelling the end of the tube for a milk smell coming from the stomach. I didn't use this method in the case of Buttercup's kids because they were just born and had no milk in their stomachs.

The second method is to place the end of the tube into a cup of water. If bubbles come out, the tube is in the lungs. I have done this, but it can be unwieldy, especially if you are working alone.

The third method is to blow gently into the tube to see whether the lungs inflate. I have not tried this method, in part because I have concerns about blowing too hard into fragile newborn lungs.

I chose the fourth method: Listen at the end of the tube for the

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little crackles that are the sounds of breath. I heard no sounds so I was ready for the feeding.

After determining that the tube is correctly placed, you are ready to feed. Attach the 60 ml syringe to the feeding tube. Use your 6 ml syringe filled with warm water to add water to the syringe to ensure that it goes down properly and is not twisted. If everything seems fine, pour the colostrum or milk into the tube, while holding it up higher than the kid. (The plunger is not needed for this procedure because gravity will pull the milk down.)

After the milk or colostrum is gone, add another 6ml more water to rinse the syringe. This step is not essential, but can help to prevent milk or colostrum from going into the lungs while removing the tube, if some is left in the syringe or tube. Then withdraw the tube slowly, but in one smooth motion.

In some cases, you will see a striking difference in the kid. It may stand up within minutes and even show interest in nursing shortly afterward. In others, you may need to do several such feedings before the kid develops the necessary strength.

In the case of Buttercup's kids, their prematurity made life impossible and the tube feeding had no effect. Their lungs were not developed enough for them to survive without more treatment than an average goatkeeper like me can provide.

I try to take something good from every experience with my goats. In this case I learned that I can tube feed (I hadn't had to do so for at least six years) without hurting the kid, and I was reminded that on the homestead, you are never far from new life or death. ☺

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*Cheryl K. Smith is a freelance writer and editor. She 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.*



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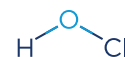


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# An Assignment to Fall For



A measurement of childhood bravery. PHOTO BY MARSHALL NYCH

BY MARSHALL  
NYCH  
PENNSYLVANIA

**I** HAVE ALWAYS BEEN A BIT OF a science nut. During my junior year at West Middlesex High, Mr. Hutch was the squirrel. My buddies and I attended his biology class most days. On one such occasion, Mr. Hutch assigned his pupils a project worth 110 percent of final grade. I didn't know this was even mathematically possible. Perhaps I should have showed up for my math courses occasionally as well.

The assignment was a detailed, scientific leaf collection, 25 samples from trees native to Pennsylvania. My childhood misspent around, near and, mostly, in trees of Pennsylvania, this acorn was certain to get an A.

Two of my best buddies, Powder and Jimbo, did not particularly care to be juniors for a third time. Being the good pal I am, I offered academic assistance to my friends in need. I have found friends in greed are friends indeed. Hence, we three agreed we would venture to my family farm to gather leaves. Most kids reported to local parks, complete with bronze placards detailing each tree. We were not most kids.

"Leaf it to me," I assured them with my signature chuckle.

"That's kind of what we were afraid of!" Jimbo admitted. Powder shook his freckled head. Neither one of the dynamic duo clearly appreciated my scientific brand of humor.

In a short walk, the brisk variety, the three of us had collected some 25 species of leaves native to our Keystone state. One problem soon surfaced. Being efficient procrastinators, we had done our best to neglect the project. Like a crew of absent-minded chefs, we placed the leaf collection on the backburner until the weekend prior to the deadline. Hutch's deadline happened to fall in late November.

Anyone who knows anything about trees and their foliage knows there are not many leaves left to collect come late November. Such coincidence put the dead into our biology instructor's deadline. Everything Powder, Jimbo and I had picked looked deceased or, best case scenario, was a crispy soon-to-be. Other biology students from class had gathered foliage with brilliant, chlorophyll-rich shades of green. We three had merely imprisoned an assortment of brown, dark-brown, or what-the-heck brown. The Crayola factory crayon naming committee, located

on the other side of the state, would terminate our suggestions at once.

While our studious peers spent their November gingerly sipping hot cocoa and celebrating the fine leaf collections they had amassed, we stood frozen, both by our lackluster performance and the 11th month's chill.

We figured most biologists quickly bore with their work. The three of us were no different. Following such an exhausting academic pursuit, we opted to focus on a little recreation. Thirty minutes of tromping and stomping the pathetic carpet of leaves was a lot of work.

Powder, Jimbo and I, as with many of our adventures, ended up at the farm ponds. One positive side effect to Interstate 80's trespass on our family farm back in the 1950s was the three, two-acre ponds left in its wake. From fishing and camping to swimming and trouble, the ponds were among the top spots to hang out in our rural, northwest Pennsylvania community. Admittedly, we reveled in the comfort there wouldn't be as many trees around the farm ponds. However, a rope swing hung from a perfect specimen of oak along the pond's eastern cliff.

"This is a red oak! Do we have one of those yet?" I eagerly asked my two accomplices.

"Give it up Marshall!" Powder and Jimbo replied in unison.

Braided fibers in hand, one can merrily swing out over the pond. For some unknown reason not researched by biologists, when adolescent boys congregate they often times try to prove how tough they are. Such experiments often prove how tough they are not. This biologic behavior would make a much more interesting study than a leaf collection. Peering over the steep cliff, our trio determined this was the ideal time for such a test of toughness.

One at a time, Powder, Jimbo and I swung over the water. Simultaneously, we screamed various declarations, not all school appropriate, loud enough for most Mercer County residents to hear. I would imagine we sounded reminiscent to Tarzan as an awkward, pimple-faced teenager. Powder and Jimbo then started doing what they did worst—thinking. Moments later, they divulged their plan.

"Let's see who is really tough," cried Jimbo.

"How?" I inquired.

"Swingin' by yourself is too easy," Jimbo answered.

"Yeah, let's try to swing out with someone on our back!" thought Powder aloud.

Tangled in the moment, I hollered, "Okay, me first!"

I was a pretty tough kid with a strong grip on everything, save reality. I had worked every summer

on Grandpa's farm. Nothing turns a boy into a man faster than baling hay. Hence, I had no problem swinging over the water and back with the petite Powder perched piggyback on my shoulders. I held tightly to the rope and let gravity do most of the work. Upon safely drifting back onto the cliff's edge, Powder, who was shivering from a cold sweat, admitted, "Man, you're tough!"

Jimbo couldn't stand the idea of not being "tough!" Although all three of us knew he wasn't, Jimbo had to try.

"Who is gonna' hop on my back?" Jimbo asked.

"Not it!" I immediately called. I weighed about 200 pounds, which was probably 50 more than Jimbo himself. This calculation factored in Jimbo being soaked to the bone, which is precisely what I feared most.

"Hop on, Powder!" ordered Jimbo.

After wiping the sweat and getting over the shakes from his first ride, Powder jumped on Jimbo for a sequel. The two combined to create a creature best described as strange. Jimbo's lanky arms reached for the rope and his shivering legs prepared for takeoff.

"Three...two..." I shared, getting caught up in the moment.

"No countdown!" Jimbo yelled.

Powder, had he been able to speak, may have agreed.

Jimbo, with Powder clenched to his back like a baby possum,

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I was a pretty tough kid with a strong grip on everything, save reality.

lunged over the cliff. I failed to mention Jimbo's arms were more like wrists and his wrists were more like fingers. Needless to say, he was not very tough.

I heard irrepressible screams of terror followed by the most amazingly unique November sounds. Powder and Jimbo hadn't lasted but a second on the rope. The two awkwardly crashed into the icy pond water. Never had I witnessed someone dive into water while party to a piggyback ride, particularly in November. Literally, pure mirth caused howling and screaming with laughter on the cliff's edge. The pair of Pennsylvania polar plungers did not share in my delight.


With blue lips frozen across bewildered faces, Powder and Jimbo gasped for air. They began taking turns saying very bad things about

Mr. Hutch, the leaves, the farm, and life in general. Perhaps several rude remarks were made about me as well, but I was too busy laughing uncontrollably to hear the specifics.

Fortunately, Powder and Jimbo's leaf collections were safe and dry (arguably dehydrated) on the bank. Unfortunately, Powder and Jimbo had failed to empty the contents of their pockets prior to their one-way flight. I do not blame them. It doesn't look very tough to empty one's pockets before conducting a risky, manly activity. Before shooting up a whole town, Clint Eastwood never said, "Wait one second, I need to empty my pockets in case things get messy."

Still in their denim jeans, which matched their skin tone quite well, Powder and Jimbo salvaged what was left of their wallets, cell

phones and fake pictures of pretend girlfriends (the perfect portraits that come complimentary in the frame or with the billfold upon purchase).

Powder, Jimbo and I turned in our leaf projects a little damp and a little late. Most are familiar with the expression "pass with flying colors." Well, the three of us below basic biologists did not achieve this. Our various shades of dead and brown barely earned a grade at all. Miraculously, the three of us managed to pass biology and made it to our senior year. Perhaps Mr. Hutch, who was also once a teenage boy, gave consideration to our toughness. 

*Marshall Nych shares stories from his life with COUNTRYSIDE on a regular basis, and writes them from his home in New Wilmington, Pennsylvania.*



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Piggy Smalls, pictured left, wanders about, while Valerie Thaxton hangs out with two of her goats.

# The Big Adventures of Piggy Smalls

The WCHS Eyewitness News headline read, “Neighbors Concerned for Pig Wandering Around Sissonville”

BY JUSTIN  
THAXTON  
WEST VIRGINIA

**P**EOPLE SAY PIGS ARE SMARTER than dogs. I don’t know if dogs should be flattered by the fact that their kind is the standard by which animal intelligence is measured, or insulted that swine are supposedly smarter.

Having spent much more time with dogs than pigs, I have always been skeptical of such talk. Then my wife, Valerie, brought Lulu home. The little pot-bellied sow was awfully cute and since it was winter and she was just a baby, she was allowed to stay inside. Our dog, Tug, a black-mouthed mutt who comes from a long line of hunting dogs, didn’t seem to mind, so I went along too.

Lulu slept on a rug in front of the wood stove, enjoyed having her tummy scratched and went to the door when she needed to “go out.” I was impressed. I began to accept that Lulu was at least on equal footing with most dogs. The weather eventually improved and Lulu grew so she moved into her new digs with Valerie’s two goats.

Having two goats and a pig made my wife a bit of an odd celebrity in our circle of friends—her notoriety, no doubt, thanks to the daily social media postings. I couldn’t leave a church service or go to the grocery store without someone asking about the latest goings-on around “the farm” and Val’s newest addition. It was as if I were living with a real-life Elly May Clampett from the Beverley Hillbillies. If only we could have gone for the cement pond instead of the critters.

There are some issues with folks knowing you live off the beaten path and have compassion for wayward animals. We've had our fair share of animals dropped off at our doorstep. Some orphans we've adopted, the remainder we've found homes for. People also assume you to know how to deal with all sorts of animal-human conflicts such as when a pea hen took up residence on a friend's roof in her upscale neighborhood. And my favorite is when people view our place as the perfect spot for their pet to live out the rest of its life down on the farm. In other words, when they realize God did not intend for goats to live in subdivisions.

#### MAKE THAT TWO PIGS

This final point is how we came to be the proud owners of not one, but two pigs. This second pig came to us when friends tried to keep a small, black boar in their home. I suppose the amorous behaviors of a young, male hog are difficult to explain to your children, so he had to go. Valerie agreed to keep the little porker until a new home could be found. Our friends are good people, but I can't help but wonder if they were already thinking, "He just found himself a new home." Regardless, Valerie assured me we were simply fostering the pig. Then she assured me we would only keep him if we had him castrated. Then she named him Piggy Smalls. Then we owned two pigs.

As mentioned the pigs were stationed with our goats. The goat pen was constructed with two large goats in mind, not two small pigs. We commented many times that Piggy Smalls could go under the mesh fence any time he wanted. He just had never wanted to bad enough. He had a warm shelter, plenty of food and Lulu for company. Then one day last winter something changed.

Not surprisingly, the residents of Brenda Lane Estates had not expected to see a pig roaming their streets. Some had fed him apples and Cheerios and one couple interviewed said they were willing to take him in if no one claimed him.

#### THE ESCAPE

Around the 22nd of December, Valerie looked out the window and saw Piggy Smalls in our driveway. He didn't seem to be in a hurry to go anywhere and spent his time searching for acorns and waste grain in the leaves. Valerie even suggested leaving him out. I disagreed as soon as he switched from rooting in the leaves to rooting in our lawn.

Piggy Smalls could not remain a free-range pig. The goat pen is cross fenced and Piggy Smalls seemed to always escape from one end, so we closed a gate and limited him to the area with better fencing. This worked for a couple days. Once again I came home from work to see a pig in the driveway and a freshly "plowed" lawn. Some repairs and improvements were in order, so Piggy Smalls was temporarily relocated to our dog kennel.

On Sunday morning, December 27, we went to church as usual. While we were away, Piggy Smalls escaped yet again. We had no idea that our little pig was about to have himself a grand adventure and become famous in the process.

#### PIGGY SMALLS...TV STAR

I had to be out of town for work on Monday and Tuesday that week so Valerie searched for Piggy Smalls alone. She couldn't find him and had no idea where he

might have gone. I thought it was odd that none of our neighbors had seen him. During each of his previous outings, someone had called us. The week came to an end without any news and Valerie was beginning to lose hope that he would return. Everyone was a bit down because he had always been such a friendly little pig.

On New Year's Eve, Valerie and I took our kids to my brother's house for a visit. We had dinner with my brother and mom, watched a movie, and then caught the first portion of the local news. To everyone's amazement, one of the first news stories was about a small pig roaming a nearby neighborhood. Everyone burst into excited chatter as Piggy Smalls posed for the camera!

I tried to hush them so we could hear the details. Not surprisingly, the residents of Brenda Lane Estates had not expected to see a pig roaming their streets. Some had fed him apples and Cheerios and one couple interviewed said they were willing to take him in if no one claimed him. Rushing out the door, we headed for where Piggy had been seen earlier in the day. Brenda Lane Estates is situated nearly a mile from our house as the crow flies, but the topography is rough with steep ridges and hollows. We assumed Piggy Smalls had made his way to the gas line right-of-way behind

our house and wandered off. I was a little surprised he hadn't been able to find his way back home.

Valerie's phone was buzzing before we were out the door. Calls and texts came in from family and friends who had seen the news. Amazingly, my friend Jason, who was on vacation with his family in Japan, saw the news story but didn't realize it was Piggy Smalls. Later this news story and the buzz it created would help us piece together Piggy Small's wanderings. A hurried visit to the neighborhood was a letdown. We went door to door but the folks we talked to said Piggy Smalls had been there a couple times and the latest visit was earlier in the day. We walked the area shaking a bucket of grain and calling, but came up empty handed.

### HEAD WEST, YOUNG PIG

Turning to a Facebook site for our area, Valerie communicated with two individuals who said they had seen Piggy Smalls on Harbert Lane off of Rocky Fork Road on December 29.

This was our first clue that Piggy Smalls had done more than simply wander off a short distance. A young lady Valerie knows informed her through a Facebook message that Piggy Smalls passed through her yard, southwest of Harbert Lane on December 30. This meant he had travelled northwest for more than a mile and a half (again, as the crow flies), and then walked nearly 2 1/2 miles back past our house to the southeast for his television debut at Brenda Lane Estates. Piggy Smalls seemed to be wandering aimlessly, which gave us little hope of finding him.

### GRAB THAT PIG!

On New Year's Day, our neighbor Steve Lanham and his dad, Johnny,



## True Story

### Need proof?

Here's the news story online:  
<http://www.wchstv.com/news/features/eyewitness-news/stories/Neighbors-Concerned-For-Stray-Pig-Wandering-Around-Sissonville-247163.shtml>

The map of Piggy Small's zig-zagging adventure

showed up at our house to find out if we were missing a pig. They had spotted Piggy Smalls less than a mile down the hollow from our place. Once again, we jumped in our truck and hurried after our elusive, little pig. Before we made it to the spot where Piggy Smalls had been spotted, we saw a couple, the Parsons, in their yard feeding him. Piggy Smalls chomped on corn as we quickly introduced ourselves to Mr. and Mrs. Parsons. They were as surprised by Piggy's arrival as we had been by his disappearance. Mrs. Parsons offered me a leash as we considered how to convince our gentle but touchy friend to climb into the dog carrier we had brought.

Piggy Smalls has always loved being scratched and will roll over

as if paralyzed if you hit just the right spot, but he does not care for being controlled or confined. I also doubted the usefulness of the leash straight away because our pig has no neck to speak of. This left us trying to lure Piggy into the crate with food. All the attention had Piggy Smalls on edge, and even though he was eating, I could tell he was nervous. I can only imagine how many people had tried to wrangle him during his adventure. And if all the excitement weren't enough, the Parsons had several strands of electric fence around their flower beds to detour deer. At one point Piggy Smalls made his way toward the fence, and just as I asked if the fence was on, he shrieked and ran a short distance up the bank behind the Parsons' house. I expected the pig to run for the woods at any point.

With all hopes of a peaceful conclusion out the window, I decided to take more drastic measures. I would have to catch Piggy Smalls and hope he

remembered we were pals. He is small but very powerful and equipped with impressive teeth. Getting as close as he would allow, I prepared to grab him by a hind leg just as I've seen them do it on television. Piggy Smalls was much quicker than I expected, and I landed on my belly with a thud as he scampered away.

Thankfully, the yard met a rock outcropping that limited Piggy's escape options. While I had been easing into position for my flopped attempt, Mr. Parsons and my son, Caleb, had been easing up the hill and were able to steer Piggy back down.

A second diving grab ended no better than the first. Actually, it was much worse than the first, because despite having warned Caleb repeatedly about touching the single strand of electric fence on the bank, I forgot about it when I landed the second time. As luck would have it, my graceless flop carried me directly under the wire. As I quickly rose up the first thing to make contact with the wire was my nose. I've gotten into electric fences before but never with my face! The crowd that had gathered—my wife, my son, Mr. Lanham, Mr. Lanham's dad, and Mr. and Mrs. Parsons—didn't even try to conceal the snickering after I was zapped. I'm convinced that pig got more sympathy when he touched the fence than I did. Being famous certainly has its privileges.

He hadn't bolted yet, so we closed the circle of folks we had around Piggy Smalls until he was forced into a small briar patch. This limited his movement enough for me to grab one hind leg. Our normally quiet pig let loose with an ear-piercing series of screams as I secured the other hind leg and walked him back down the hill like a wheelbarrow... making sure to steer clear of the fence. Piggy Smalls and I were breathing hard as we loaded him into the pickup. He had put

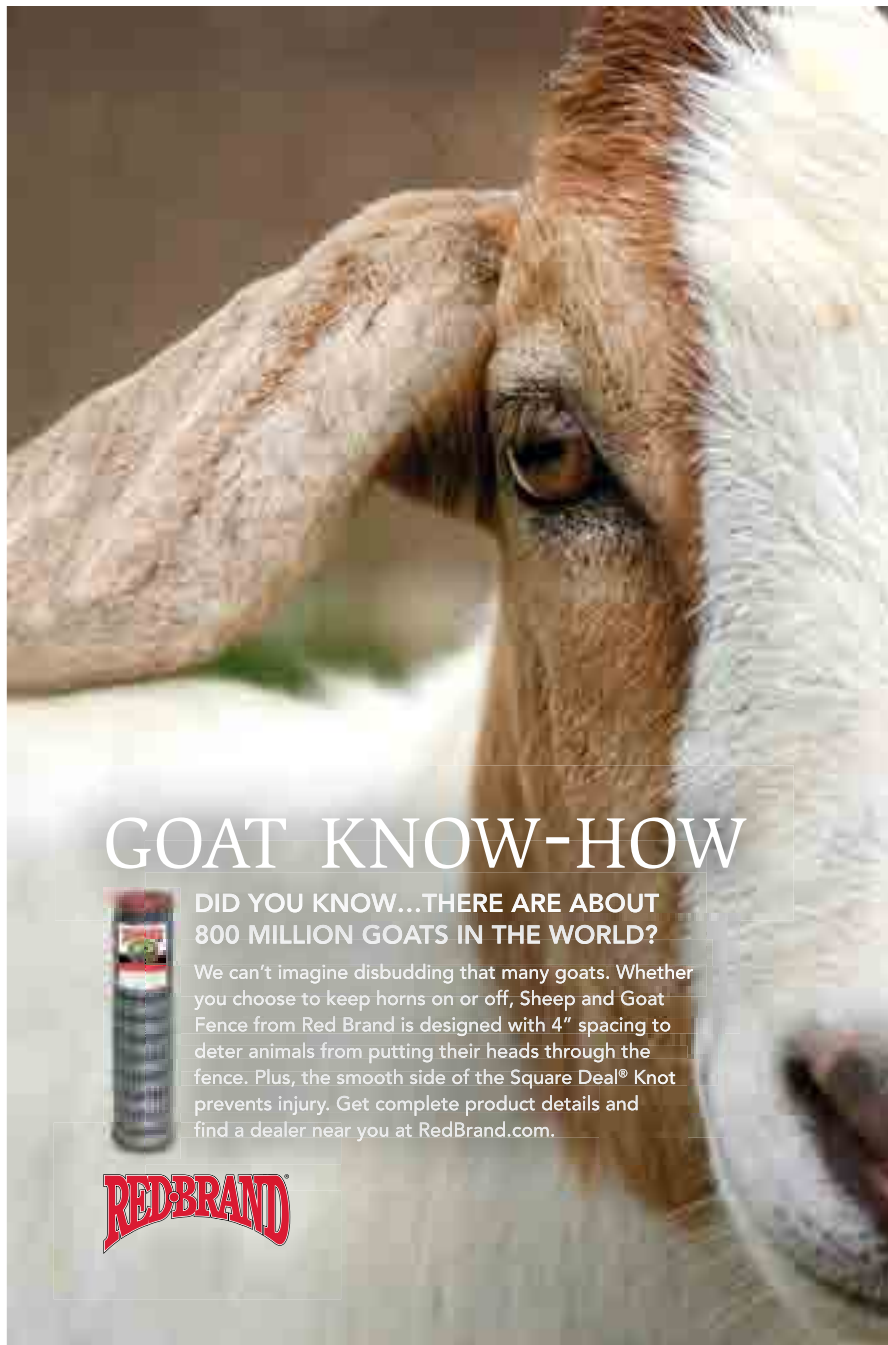
me through the wringer, but I had to respect the little guy for all that he had been through.

I suppose we had been fortunate none of our animals had escaped before Piggy Smalls. This adventure taught us a valuable lesson. Knowing that something terrible could have happened to our little pig made us realize that we cannot be lax when it comes to proper containment of our animals. We are grateful to all our


friends and neighbors who helped us bring Piggy Smalls home. I still haven't decided if pigs are smarter than dogs, but I am pretty sure they are more adventurous. 🐷

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*Piggy Smalls is currently serving three to five months barn confinement. At this point he is still considered a flight risk. A trip to the veterinarian is forthcoming. He will soon be reunited with his pasture mates pending completion of a pig-proof fence. Justin Thaxton writes to us from West Virginia.*




## GOAT KNOW-HOW



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# Rethinking Rural Retirement

Sitting still is...boring?



BY MIKE  
DISHNOW  
WISCONSIN

**P**ERIODICALLY REDEFINING ONESELF throughout the life cycle will maximize life's joys and minimize life's inevitable sorrows.

Life is to be lived, not to simply be experienced. It is not enough to ride the waves. You must raise the anchor and unfurl the sails.

Nowhere is this more obvious than during life's sunset years, those golden years of retirement and leisure. So long in coming, such longing for so long. Upon us now, "Oh, what do I do?"

As I hear so often in my rural environs, "You can only hunt and fish so much." Travel is expensive and often out of reach for many. In any case, suitcase living's highs fade, as time follows time, on Earth's roads and routes.

## HERE ARE 10 TIPS THAT I HAVE FOUND TO BE USEFUL:

- Take inventory of the skills gained over the years.
- Now, think outside the box. Not only from a

practical sense, but geographically and culturally, too.

- Are you bilingual? Yes, your quest has just become much easier. If not, choose a language and begin walking the path.
- Volunteer to go abroad and teach the skills learned over a lifetime of earning a living at home. Is your language in demand in a foreign land? Maybe you were meant to be a teacher in later years. Native language speakers are in demand around the world.
- English teachers are in high demand in many Asian countries. Not all positions require a teaching certificate

Retirement is like a gem to be polished gently, or a bottle of fine liquor to be sipped lightly. It is not a masterpiece to be hung above the fireplace to be enjoyed from your favorite chair.

and/or college degree. Some private and business schools may only require you be a native English speaker willing to learn teaching methods.

- Volunteer opportunities abound as well. A smiling face and a willingness to help is often all that is required. These opportunities vary in length from days to weeks to months. Do a Google search for volunteer opportunities domestic and abroad.
- Reclaim the historical role of society's elders. Whether abroad, or within your nation, or near your home, your sage advice and helping hands are valuable.
- Many communities have evening classes for adults.

Read the local offerings to see what types of classes are available. Is there one you might like to enroll in? Do you have a skill or a hobby that you could teach to others?

- Rethink the adage that retirement is a time of leisure to be spent idling away the days. This is not to suggest continuing at a breakneck pace. No, by all means, slow down and smell the flowers. If you have never done so before, learn to pace yourself accordingly. It is one of productivity's best kept secrets and misunderstood tenets.

Retirement is like a gem to be polished gently, or a bottle of fine liquor to be sipped lightly. It is not a masterpiece to be hung above the fireplace to be enjoyed from your favorite chair. ☺

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# Poor Will's COUNTRYSIDE Almanack

Late Autumn and Early Winter of 2016

BY W. L. FELKER

Thus times do  
shift; Each thing  
his turn does hold;  
New things  
succeed as former  
things grow old.

— ROBERT HERRICK

## THE SUN

Daylight Saving Time ends at 2 a.m. on November 6. Set clocks back one hour. Winter solstice occurs at 5:44 a.m. (EST) on December 21, and on December 26, the sun starts its ascent toward June, shifting from a declination of 23 degrees and 26 minutes to 23 degrees and 25 minutes.

## THE MOON OCTOBER - NOVEMBER: THE SECOND SPRING MOON

New moon	Oct 30: 7:12 p.m.
2nd quarter	Nov 7: 2:51 p.m.
3rd quarter (full moon)	Nov 14: 8:52 a.m.
4th quarter	Nov 21: 3:33 a.m.

## NOVEMBER - DECEMBER: THE BEDDING PLANT SEEDING MOON

New moon	Nov 29: 7:18 a.m.
2nd quarter	Dec 7: 4:03 a.m.
3rd quarter (full moon)	Dec 13: 7:06 p.m.
4th quarter	Dec 20: 8:56 p.m.

## DECEMBER: THE TUFTED TITMOUSE MOON

New moon	Dec 29: 1:53 a.m.
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**Lunar Perigee (moon closest to Earth):**  
November 14 and December 12

**Lunar Apogee (moon farthest from Earth):** November 27 and December 25

## THE STARS

By midnight, the Pleiades and Taurus, winter's prophets, are almost directly overhead, Orion fully visible behind them. Regulus, the brightest star of spring, will be just starting to rise along the eastern tree line.

## THE SHOOTING STARS

**November 4-5:** The Taurids (near Taurus)

**November 17-18:** The Leonids (in Leo)

**December 7-17:** The Geminids (in Gemini)

**December 21-22:** The Ursids (near the Big Dipper)

## THE PLANETS

Venus is the evening star throughout November and December, sharing that role with Mars. Jupiter is the morning

star. In late November, Saturn disappears from the evening sky, reappearing in the morning in the last week of December.

## A CALENDAR OF HOLIDAYS AND SPECIAL OCCASIONS FOR FARMERS, RANCHERS AND HOMESTEADERS

**November 7:** Ecuadorian Independence Day

**November 24:** Thanksgiving

**December 12:** Muhammad's Birthday (Mawlid Al-Nabi) for Suni Muslims

**December 17:** Muhammad's Birthday (Mawlid Al-Nabi); Shia Muslims

**December 24, 2016 to January 1, 2017:** Hanukkah (Jewish Festival of Lights)

**December 25:** Christmas

## METEOROLOGY

Cold waves usually cross the Mississippi River on or about the following dates: November 2, 6, 11, 16, 20, 24 and 28; December 2, 8, 15, 20, 25 and 29. If strong storms occur this month, weather patterns suggest that they will happen during the following periods: November 2-5, 14-16 and November 22-27; December 13, 24-26, 31-January 1.

It is probable that new moons on October 30, November 29 and December 29, as well as full moons on November 14 and December 13 will bring stronger-than-average storms to the United States and Canada. Lunar perigee on November 14 and December 12 will strengthen the effects of the full moon.

## THE ALMANACK DAYBOOK NOVEMBER

1. Early bedding plant seeding for 2017 starts at new moon time (now). This is the week to prepare seeds and flats for May flower sales.
2. Under the dark, waxing moon, transplant perennials, shrubs and trees. Put in trees for summer shade and cash crops (a few years from now) during chilly, wet November and December afternoons.
3. Move the last of your gourd crop to market.
4. Paperwhite and amaryllis bulbs should be started now for holiday blooms.
5. Get your orchids ready for December sales.
6. Daylight Saving Time ends today at 2:00 a.m. The number of accidents often increases with the sudden change in sunset time.
7. Use lower grade supplements for your livestock early in November, gradually increasing nutrient value and quantity throughout the winter.
8. Add hand-made ornaments and other crafts to your stand at the farmers markets.
9. Hanukkah and Christmas in the last week of December offer opportunities to sell lambs and kids.
10. Plan for the Christmas tree harvest.
11. Christmas cacti, dried flower arrangements, grapevine wreaths, grasses, and forcing bulbs should sell briskly in the city as the holidays approach.
12. The cloudiest times of the year in most of the country come between November 6 and February 22, and less sun means slow drying for wet hay.
13. Market your poinsettia crop this week this week.
14. Full moon and lunar perigee today increase the likelihood of storms and bitter cold. Also, livestock, friends and family members may be harder to handle.
15. Wind speed and cloud cover reach winter levels.
16. Find and sell mistletoe once the leaves are down
17. Prepare to meet the holiday demand for honey.
18. Fertilize trees and shrubs after leaves have fallen.
19. The weak moon this week is expected to soften the cold fronts that arrive around Thanksgiving.
20. Market well-budded Christmas cacti right after Thanksgiving.
21. Cool weather pastures may not produce the kind of nutrition you need for your livestock, but introduce grain mix slowly.
22. Ten to 15 goats per acre is fine for summer. You may want to cut the numbers back as late autumn deepens.

23. Seed more bedding plants at new moon, the 29th.
24. Below-zero temperatures now become possible along and above the 40th Parallel.
25. Do late shearing, trim hair on goats, slaughter livestock, give vaccinations, treat for internal and external parasites under the dark moon.
26. Grazing ordinarily comes to a close in northern pastures as November ends.
27. The last important high-pressure system of November arrives around the 28th, preceded by rain or snow three years out of four.
28. Lunar apogee on the 27th should counter the negative effects of today's new moon.
29. Rheumatism in humans and beasts increases during the cold and damp weather of winter, especially at full and new moon times. For some relief, try a tablespoonful of paprika and one of molasses per day.

## DECEMBER

1. Small pots of herbs, attractively wrapped, complement your marketing efforts.
2. Cull livestock after pasture season ends.
3. Plan for the Hothouse Lamb marketing season that begins near Christmas.
4. When air comes in contact with fermented and pickled silage, mold forms on it.
5. Set up water warmers for pregnant livestock.
6. Check for harmful moisture condensation within your beehives.
7. Order your pasture seeds and schedule your pasture frost seeding for January and February.
8. Early winter, a three-week season that puts a definite end to the floral and pasture year in northern states, typically starts today and lasts until even colder conditions move in around New Year's day.
9. Consider heating stalls up to about 40 degrees at kidding and lambing time. Adequate heat is sometimes easier to provide than effective care when a newborn has been frozen.
10. Continue working on your intensive rotational grazing for next year, separating enough paddocks so that pasture can have a chance to grow back in a sequential fashion.
11. Mark for culling ewes and does that failed to rear their October and November offspring.
12. Heavy December snows may contribute to an increase in coyote attacks, since the snow may limit the number of mice they can catch.
13. Muslim holidays in mid-December may help you market kids and lambs.
14. A two-week period of relative calm before the turbulence of deep winter, sometimes called the Halcyon Days, begins today.
15. December lambs and kids may arrive during the moon's third quarter (the 13th through the 19th) even if they are not scheduled to be born at that time. Lunar lore suggests that more creatures give birth during the moon's third quarter than in any other quarter.

16. Don't forget to fatten weaner calves and piglets (and your pocketbook) with your extra goat milk this winter.
17. Place an entrance reducer in your hives to keep mice from coming in.
18. Save your best quality feed supplies for the colder months and the months closest to birthing time.
19. With proper planning, a smooth transition can be made between weaning kids and lambs, selling kids and lambs for the Easter Market, and the purchase of feeder animals like calves and piglets — a transition that might make November and December more profitable.
20. The December 20 high-pressure wave is the first of two "white-Christmas" fronts. Weak lunar position, however, may weaken that weather system this year.
21. In most states, average high temperatures fluctuate only about two to three degrees between December 21 and the approach of early spring in the third week of February.
22. If you are going to fatten piglets with your goat milk, you might want to have two pigs instead of just one. They like the company.
23. It's time to keep the Christmas greens away from pregnant ewes and does.
24. As you schedule estimated due dates for each of your pregnant animals, also do an estimated time of day for each, basing your assessment on the time of a doe or ewe's previous births or the time of day the animal's mother gave birth.
25. Lunar apogee today is expected to soften the Christmas cold front.
26. If you are going to show this month's newborn animals next year, it may make sense to feed them by hand now.
27. Winter generally brings the highest prices for goat milk; plan accordingly.
28. In most years, only 11 more severe cold fronts (seven in January, four in February) remain until the arrival of earliest spring.
29. The moon is new today, once again favoring the seeding of bedding plants for flowers and for March setting of cabbages, kale and collards.
30. Spring begins in Florida now, reaches the Deep South in February, the Carolinas in March, the Lower Midwest in April, the northern states in May.
31. The front that arrives at the end of the year is typically wet and windy.

## LUNAR FEEDING PATTERNS FOR PEOPLE AND BEASTS OLD

Best hunting and fishing should occur with the moon above the earth. The second-best time occurs with the moon below the earth.

<b>DATE:</b>	<b>ABOVE; BELOW</b>
<b>November 1 – 6:</b>	Afternoons; Midnight to Dawn
<b>November 7 – 13:</b>	Evenings; Mornings
<b>November 14 – 20:</b>	Midnight to Dawn; Afternoons
<b>November 21 – 30:</b>	Mornings; Evenings
<b>December 1 – 6:</b>	Afternoons; Midnight to Dawn
<b>December 7 – 12:</b>	Evenings; Mornings

<b>December 13 – 19:</b>	Midnight to Dawn; Afternoons
<b>December 20 – 29:</b>	Mornings; Evenings
<b>December 30 – 31:</b>	Afternoons; Midnight to Dawn

## WINNERS OF THE SEPTEMBER-OCTOBER SCKRAMBLER SWEEPSTAKES

Prizes were promised to the 2nd, the 12th, the 27th, the 65th and the 139th persons who returned the correct answers by my deadline to COUNTRYSIDE. Out of the more than 80 respondents, Dorothy Fairbanks of Deer River, Minnesota, was the 2nd; Deborah Wolf of Delphi, Indiana, was the 12th; Leilani Peterson of Englewood, Colorado was the 27th; and Shelia Karen Breeding of Boston, Virginia was the 65th.

## ANSWERS TO THE SEPTEMBER-OCTOBER SCKRAMBLER

SEOUH	HOUSE
HOEM	HOME
DHSE	SHED
NARB	BARN
TOUGNIBLIUD	OUTBUILDING
SEOUHTOU	OUTHOUSE
VYRPI	PRIVY
SPTCIE SSTMYE	SEPTIC SYSTEM
UINGBMPL	PLUMBING
EIYILCTRCT	ELECTRICITY
ACEFURN	FURNACE
SUINNIOTAL	INSULATION
EFRI OWOD	FIRE WOOD
LCOA	COAL
LFUE LIO	FUEL OIL
AUANTRL SGA	NATURAL GAS
RMSTO WWNDSOI	STORM WINDOWS
TSORM ODORS	STORM DOORS
RETHEAW OROPGINF	WEATHER PROOFING
KINGLCAU	CAULKING

## THE NOVEMBER-DECEMBER SCKRAMBLER

The homesteader who is able to market to people who keep the following seasons, feast days and holidays should definitely be able to increase her/his income!

ESECHIN WEN REAY	
IDRAM SARG	
MANRO AETSRE	
OOORTHDX AESTRE	
PSSVREOA	MARANAD
MMEORIAL YAD	DI AL RITIF
AOLBR AYD	RAHTSEV OONM
SEFITLAV	VANARATRI
LA JAHIRA	ORSH HHHSNAAA
ARUSHA	GIVTHANKSING
KKHHANUA	TMASCHSIR

If you are the 3rd, the 16th, the 34th or the 69th person to return your correct Sckrambler solutions to Poor Will, P.O. Box 431, Yellow Springs, OH 45387, you will win \$5. There should be no typos in this puzzle, and no typo prize will be awarded.

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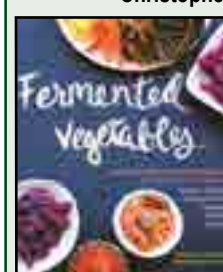


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ITEM 61611 46092 shown

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ITEM 61256/61889 60813 shown

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ITEM 5889/62281/61637 shown

**\$12.99** ~~\$19.99~~ **SAVE 78%** comp at \$59.97

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**WOW SUPER COUPON**

Customer Rating **★★★★★**

**CENTRAL PNEUMATIC 3 GALLON, 100 PSI OILLESS PANCAKE AIR COMPRESSOR**

ITEM 95275 shown 60637/61615

**SAVE 49%**

~~\$49.99~~ **\$59.99** comp at \$98.62

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**900 PEAK/700 RUNNING WATTS 2 HP (63 CC) 2 CYCLE GAS RECREATIONAL GENERATOR**

Customer Rating **★★★★★**

**SAVE \$73**

**\$89.99** ~~\$119.99~~ comp at \$163.06

ITEM 60338 69381 shown

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**12 VOLT, 10/2/50 AMP BATTERY CHARGER/ENGINE STARTER**

Customer Rating **★★★★★**

**SAVE 57%**

**\$29.99** ~~\$49.99~~ comp at \$69.99

ITEM 60581 60653 shown

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**RAPID PUMP® 1.5 TON ALUMINUM RACING JACK**

Customer Rating **★★★★★**

**SAVE \$60**

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ITEM 69252 62160/62496 62516/68053 60659 shown

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**4-1/2" ANGLE GRINDER**

Customer Rating **★★★★★**

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ITEM 95578 69645 60625 shown

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**SAVE 70%**

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ITEM 63282/69043/42304 shown

ITEM 63171/42305/69044

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**MECHANIC'S SHOP TOWELS PACK OF 50**

ITEM 46163 shown 69649/61878 61837

**SAVE 47%**

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Customer Rating **★★★★★**

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ITEM 62463/61624/61229 shown

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**6.5 HP (212 CC) OHV HORIZONTAL SHAFT GAS ENGINES**

Customer Rating **★★★★★**

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Customer Rating **★★★★★**

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ITEM 69397/61427 63308/95272 shown

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## MINIATURE CATTLE

### Indiana

Martin Graver, 2502 South 625 West, South Whitley, IN 46787. 260-723-4853. Miniature Jerseys.

### Pennsylvania

WELSH MOUNTAIN FARM, Amos T. Ebersol, 590 Red Hill Rd., Narvon, PA 17555. 717-768-3652. Mini Jersey Cattle.

## MINIATURE JERSEY CATTLE

### Pennsylvania

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- **Peace of Mind** - Keeping the fire outside eliminates the dangers and mess associated with traditional indoor wood stoves.
- **Save Money** - Wood is a renewable, inexpensive and often free energy source.



## Staying Connected

Stay connected to the furnace that saves you money on your heating bills from almost anywhere in the world. Adding the FireStar XP wi-fi module keeps you in constant contact with your Central Boiler furnace if you're away. The FireStar XP wi-fi module can even send you reminders such as when to add wood.

View operational information and receive text alerts on your smartphone.

*Phone not included. Requires data plan, wireless router and internet to enable remote access.*

**FIRE STAR™ XP**  
with E-Link Technology



The optional FireStar XP is easy to install and configure.

*Wireless outdoor version shown. Also available as desktop or wall-mount version.*

**CLASSIC  
EDGE™**

EPA-Certified Outdoor  
Wood Furnaces

AVAILABLE FROM YOUR LOCAL CENTRAL BOILER DEALER

Visit [CentralBoiler.com](http://CentralBoiler.com) or call 800-248-4681

