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COUNTRYSIDE

& Small Stock Journal

Volume 100 • Number 3
MAY/JUNE 2016

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Capture Your Countryside...

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FEATURED PHOTO

We were doing morning devotions when we looked up to see our farm family chiming in. Give thanks indeed! —Jeanelle Shields

Getting ready for spring planting at Longsummer Farm in South Texas. —Monica Gaulke, Texas

Looks like my Nubian goat, Lily, is telling Isabella something humorous! —Anna Dean, Illinois

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@countrysidemag.com with "Capture Your Countryside" in the subject line, be sure to include your name, mailing address, phone number and a brief description. Or mail photo(s), including your name, mailing address, phone number and a brief description, to "Capture Your Countryside," 145 Industrial Drive, Medford, WI 54451.

Stubbs is always very curious and has a great personality. Here he is just looking over the ranch making sure everything is okay.—Karen Hoard, Nevada

This is my precious bull calf, Bullwinkle. He loves cookies and follows me around like a puppy.—Liz Meyer, Wisconsin

Our backyard flowers.—Bruce Hill, Maine

Some of our guineas found our hanging bird feeder off of our back deck.—Pam Waters, Arizona

Our special little gal, Bailey, out checking the fence lines. Have to keep those Texas Longhorns in!—Toni Wirta, Minnesota

This is my Aunt Eleanor visiting my garden. The greatest aunt a guy could wish for! At 93 years old, she freezes or cans my entire garden!—Kevin Brann, Maine

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A family on the El Monte Federal Subsistence Homestead in California in 1936. See more photos from that era courtesy of the New York Public Library on page 102.

A HOME FREEZE DRYER

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Water's for Fighting

RYAN SLABAUGH
Editor,
COUNTRYSIDE

As I write this, there are hundreds of thousands of residents in Flint, Michigan, who have gone months without clean, safe drinking water. Bottled water is being trucked in as a short-term solution, and residents are storming the gates of state politicians who were in charge of their water supply. The long-term effects are unknown, and most likely immeasurable.

Flint is just one example. Communities all across America are struggling to find safe sources of drinking water, and in the American West, water is just in short supply.

It's a lesson we learn: Things fail, no matter how buttoned-up of an appearance they project on the outside. Our water system is designed to disassociate the user from the source, not unlike our food system, and Flint is just a small reminder that, to be truly safe, we need to think beyond the seemingly comfy confines of civilization. At the least, we need to encourage our civilization to reattach us to our sources of life, and prepare for when the bubble pops.

One of the tenets of COUNTRYSIDE is that we do not take things like water and food for granted; nor do we panic unnecessarily and hoard when it's inappropriate. But in the case of water, knowing how you will have a water source in case of an emergency is just good sense. Recently, I spoke with a company in Seattle, Washington, called Grail, which manufactures water filters that can provide one pint of clean water in 20 seconds. Bluntly put, if people had them in Flint, the issues would have been far smaller—but preparation costs money. In my home state of Colorado, filters are the only option, as we have yet to legalize private rainwater collection—even rain barrels are illegal.

Why bring up water, now? It's important for everyone, and this ethic of natural resource conservation is especially important for our children. Which brings us to our cover story, which gives tips about how to engage our kids in the Earth. Never has it been more important. With climate change affecting billions, a wildfire of threats in our food supply, and a disassociated populace, their challenges are not small. Teaching them about what is real, what is valuable, and how to be prepared for things to go wrong used to be part of our basic education. It's time to get back to those basics. Teach food, water and shelter. The future, literally, depends on it.

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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Editorial office: csyeditorial@tds.net

Customer service/book orders: csymag@tds.net

www.countrysidemag.com

COUNTRYSIDE & Small Stock Journal

Volume 100 • Number 3
May/June 2016

COUNTRYSIDE & SMALL STOCK JOURNAL
Includes Small Stock Magazine Founded 1917 by Wallace Blair and Countryside Magazine Founded 1969 by Jd Belanger

Send your manuscript to: COUNTRYSIDE Editorial (or csyeditorial@tds.net). The editors reserve the right to select and edit letters/articles/photos to be printed. The opinions and advice given here are not necessarily those of the Publisher.

COUNTRYSIDE & SMALL STOCK JOURNAL (ISSN 8750-7595; USPS 498-940) is published bi-monthly by Countryside Publications, 145 Industrial Dr., Medford, WI 54451. Periodicals postage paid at Medford, WI and additional mailing offices.

Editorial office: 145 Industrial Dr., Medford, WI 54451, 715-785-7979, editor@countrysidemag.com.
Subscriptions (U.S. funds): $18 per year; two years, $30: Countryside Subscriptions, 145 Industrial Dr., Medford, WI 54451.

POSTMASTER: Send all UAA to CFS. (See DMM 707.4.12.5); NON-POSTAL AND MILITARY FACILITIES: send address corrections to Countryside Subscriptions, 145 Industrial Dr., Medford, WI 54451.

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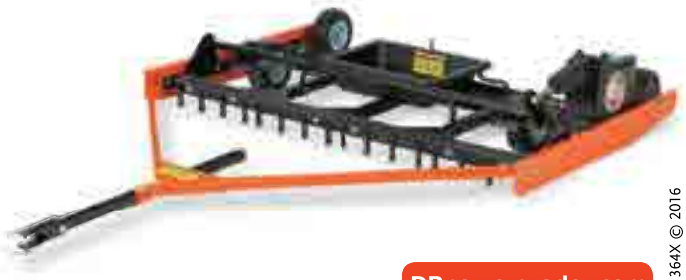

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Country Conversation & Feedback

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Responses to a Cranberry Chutney Request

In a recent issue, Dee Martin from Brooklyn Park, Maryland, submitted a Countryside Cookbook (see new recipes on page 42) recipe and a request: does anyone have a good, old-fashioned cranberry chutney recipe? The ingredients are listed as water, sugar, cranberries, corn syrup, distilled vinegar, golden raisins, orange peel, ginger, pectin salt, onion powder, dried red peppers, spice. Countryside readers responded. Here are a few:

FROM ANN MCNEAL IN WISCONSIN:

Countryside: In the recent issue, a person asked for this recipe. I found it in an old *Ideals Quick and Delicious Gourmet Cookbook* out of Milwaukee, Wisconsin.

1 lb. cranberries, washed and dried
1 ½ cups of sugar
1 ½ cups of water
1 orange unpeeled, cut up
½ onion, minced
1 cup white or golden raisins
1 apple, diced
½ cup chopped celery
½ cup chopped walnuts
1 teaspoon ground ginger

In a 3-quart saucepan, bring cranberries, sugar, water and orange to a boil. Add onions and raisins and simmer for 10 minutes. Add apple, celery, walnuts and ginger and simmer another 5 minutes. Chill in a glass jar.

FROM RICHARD JERGE IN SANFORD, FLORIDA:

This is the version I found:

1 cup light seedless raisins
1 8 oz. package
pitted dates, chopped
2 16 oz. cans whole cranberry sauce
¼ cup sugar
1/8 teaspoon salt
¼ teaspoon ground ginger
¼ teaspoon ground cinnamon
¼ teaspoon ground all spice
1/8 teaspoon ground cloves
¼ cup apple cider vinegar

Maybe you could experiment by adding any missing ingredients and allow them to be stored in a jar with a lid.

FROM ALICIA, NEAR WINSTON-SALEM, NORTH CAROLINA:

Countryside: My name is Alicia and I saw your request. There are two recipes at www.myrecipes.com. One is a chutney and the other a cranberry sauce. Maybe you could adapt the sauce recipe to include any ingredients missing? Thanks for the apple pie filling recipe! I'll be using it this fall when we process five to seven bushels.

My $325 Cat Story

Countryside: First of all, I want to express how much I love reading Countryside, along with so many other people who express their enjoyment of sharing common country experiences.

Not having time to read my magazines in a more timely fashion, I have fallen behind by two years. Recently I was reading the March/April 2014 issue on a Sunday morning in December 2015, sitting curled on the couch behind my neck was my youngest cat I named "Tuff." I just finished reading when a light bulb went on in my head and it dawned on me that I, too, had a story to share about my cat.

I grew up on a farm in rural Wisconsin where my dad milked 20 to 30 cows and grew enough feed for our own animals, which also included some chickens and a few pigs once in a while. My mother's job was helping Dad on the farm, and we ate the bounty from the garden, cows and chickens. Sometimes we had a dog, and sometimes not, but we always had stray cats that wandered in and out of the barn. They always seem to know their place, or leave on their own if they couldn't get along. My parents were kind to animals; fed the stray cats

extra milk, and I guess that put the "Welcome" sign out to the critters.

I grew up, moved away, and 15 years later came back to the area and now live about five miles from where I grew up, and about five miles from the nearest town. I have my own little chicken flock (normally around 12), a rescue dog two rescue cats, and raise a garden that provides enough vegetables and herbs for the household. Some people think country living is "boring," but some of us, especially those raised on a farm, think that this is the absolute best way to spend a day.

Now to my cat story, which starts on June 29, 2015. I have an Australian Shepherd/Blue Heeler mix dog named Dexter. At night he sleeps on the floor beside my bed. There is a window about his eye level at that same spot. Many moonlit nights he looks out to see deer or rabbits in the yard and will bark or growl at all times of the early morn to let me know there is action in close proximity. (At which time he gets hollered at for waking me out of a sound sleep!)

In the early morning hours of the 29th, he got up and was barking at the front door. I got up to look out and saw nothing, scolded the dog and went back to bed. The next night, the same thing. This time I let him outside and he tore out the front door barking, running in the dark toward who-knows-what! This is typical of his breed—so alert and protective. I went onto the front deck to look, but nothing, and then I hear this faint meowing. The dog comes back. I call to the cat but it quits meowing, so I go back to bed.

The next morning I took my coffee out on the deck and was enjoying the sunshine. Dexter was doing his dog duties, sniffing around the yard, and I heard the meowing again. Finally a gray and white kitten came out from the weeds, but it was wild and wouldn't let me close to it. I figured it got separated from its mama, so I put some cat food in a dish by the tree. I saw it go to the dish, sniff at it, but then went back into the weeds. It was very small, so I was thinking it wasn't weaned yet.

I wondered how it came to be here, so far from any other houses. Then I remembered seeing an adult cat, apparently hit by a car, about a quarter-mile down the road. The cat had been laying there for about a week.

I set out a small animal live trap with a dish of milk, hoping to capture it, but the rest of the day was uneventful. The next day the kitten actually came up the steps of the deck, meowing in that pitiful "help me" manner. I figured it was now desperate for food, so I kept the dog in the house and went outside with a bowl of milk. The kitten crept up to the dish and drank a little. It was then I saw the middle of his tail was all bloody and dragging in the dirt with maggots on it, his fur was matted, his backbone stuck out—he looked in rough shape. He didn't trust me and cautiously crept back down the steps and under the trailer house skirting. Oh great, I thought! After half an hour of saying "Here, kitty," I switched to "Meow, meow," and that kitten came out of his hiding place and walked right up to me! Amazingly I easily picked him up and put him in the puppy kennel. It was the perfect fit—large enough to move around in with room for food and water.

I mixed some vinegar, water and honey solution to spray on his tail wound. Vinegar and honey are anti-bacterial and that was all I had on hand, and it was too late to call the vet.

The next morning I dreaded to check on the kitten, as I had no idea if I would find him alive or dead. I called the vet and told him about my visitor, and this cat needed nursing, or an end to his misery—I wanted an expert's advice and opinion. When I took the kitten in, the vet proceeded to take him to the nice big stainless steel sink, and holding the kitten by the nape of his neck, proceeded to rinse off those horrible maggots and flies. Once he could see what he was working with, he took the kitten to the examination table. "Is there hope or not?" I asked him. "Doc" said he would see what he could do—he had seen animals come out of some pretty bad situations.

Doc gave the kitten a sedative and because of his weight—3 ½ pounds—figured he was 3 or 4 months old. He ended up shaving off the fur all the way up to his neck and decided he could not save the tail, and cut off about one inch and stitched him up. After about 2 ½ hours of medical attention, Doc seemed satisfied he had done all he could, and the nurse brought in a nice clean towel for me to take him home in. Antibiotics and a can of tuna were given to me by the receptionist, who said he should eat ample amounts of protein. I hated to ask about the bill, but when I did, Doc and the receptionist looked at each other and I got the "Good Samaritan" deal, charging me only for the cost of antibiotics, anesthesia and thread.

They told me the kitten would be quite groggy for the next few hours, and as he woke up I should keep an eye on him. He would be cold because of the haircut, and I needed to administer the antibiotic every six hours with an eyedropper, and try to get him to eat and drink. (I recently retired, so I didn't really have any pressing business.)

I hadn't named him yet, because if he died I did not want that attachment. I picked him up on his little blanket to hold him to administer the antibiotic, and since he wasn't used to drinking yet, I used the eyedropper to give him some warm milk. That first night I even got up at 2 a.m. to hold him and give him some nourishment, and he looked at me and started purring! I think he was so glad not to have those maggots eating him alive!

I kept him in the kennel in my office, and it wasn't very long and he seemed to be feeling a lot bet-

ter and trusting us all (the dog and two big cats). Now that I felt he was going to survive, I knew that his name would be "Tuff."

So now when people ask about my nine-pound kitten that has no tail, I tell them the tale of my $325 cat!

Paula Knutson
Wisconsin

Returning to COUNTRYSIDE

COUNTRYSIDE: Please forgive my bluntness in advance. My husband and I gave up on COUNTRYSIDE (as well as other homesteading magazines) years back. With COUNTRYSIDE, it was when people began to write/argue about how to hang laundry. Sometimes, it seems better to agree than disagree.

Today at the market, I picked up this issue (March/April), and was unable to put it down (only long enough to pay for it). The entire issue is inspiring, fun, educational—so full of great stuff.

We have been homesteading for so long and to be able to pick up such a treasure is wonderful. The Middle East sweets, Monsanto straw info, climber and crawler plants were a part of a wonderful mix across the board. I've barely been able to put a dent into it, as sharing does not always bode well.

Please keep up the great format.

Diane Hill
Vermont

Fuzzball and the Rat

COUNTRYSIDE: Life on a farm is generally pretty straightforward—keep the critters you want to keep alive (the livestock), and dispatch the critters that you don't want to keep (the pests). Freeloading pests are good at what they do, but we as humans—"Masters of our domains," as it were—think we alone stand in between the freeloaders and their free loads. Not always so.

I would usually carry a .22 rifle along on my morning and evening chores, on the off chance I'd catch a pest coming or going from his or her destination. And since the domesticated freeloaders—the ubiquitous farm cats—knew that if I scored a casualty, sometimes nothing more than a starling, crow or pigeon, they'd get a free meal, I'd almost always had some company.

Fuzzball, a small, yet quite ferocious dusty Calico cat, was almost always near me, and would often chase other cats away from "her" hunts with me. Yes, cats have a hierarchy, and she pretty much ran it. I would often give her a boost by kicking a bale of hay lying on the floor of the barn to see if there were any mice hiding under it, and watch the grace and fluid power of a five-pound cat launching herself like a furry missile at any mouse foolish enough to show itself. Mutual of Omaha on a miniature scale, minus Jim tackling the lion.

One frosty morning in late October I was walking through the lower level of our barn on my way to feed the livestock and I kicked a pile of bales to see if any critters would show. A large Norway rat shot out from underneath the nearest bale and ran to the back wall. We mostly have grey rats in the country, but the larger, bolder Norways didn't get the memo.

I took one quick shot at him and missed (even if I'd been ready, it's a tough shot even at close range), and he flattened himself against the concrete blocks of the back wall. I couldn't risk taking another shot because the bullet would ricochet—where was anyone's guess—and the wall was a retaining wall set into a hill, so any damage to it would lead to worse things later.

I got a good look at the rat then. He was more than a foot long from nose to tail, tan and sleek, and looked to weigh at least two pounds, a bruiser in the rat world, and likely a breeder. I really needed to get rid of this rat before the colony (there's always a colony if Norways are around) holed up for the winter and made a lot of baby rats for spring. Barns are warm, dry and quiet with plenty of food and hiding places, and an active colony would do some serious damage to the wellbeing of the livestock living there.

The rat was still crouched against the wall, giving himself a face-wash with his "little-old-man hands" paws, and I was leaning against a support pole, waiting for him to move. There was no cover for about 15 feet either way down the wall, and if I didn't move (rats have bad distance vision), he might try to get back to his hay bales, thinking I'd left.

Standoff at the OK Corral. It was a good 15 minutes that I stood there, looking at the rat who was convinced, just like I was, that if he didn't move, he was invisible. A grey rat would have bailed for the exit a long time ago, but Norways know how to disappear.

Then Fuzz got tired of waiting. She exploded from her perch on top of the second row of bales and arched the dozen or so feet to land on top of the rat. I couldn't watch. I had seen another rat—maybe this same one—kill a fairly sturdy tomcat not three weeks before, and I couldn't get a shot off before he got under a feed trough.

And I couldn't help Fuzz now for fear of either shooting her or clubbing her with the shovel hung on the wall to my left.

There was squealing and screaming and thumping and hissing and howling from the roiling wad of fur that was twisting and corkscrewing against the back wall of the barn.

I didn't have the heart to watch my cat getting herself killed, and the livestock still needed their breakfast, so I hung the rifle by its shoulder strap on a nail on the wall next to the pole, climbed the steps to the hayloft, and busied myself pulling bales apart to toss down to the cows at the other end of the barn, then filling the water trough for the geese in the adjacent building at upper-floor ground level. By the time I was done the ruckus was over, so I walked back through the hayloft and down the steps to the ground floor.

There was a disheveled pile of fur a few feet from where Fuzz had attacked the rat, and somebody was still breathing, but I couldn't tell who from that angle. I retrieved my rifle and walked to the heap, and to my surprise and relief, it was Fuzz who was still breath-

ing. She had the rat firmly in the "bite-hug-kick" thing kittens usually do on your arm. Now I knew what that adorable behavior was actually for.

I reached down to lift the rat and carry it to the front porch of the house—Fuzz had left many "presents" there and I figured this would be next anyway. But she growled and hissed around her teeth still clenched on the rat's throat, and glared at me from her golden, sparkling, deep eyes. This is not your prize, she was saying very clearly.

"Masters of our domains," indeed. We're only supervisors at best.

Warren Bronson
Minnesota

Violence in the Hen House

Countryside: I find it funny that once in a while the animal world seems to match our complicated human world in terms of psychological behavior. Take the following case as an example.

One sister has recently started a backyard farm. She made a little chicken coop and soon after five Silkies (ornamental Bantams) took up residence. These five lead a charmed and happy life. They get along well with one another and spend their days doing what young chickens do—primarily eating, growing, playing and sleeping. Another sister with a larger farm possessed a single Silkie hen. She was gentle and a fantastic mother. In fact, she had successfully set and hatched duck eggs placed beneath her and brooded them as only a proud mother can. Recently her life had become somewhat perilous with the arrival of a large number of young hens. They being young, smug and emboldened by their, "I just started laying eggs, so I'm amazing" attitude had been harassing the older hen. They had chased her about the yard, picked at her feathers and generally relegated her to spending much of her time hiding in one of the nest boxes.

Putting their heads together, my sisters decided that perhaps it would be better if the old Silkie hen retired to the backyard farm and joined some young chickens of the same breed. After all, in this idealistic setting, she could retire to a life of leisure and carefree living. She would be the senior larger chicken, capable of providing guidance and learning to the young backyard flock. So, she was gently boxed up and transported to what should be a poultry utopia.

She was unboxed and gently placed in the coop with the younger chickens. Here begins the part of my tale where the difference between expectations and reality is clearly delineated. Instead of walking to the nearest lounging area and stretching out in the toasty warm artificial sunlight, she went on what can only be described as a reign of terror. She began chasing the younger chickens around and pecking them. One of the young ones, a colorful young rooster, tried to stand up to her. She would have none of that. Utilizing skills she had obviously acquired in her "old neighborhood," she quickly put the young rooster in his place. She was as aggressive as a drill sergeant two seconds after the bus door opens. She chased each of them outside into the yard and there they stayed, shocked at how utopia had suddenly changed. Then she wandered back in beneath the light and sat, watchful of any incursions into her, yes her, new home.

It was humorous in its way, though my sisters were both shocked at the old Silkie's aggressive behavior. For two days she was a feathered terror, and the reactions of the young chickens around her demonstrated that they considered her to be the *only* thing in the world they should fear.

However, the story doesn't end there. Now, four days later, she has come to the conclusion that she needn't be so brutal. She is now sharing the house with the young birds. They all lounge beneath the glow of the artificial sun. During the day she has taken to following them around and learning about her new environment. She looks like a happier and healthier hen. In hindsight her initial behavior could be seen as a fear reaction: new place, new home, new companions. For the first time she could be the big biddy, able to set the terms of her existence. Or perhaps it was a little PTSD.

I've known a few people who have had trouble adjusting after departing a hostile environment for a bucolic, safer existence.

Now that she is adjusting, the setting has once again become utopian. She is happy, and so are the little ones. I don't imagine there will be trouble again until that young rooster finishes growing and his voice changes. If that old biddy thought she had her claws full before, she is about to learn that there is nothing so maladjusted as a teenage male, learning to crow.

Patrick Purcell
Washington

Updates from Pennsylvania

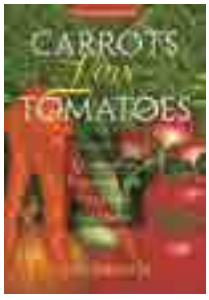
Countryside: Winter has come, with snow on the ground and ice in water buckets. Chores take longer, but we wouldn't trade our life for a diamond jewel! Country living is interesting and children need to grow up in it—it makes many happy childhood memories.

Our friends Rudy and Mary in Smicksburg, Pennsylvania, had a house fire in November 2015. They lost all of their Countryside magazines. A friend gave them some, plus some herb and organic farming books. We were hoping some of you would share your books with them. One of their biggest wishes is to someday meet someone who lives like that hermit Peter Jenkins met while walking across America.

Our friends have two goats that will kid in March and May, a henhouse with eight hens and a rooster. Mary is raising her own chicks the old-fashioned way—with two broody hens. They also have a horse and buggy they drive on the road. They are interested in buying a Welsh pony for their children for Christmas 2016, so if anyone has any information, please write to the Troyer's at 1968 McCormick Rd., Smicksburg, PA 16256. They will be thankful and try to answer any letter they receive about homesteading, raising chickens and goats. Does anyone know about the horses the government gives away? We've read about it in your magazine.

Friends in Pennsylvania

Carrots Love Tomatoes



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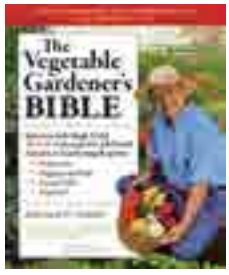

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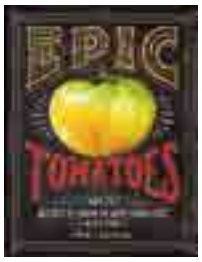
Epic Tomatoes



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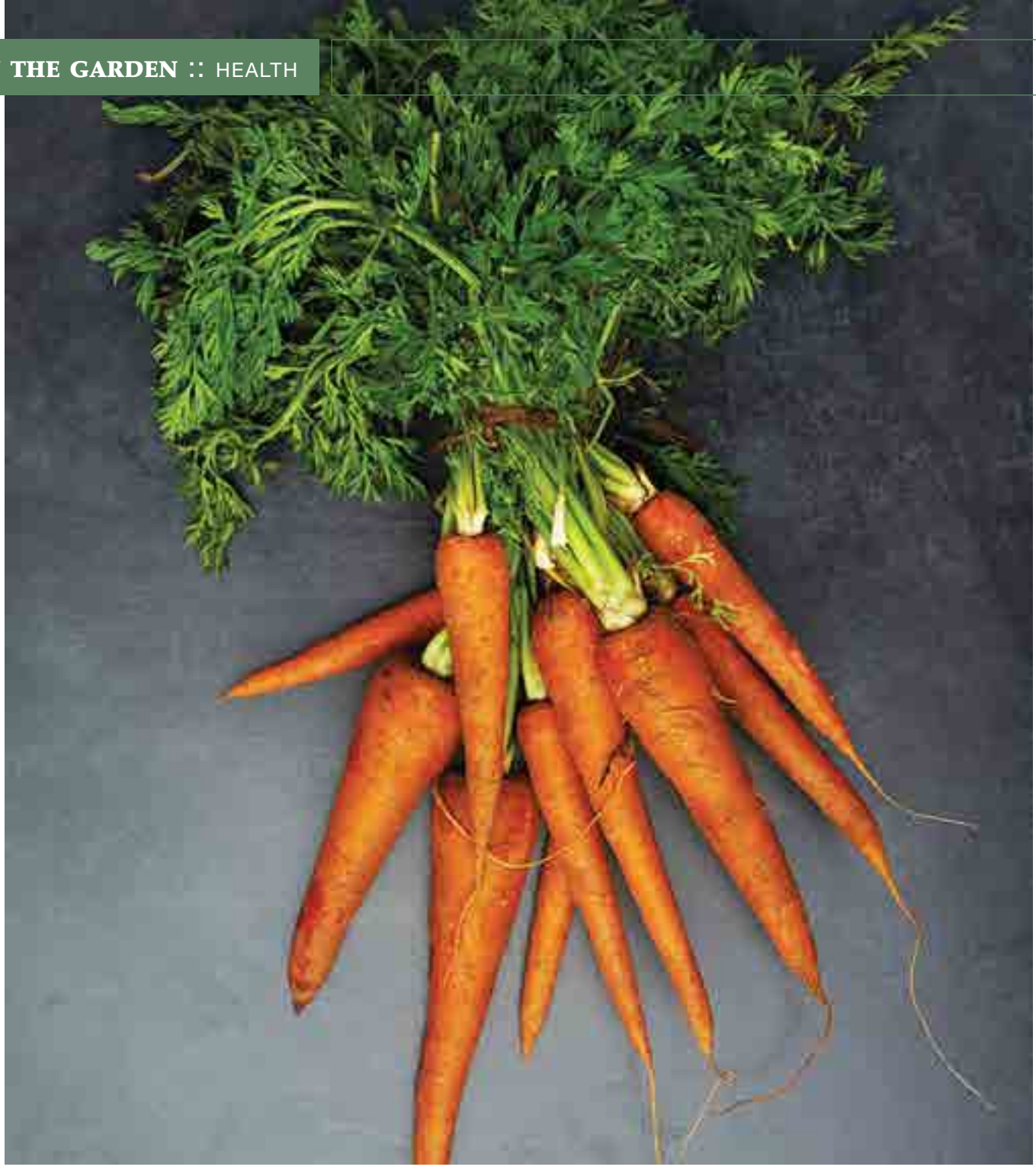


A Prescription for Gardening

BY KAY WOLFE

WHILE RESEARCHING THE LEADING health problems of our day—cancer, strokes, heart disease, diabetes, obesity and dementia—they all have one thing in common: They are all closely related to our diet. According to most experts, the best way to lower your risk for these diseases is to eat more fruits and vegetables and fewer processed foods and meats. Add to that the increased cost of organic foods and you have plenty of reasons to grow and preserve your own healthy foods. But how do you know what you should plant? You really can't go wrong with any vegetable, but some carry more health benefits than others.

If allowed to survive, this grass will produce enough oxygen for two students to breathe for one semester. — Lawn sign, University of Iowa

LET'S GET REAL

The older I get the more I realize the importance of what we eat. It seems the young can get away with poor food choices, but as we age, junk and processed foods can zap our energy, clog our arteries, raise our blood pressure, cause inflammation (including an inflated waist line), and simply make us feel old. Real food does just the opposite. Whole natural foods such as fresh fruits and vegetables provide the antioxidants, enzymes, fiber and nutrition needed to fight all these diseases. We eat for many reasons but the most important one is to feed our cells so our body can heal and renew itself daily. That's why we must eat real food.

Just what is "real" food? Well that's subjective, but my definition is any food in its original state as provided by nature. If you want to eat real food you are going to have to learn to cook from scratch. That is the goal, and even I fail at this goal sometimes, but I strive to get as close to it as possible. What we do occasionally has little effect on our body. It's what we do daily that determines our health. That means if you want to splurge on a Coke and Big Mac once a week, it is not going to make much difference long term any more than eating fresh vegetables once a week is going to make you healthy. Once you begin to grow your own food though, you will come to love the freshness and high quality so much you will not be happy with anything less.

If you are already a gardener, you know that food gathered and cooked the same day far exceeds the taste of anything you can buy that has been shipped across country to your grocery. Besides taste, the nutritional value is affected by time and storage. Few things get better with age, so that produce you harvested is at its peak when you walk out of the garden. With each passing hour or day, you lose a little quality. That's why if we can't consume something shortly after picking, we freeze or can it right away to stop the deterioration.

In order to eat a healthier diet, we need to replace junk and processed foods with real food we raise ourselves. If you are not gardening already, it's time to start the garden you've been planning. If you have a garden, enlarge it so you can meet your needs for an entire year. Find ways to extend the growing season like row covers, and start the seeds indoors, and, of course, utilize preservation methods to store it away. The safest food is organically grown, so be aware of the products used on your plants. Your family will be eating this, so why feed them pesticides, herbicides and fungicides? What you feed your family will have a greater long-term impact on your family's health than anything else you do.

LEAVE A LEGACY

I had never been one to really like anything green. I would skip the salad section at the buffet and I had never eaten broccoli, cauliflower, kale, Swiss chard, spinach and so many other things until I was well into adulthood. I was also obese and had high blood pressure as a result of my food choices, but I couldn't resist the lure of growing such beautiful plants, so I planted an array of vegetables, not sure if I would even eat them. Once they were maturing though, I started searching for recipes and fun ways to prepare them. Low and behold, it turns out I loved them. My taste buds and cravings began to change as I deleted sugar and processed foods from my diet, replacing them with real foods. The momentum continued as I experimented with more and more varieties until I no longer had to wonder what I was going to cook. I just grabbed my basket and to the garden I went.

Sadly, most Americans don't eat the recommended servings of fruits and vegetables. Most kids don't like vegetables except fries, which means we are raising adults who won't eat fruits and vegetables. We must set an example for our children by eating and providing a wide range of produce. It helps if we learn to cook it so it is tasty! Growing your own food though makes it far more appealing. Children who actively participate in the cultivation of their own food are much more likely to consume it and enjoy it.

A wonderful resource for me is a website titled, The World's Healthiest Foods. They have a list of 100 foods we should eat and provide extensive information on each item including nutrition and health benefits. As I began to read through the list and drill down on what each food does for the body, I learned what to eat to help my various ailments. The best part is, I don't need a prescription and there are no bad side effects. I simply buy the seed, plant it in my garden, and then harvest my way to health. I enjoy meal prep now and I have a whole new relationship with food as a gardener. I knew I was eating better but was still pleasantly surprised when I saw the improvements in my blood tests as a result!

BEANS AND GRAINS

Beans should be a large part of your diet as a great source of protein, fiber, vitamins and minerals. There are countless varieties of beans and peas you can plant that will never be found on grocery shelves. You can eat them green as snaps, eat them freshly shelled, but be sure and dry plenty so you can eat them all year long in a variety of dishes. If you are going to try and eat less meat, beans can fill that void by providing much of the same nutrition found in meats. Many varieties are climbing, which means they take up less space in the garden by utilizing your vertical space. Sometimes when you are running out of room, there is nowhere to go but up! (If you want to learn more about growing climbers and crawlers, check out our March/April issue.—Editor)

There is one food group we

> It's not unreasonable to think we can raise a year's supply of wholesome organic foods that will improve our health.

seldom find it in the garden, and that is grain. Some people are trying to cut grains from their diet and that's a shame because they are missing out on the great health benefits. But I agree we should never eat processed grain products that have had the fiber and nutrition removed. The resulting product is a carbohydrate that wreaks havoc on our blood sugar levels and contributes to our obesity epidemic—but let's not throw the baby out with the bathwater. Whole gains, simply ground the way they have been ground for thousands of years, contains lots of protein, vitamins and minerals, along with healthy fiber. A Harvard Medical School study of nurses during a 12-year period found that women who ate whole grains weighed less than those who ate processed grain. And the more whole grain they ate, the less they weighed. Whole grain consumption also reduced the risk of metabolic syndrome (insulin, blood sugar, and diabetes problems). So, I think it is safe to say we need whole grains in our diet just as much as fruits or vegetables.

For a while I purchased whole wheat bread at the grocery until I learned it was not really what I thought it was. What they call whole wheat is really processed wheat with the fiber and germ separated and then added back after being pulverized to a powder and leavened with fast acting yeast. The effect is it also causes blood sugar to rise and then fall just as much as bleached white flour. So what's the solution? I make my own bread the way it has been made throughout history. I grind my grain the day I need it and then ferment it with what many call a sourdough starter. This slow acting yeast unlocks the nutrients and makes the gluten easier to digest. In fact, some studies have suggested that

What to Plant

Your climate and gardening zone will dictate what you can plant, but most vegetables are annuals and will grow anywhere. I started with the list of 100 healthiest foods and wrote down each vegetable I thought we could grow and would eat. You really can't go wrong with a packet of seed though. The fun is in the experimenting so try lots of varieties. The more colorful a variety, the more cardiovascular benefits it provides. Go for the rare and exotic heirloom seeds. It will be fun and you'll get the kids interested too.

PRESCRIPTION FOR HEALTH:

- If like me, you have trouble stabilizing your **blood sugar** levels, then grow asparagus, corn, green peas, onions, squash, sweet potatoes, Swiss chard, apple (yes, you can plant apple trees), strawberry and raspberry or blackberry.
- For us **postmenopausal women** who are concerned about our bone health, be sure and plant a lot of onions, potatoes, spinach, Swiss chard and tomatoes.
- If you are trying to get clean after years of junk food, then you need something to **detox your body**. You'll find that with broccoli, cauliflower, collard greens, kale, mustard greens and turnip greens.
- When I was confronted with **high cholesterol**, I refused to take statins, at least until I tried to get it under control myself. With the help of my garden I did it and you can too if you plant and eat plenty of cabbage, collard greens, eggplant, garlic, kale, mustard greens and beans.
- If you are concerned about **cancer** (and really, who isn't), then plant foods that have shown promise in studies to help fight cancer cells like bell pepper, broccoli, cabbage, carrots, cauliflower, collard greens, cucumbers, fennel, garlic, green peas, kale, mustard greens, onions, potato, spinach, squash, tomato, apple, strawberry and raspberry/blackberry.
- The leading cause of death is still **heart disease and stroke**, so we'd all do good to eat foods proven to fight coronary heart disease. I would say most any fruit or vegetable is better than junk food, but these items have shown in test after

gluten intolerant people can tolerate fermented wheat, but I wouldn't try it without consulting your doctor.

Raising wheat, barley, rice and other grains is a bit more difficult than raising vegetables, but you can buy them online or in bulk food stores in 25 to 50 pound bags very reasonably priced. In addition, there are several grains that you can raise, dry and store at home to be ground later. All you need is a grain mill and you too can make real bread from grain you store at home. It is not only healthier, but I think it tastes better. It is certainly less expensive than the commercial breads, which are in part responsible for the rise in obesity rates.

If you are from the South, then cornbread is probably one of your favorites. I grind my own cornmeal fresh each time I cook and it produces a superior bread than any meal I have ever purchased. Besides, there are a lot of different corns I can raise thanks to the Native Americans who preserved them for us. Try some of the blue flour corn or maybe a multi-colored dent. Once you taste it there will be no turning back.

My husband is one of those gluten intolerant people, so I had to purchase gluten-free flour in order to bake his favorites. It is very expensive, and I didn't like that it was pretty much empty calories from starch, so I set out to make my own gluten-free flour. My favorite is quinoa, which is listed as one of the 100 healthiest foods. I noticed today the price for a one-pound sack of quinoa in the grocery was $10. I see that as extreme since I plant my own. A cup of grain becomes a cup and a half of flour or more after grinding, so it really doesn't take as much grain per person per year as you would think. It is not that difficult to grow and harvest, so experiment with it and see how quinoa works out for you in your garden.

Another highly nutritious grain is amaranth. Amaranth has been cultivated for thousands of years and is easy to grow in most gardens. Be sure and select a variety that is known for its grain production since some are used mostly for the edible leaves or simply as an ornamental plant. Amaranth can serve as a vegetable or a grain. The grain can be stored and used in many ways. Even if you don't want to raise your own grain, it really is worth buying a grain mill and purchasing the grain in bulk so you can make real, wholesome products that will feed your family, instead of simply adding empty calories.

CONCLUSION

If your doctor hasn't talked to you yet about your diet, he probably will. But even if he doesn't, we must take responsibility for our own health and certainly that of our dependent children. It's not unreasonable to think we can raise a year's supply of wholesome organic foods that will improve our health. Gardening in and of itself is therapeutic and a great exercise, but the added value of safe, fresh foods in endless varieties is even more beneficial. Add to that the economic value of the food you grow, and you'll have a healthier bank account as well. Gardening really is the prescription for health. Doctor's orders!

test to prevent or even heal coronary heart disease—carrots, cauliflower, celery, collard greens, eggplant, garlic, green bean, green peas, kale, leeks, mustard greens, onion, potato, leaf lettuce, tomato, turnip greens, apple, strawberry and beans.

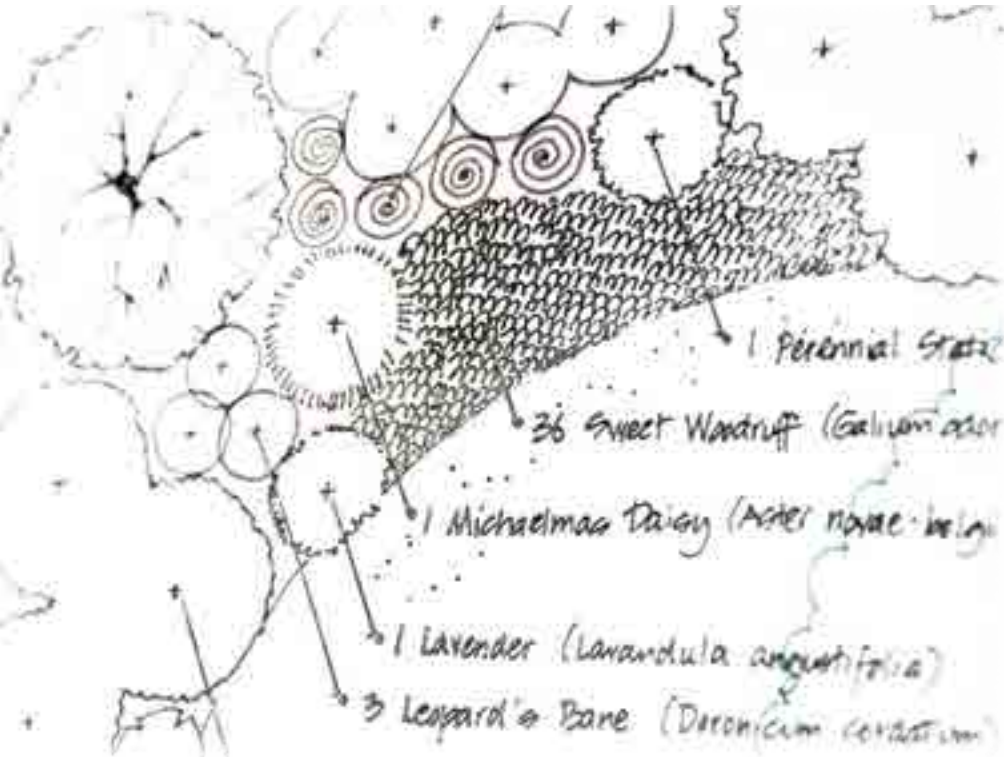
• **Inflammation** is tied to many diseases including artery disease, but those who suffer from arthritis or any of the autoimmune diseases know the damaging effects of inflammation only too well. There is help in your garden though if you plant these foods that fight inflammation—asparagus, bok choy, broccoli, cabbage, cauliflower, celery, collard greens, cucumbers, garlic, green beans, green peas, kale, mustard greens, onions, spinach, squash, sweet potato, Swiss chard, turnip greens, apple, watermelon, strawberry and raspberry/blackberry.

• **Dementia** becomes more of a concern as we age so try these brain protecting plants—eggplant, potato and strawberry.

As you can see, many fruits and vegetables are listed in multiple categories and this list is not all-inclusive. These are just a few of the ones tested. I think it is safe to assume there are many other health benefits in fruits and vegetables that have yet been discovered. Add to that the medicinal herbs you can grow and you have the best medicine nature has to offer.

—Kay Wolfe

Techniques and Tips for Gardening



BY ANITA B. STONE
PHOTOGRAPHS BY CHRIS J. KOTTYAN

THERE ARE AN ENDLESS VARIETY of ideas for anyone who gardens and, of course, we all have our own tips and techniques that we enjoy sharing; it's just a matter of plant selection that fits your personal style. The main goal is to plant your landscape for maximum enjoyment and low maintenance. Proper planning, planting and care are extremely important when you create a garden, whether it is outside or indoors, planted in soil or set in containers. Either way, patience is a virtue. We all want our gardens to be the biggest, the best and the fastest growing arena on the homestead. Whether your gardening adventure is just beginning or you are a seasoned gardener, each season is a new adventure. So permit your plants to grow at their own speed—which may take up to six weeks to become acclimated to their surroundings before they begin to thrive.

PLAN AND PLANT

It's always a good idea to plan a design of sorts, prior to planting. The internet offers scaled drawings for garden plots along with new ideas. But if you want a unique garden, you must think out-of-the box. Don't perform like everyone else. Look for unique plants, plants with a lot of color, plants that make you smile, plants that require low maintenance and plants that give you the biggest bang for your buck. I've known gardeners who use paper napkins to plan and design a landscape. Many of us plant out of sheer excitement because we become overwhelmed with the beauty and magnificence of gardening, but soon discover that we have placed too many plants in an area that will become over crowded, or have placed a sun-loving plant in a shady spot, maybe even planted a tree or two because it is so beautiful, only to find we have planted too close to the house where the roots eventually invade the foundation and intertwine with underground utility lines. Some large tree trunks begin to grow aboveground because there is no room for them to expand. And, of course, we have to be aware of whether we are planting for sun, shade or in between plants. Structures should also be taken into consideration. If you have a fence, mailbox, trellis, or a specific feature on the homestead you'd like to enhance, then consider those additions to the landscape. And always be aware of the longevity and expansiveness of

what you plant. For example, a large palm set in a container can enhance a porch or deck. Just make sure it is watered sufficiently and receives ample light.

Three years ago I planted six daisy clumps in front of a rain barrel that sat at the end of my garage, knowing they would get ample sun and certainly much needed water. But not thinking or researching ahead of time, by the third year the daisies tripled and became invasive, spreading their lovely stems and heads into a nearby bed of iris. It became a battle of survival for each plant until I removed the daisies.

I quickly learned that although I desired a variety of plants to make a statement of beauty, each cultivar requires different care. So, awareness of growth habits is of major importance when selecting

A variety of plantings that work well together, both in color and health. LOWER LEFT: A majestic palm.

and planting anything. Once you feel secure about the plan, the next step is to consider soil, what I call a plant's "lifeline."

SOIL AND MULCH

The landscape offers a variety of soils from clay to sand, from rocky to terraced, and from saturated to crumbly. When it comes to selection, there are an abundance of choices in maintaining a good soil fix. But first, it is a good idea to get your soil analyzed. This can be done for little or no cost from your county's department of agriculture, or a master gardener group can advise you. Once you realize what the soil lacks in nutrients, then you can adjust the soil needs to the plant.

The first consideration is that soil should be loose and offer proper drainage. Also, the color of the soil should give you a dark rich texture, free from any obstacles such as twigs, debris, mold and rocks. When you are ready to plant, the hole should be two to three times the circumference of the pot it was in. Always know the size of the hole you will dig—do not guess or you may find you have over-dug or under-dug to fit the size of the plant. Whether the hole is small or large, it is preferable to work in peat moss, manure, humus or leaf mold. Use bone meal as an additive—it will boost root growth. Once you have applied sufficient organic matter you are ready to mix everything together and let it sit for a day. If your soil contains a lot of sand or clay, it is advisable to add a good grade of black topsoil in addition to the organic matter. Be careful where you get your topsoil, because sometimes it will contain bits of weed seed that sprout when exposed to the air. Choose a reputable brand name for high-grade selection and simply work it in with the original soil. A rule of thumb is one-third original soil, one-third organic matter and one-third topsoil.

Make sure you mulch the garden frequently to keep it weed-free, improve soil nutrition, and give it a well-groomed appearance. You don't need to buy expensive mulch; just use items that are around the homestead such as compost, woodchips, grass clippings or decaying leaves.

DEPTH AND CARE OF PLANTS

When you have established soil balance, dig the hole twice the width and depth of the root system you are working with. If you are planting from original potted plants directly into the ground, it is preferable to have from six to eight inches of space around them. For trees or shrubs, dig approximately two to three feet around the plant. Make sure you leave seven to eight inches of loose soil at the bottom of each hole. This allows the roots to thrive in enough soft soil to grow and expand once the plant is placed. Before you release any plant from its original container, check out the old soil line on the plant. That way, you can gauge the depth at approximately the same level as the plant was grown originally. If you are not able to identify the soil line, the top of the root system should normally be right below the soil surface (it depends on the plant). Remember not to tamp down the soil to much once you have planted. This is important because too much tamping will invite compaction and the plant roots will suffocate.

Ferns, combined with seasonal plants, provide a good mix, as shown in two of these photographs. Below, a combination of hibiscus with caladium work well together.

Plants stress from any change in temperature or location, so move slowly, carefully and gently. Do not fertilize new plantings until set, which can take up to 10 days. However, be sure to water well, especially during the cooler months so the roots can soak up the water. But be careful not to overwater or you will cause root rot or root freeze. There are a variety of methods when planting; you can use the no-till, raised garden bed, vertical, horizontal, repurposed pallets or containers, to name a few. All are excellent methods, just be sure to research the type of planting you are going to use prior to building or planting.

SEASONAL PLANTINGS

When I first began to garden I was told that I could plant anything in the fall as long as I could dig a hole, no matter how cold it was outside. I quickly learned that planting techniques differ according to each season and location. Check your agricultural zone for freeze dates and be sure to follow the rules about planting or results may prove to be negative. If it is hot, provide enough water to any newly set plant. Do not allow plants to dry out. The same applies to spring bulbs, which can be planted even if it's hot outside.

Do not fertilize any bare root materials until the second year. This is the time when the roots will be established. Bare root items, such as roses, are sensitive to fertilizer the first year in the ground. If you fertilize the plant it may cause harm to the root system, even possibly killing the plant. I have noticed that some thick-root systems deteriorate after a few years in the ground. This results in a "sick" trunk and will breed diseases like black spot or invite

chomping insects. So pay special attention, not only to the topside of your plants, but check out limbs and trunk systems where life and death occur frequently.

Another tip is to recognize whether a plant is dead, alive or dormant. Several years ago I fell into the trap of the "unknowing gardener." I purchased and planted hydrangeas. When the blooms expired a clump of sticks remained standing vertically from the plant. My initial reaction was that the plant had died, so I pulled it from the soil and tossed it away. Later I found out that hydrangea appear dead during the winter, with only sticks where the flowers had been. So how do you know whether a plant is dormant or really dead? If in doubt, do a scratch test. Scratch away a small amount of the bark, approximately one inch up from the base of the plant. If the plant tissue underneath is white or green, it is alive; if it is brown or black, it is dead.

Another faux pas is planting bulbs incorrectly, which I also admit to doing—150 of them. As time passed, I couldn't understand why there were no flowers popping up from the ground, until I realized the bulbs had been planted upside down with the tip faced down into the soil. Frustration was at its ebb until I began to research everything I wanted in the garden prior to planting.

Any weather-related gardening should be done with common sense. Don't leave your palms outside when the temperature gets below freezing. Hibiscus plants should be brought indoors or the leaves will freeze, the potential blooms will become stricken with curl and the future will not be positive. Plants like beautyberry, oakleaf hydrangea and yew have to be cared for during the cold weather. One year, while working at a greenhouse,

The results of using all these tips can mean beautiful centerpieces all year long.

Mulch is favorable for perennial plantings and helps keep weeds down.

several of us placed bales of straw around a section of outdoor shrubs, which insulated them from the cold weather. You can perform that task with any group of plantings — simply surround them with an insulator to keep them warm.

CERTAIN STROKES FOR CERTAIN PLANTS

Some plants and shrubs need special attention. Roses, for instance, should not be fertilized after August in cold climates. Prune one-third to one-half of the previous year's growth and remove all suckers as they appear. Make sure you pull out any damaged or diseased-looking branches. By removing faded blooms, you will also promote additional flowering.

When planting bare root trees and shrubs always keep roots covered and use good topsoil.

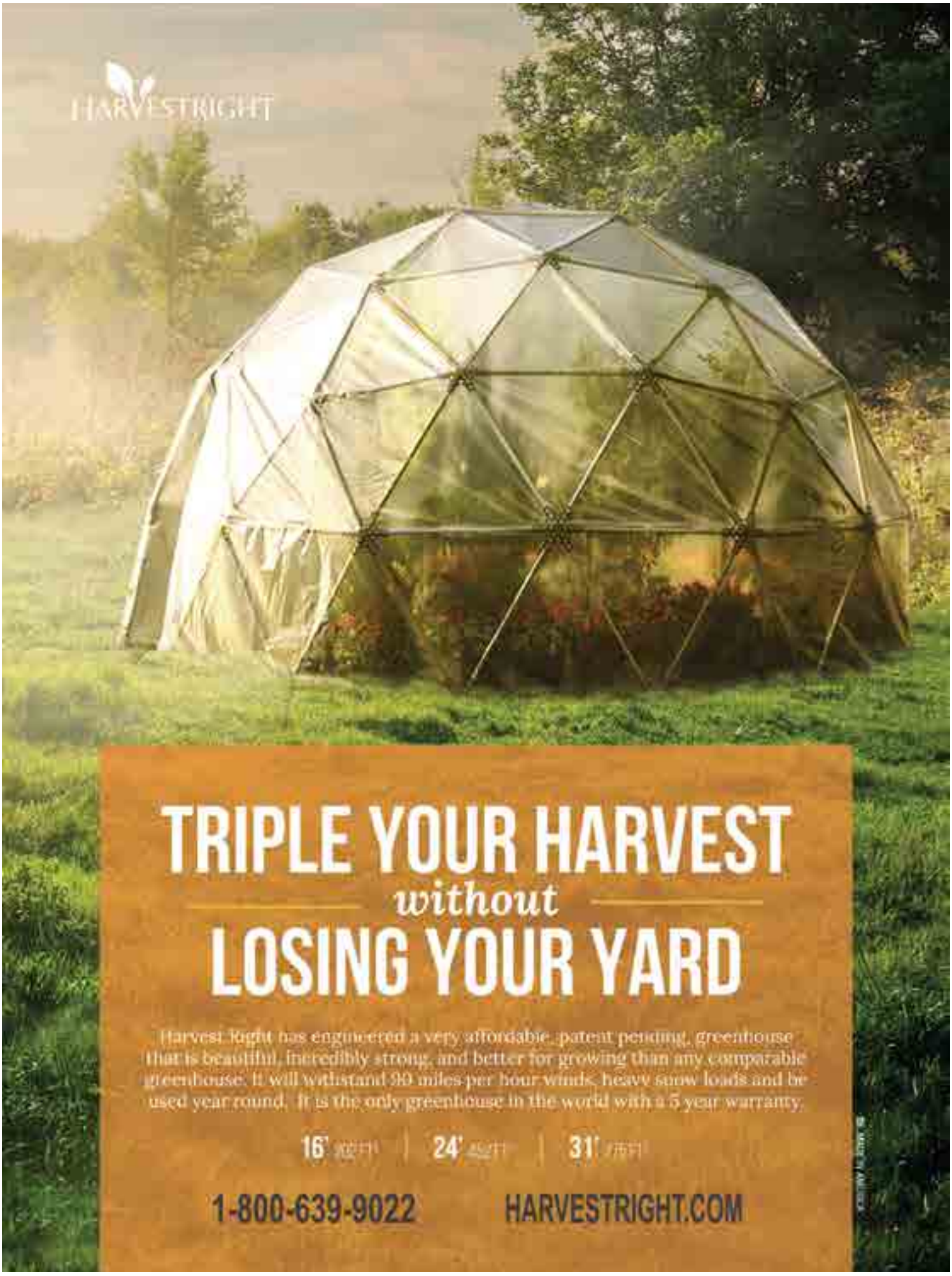
If you wish to store items during the winter, you can store bulbs in a frost-free refrigerator. Place them in a container covered in sawdust, sphagnum moss or shredded newspapers. Do not put near any fruit products and do not allow the plants to freeze. If mold should develop, wipe the mold off, then place them in newspaper or paper towel for protection and return to the refrigerator.

Once you plant, you can control weeds with frequent, shallow cultivation. It also eliminates weeds that compete for moisture. Mulch is favorable for perennial plantings and helps keep weeds down. Favorites are wood chips, peat, grass clippings, manure with straw (not "fresh"), marsh hay or compost for ornamental trees. The first year, evergreens require ample water in late fall before freezing begins. Do not allow the ground to dry out, but do not let it get soggy.

If you want to plant vines, make sure they are planted a minimum of one inch from any structure for adequate air circulation. Cut them back and stake very securely. Firm the soil around the roots and fertilize as soon as new growth occurs. Vines require a lot of water. It is best to train vines so they will beautify the landscape, whether along a fence, trellis, mailbox or light pole. Vines are quite self-sufficient. Just make sure they are guided properly or they will run rampant where they grow.

Networking is an excellent method to learn about tips and techniques for gardening. Contact your county for listings of garden clubs. The internet offers meet-up groups, nurseries and free information as well as free classes. Through the department of agriculture, master gardeners are always willing to help anyone who wishes to learn better gardening skills.

Beautification is important to most homesteaders. So keep in mind multiple combinations of plants, shrubs, trees and color when you plan, design and plant your garden. Learn the techniques that are available and never be afraid to ask questions.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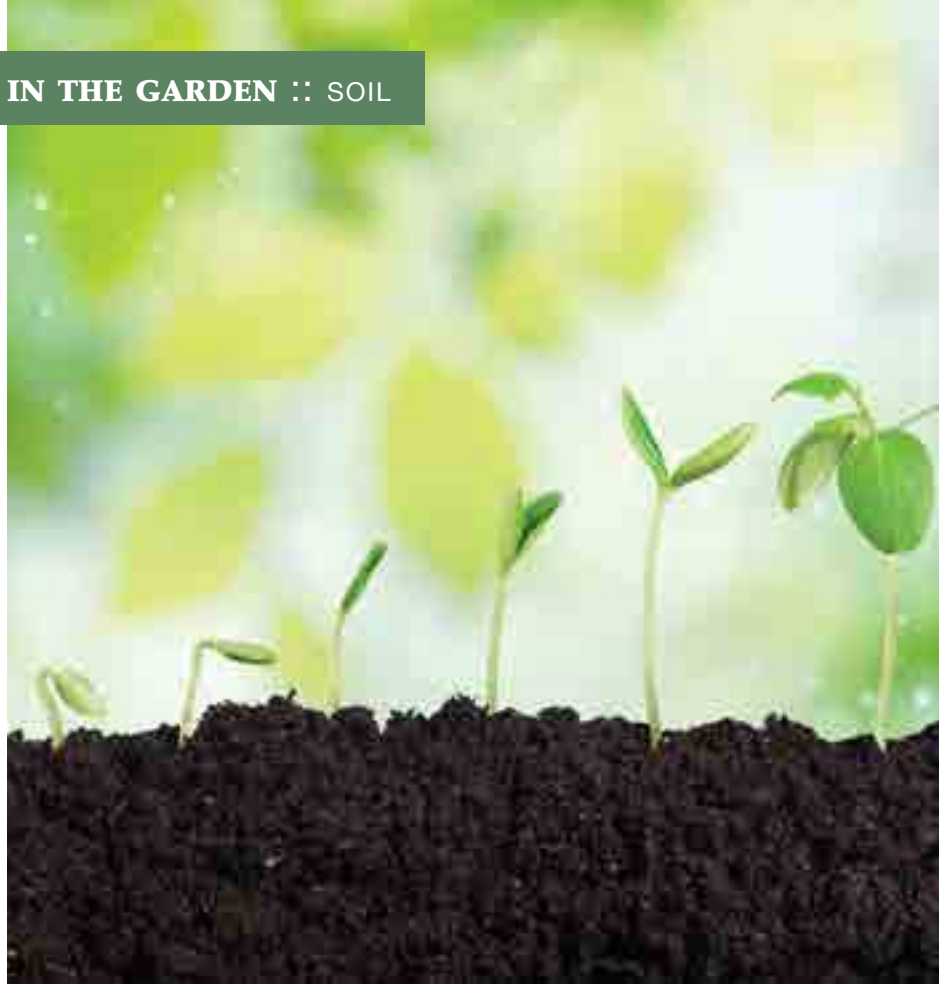


Bring Back Life to Your Soil with Organic Gardening

BY KAY WOLFE

ORGANIC FOOD HAS BECOME widely popular in recent years and in part has fueled the success of local farmers markets. Maybe you've even thought about switching over to organic methods in your garden but weren't sure how to begin. Most people go organic to avoid pesticides and other chemicals in their food, but the result of using natural organic methods is your soil once again comes alive the way nature intended. There are amazing benefits to live healthy soil, both to the plants as well as to the environment. Let's try to simplify this in layman's terms.

Organic simply means something derived from living matter and nothing is teaming with life more so than healthy soil. Not all soil is healthy though. In fact, for a long time we've been destroying our soils faster than they can recover. Before man challenged the Great Plains, the soil there was several feet deep and held a diverse collection of plants and animals. How and why the soil was so deep and productive should be of great interest to us if we ever hope to make it so again. The tide is starting to turn though with more and more gardeners going organic.

The next time you're in a forest, push aside the leaves and dig down to get a handful of dirt. Feel how light it is and then smell the sweet earthy aroma of healthy soil. This is nature's way and this is what we should aim for. The most active soil life lives in the top four inches so when you leave it uncovered and expose it to the sun or rain; you are destroying the microbes, which make up the life of the soil. When you take your tiller to your garden, you are doing even more damage as you destroy the fungi webs, the worm tunnels, and the very structure of the soil. That is man's way, not nature's.

With the advent of much improved electron microscopes we can now see what lives in our soils. Healthy soil samples like that on the forest floor can contain more than a billion bacteria, thousands of protozoa, several yards of fungal hyphae, and dozens of nematodes including hundreds if not thousands of different varieties of each. In addition to the microscopic beings there are also countless varieties of arthropods (bugs), earthworms, gastropods, reptiles, mammals and occasionally birds that become part of the food web.

SOIL MICROBES

We call it a food web because it is not a direct food chain where nutrients are moved up to larger species. The nutrients go back and forth from species to species. The organisms all tend to eat each other at different times and under certain conditions. But, the result of all this eating and growing changes the nature of the soil as microbes protect, feed,

and improve the plants. Let's look at the workers responsible for building our soil health.

Bacteria and archaea are the smallest microbes in the soil and comprise the largest number of all living soil organisms by far. We tend to fear these one-cell life forms as the source of disease and infection, but in reality, life would be impossible without bacteria in the soil as well as in our own bodies. There are more species than we can count, but only a portion of them are harmful. Bacteria decompose organic matter using enzymes to break down the cells into individual minerals and nutrients, which they store in their own bodies until needed by the plants. If not for their ability to store them, the minerals and nutrients would be washed away after a rain or released into the air. Bacteria also create a slime that holds the soil particles together and buffers the acidity of the soil. This is how they improve soil texture and water-holding capacity. Their size limits their mobility though and most spend their life within a few inches if they don't catch a ride somehow.

Fungi are the second most abundant life form and decomposer of organic matter, but they are much bigger than the one-celled bacteria. Yes, mushrooms are fungi, but I'm talking about the nearly one million varieties that live underground forming large webs of filaments or thread-like hyphae. These hyphae can prey on other life forms like damaging nematodes and bacteria and can move great distances, relatively speaking. They can go above ground to reach dead leaves or they can go deeper into the ground. They are able to eat woody particles that bacteria can't because they have stronger enzymes. But, like the bacteria, they store nutrients in their cells, protecting them from leaching and bring them to the root zone like extensions of the roots. Fungi tend to acidify the soil through this process while bacteria buffer it.

Moving up in size we have the protozoa, including the amoebae, ciliates and flagellates. Protozoa both feed on bacteria and other life forms as well as provide food for them. They benefit the plants by producing nitrogen in a form preferred by individual plants. They also provide a way for bacteria to move and they are food for worms and other higher life forms.

Nematodes are tiny round worms that eat their way through the soil. Some are beneficial while others prey on plant roots. Their biggest benefit is they release nitrogen gained from eating and digesting the nitrogen-fixing bacteria so it is available for the plant at their root zones. Healthy soil is balanced with the detrimental bacteria and nematodes held in check by the beneficial fungi, bacteria and other life forms. The result is healthy productive plants without any aid from man.

Arthropods as a group are what you and I call bugs. While we may not like them, we certainly need them. Arthropods that live in the soil take larger pieces of organic matter and chew it up so the bacteria and fungi can begin to break it down. They also improve the structure of the soil by tunneling and act as a taxi for other smaller life forms allowing them to move throughout the soil. Although they are huge compared to bacteria, most soil borne arthropods are too small for us to even notice.

One of my favorite life forms in the soil is the earthworm. Even before I began to study soil, I knew that earthworms were good for soil and the more the better. They are small but oh so powerful. Just an acre of good garden soil contains enough earthworms to move 18 tons of soil a year in search of food. Just think what they could do for compacted dirt! They will eat just about anything they can get in their mouth but their primary source of food is bacteria, so when you see earthworms, you can feel confident that you have a good supply of beneficial bacteria. The castings they leave behind are rich in phosphates, potash, nitrogen, magnesium, calcium and many other nutrients

Balanced, organic composts can lead to bountiful harvests in the garden.

Many people just assume the roots absorb the nutrients from the soil, but the actual process is much more complex than that. Since roots are stationary, they can only absorb what touches their surface, so it is up to the microbes to make sure they have access to the nutrients they need, in the form they need it, and when they need it.

that feed your plants. Their burrows open up the soil so it can breath and helps direct water where needed. Roots often take advantage of the canals and grow in this nutrient rich environment.

THE SOIL FOOD WEB

As a gardener, you already know it takes more to grow a plant than the sun. It takes water, minerals and a lot of nutrients. Until now, how that plant got nourishment was somewhat of a mystery. It gets it through the roots mostly except for a small amount of foliar feeding (feeding through the leaves). Many people just assume the roots absorb the nutrients from the soil, but the actual process is much more complex than that. Since roots are stationary, they can only absorb what touches their surface so it is up to the microbes to make sure they have access to the nutrients they need, in the form they need it, and when they need it.

Plants and the soil microbes communicate in order to help each other in a symbiotic relationship. Plant roots leak a sweet substance called "exudates" that attract fungi and bacteria. In return, they supply the root with nutrients they have broken down through their enzymes. Beneficial fungi can actually reach out through their hyphae and transport nutrients back from one plant to another as in nitrogen transfer between legumes and non-legumes. The microbes are like little armies of servants protecting the roots from invaders, providing water and nutrients when needed, keeping the soil open so oxygen is present, and keeping the soil structure and pH in the proper balance.

Chemical fertilizers, pesticides, herbicides and all the other "cides" are poison to the soil microbes. Oh, it works for the short term because a bit of the fertilizer touches the root hairs and is absorbed, but the majority of it is washed away while killing the microbes. Your plants stop secreting exudates because the soil life is no longer there to take care of the plant's needs. Soon they are overcome with disease and pests, which only causes us to want to use more chemicals. It's a horrible cycle and it is what has ruined much of our soil. The next time you drive by a non-organic corn field, stop and take a handful of the dirt and study it. This is what dead soil looks like and it will end up compacted no matter how much you disc it. It will dry out in a short period of time and it will heat up fast and crust over. None of which is beneficial. Now compare that to the sweet earth from the forest.

Soil compaction is a huge problem with dead soil. Think of a ream of copy paper. It is hard, heavy and tightly spaced. Now, if you begin to take each page and crumple it and throw it in a box, soon you have a soft fluffy pile of paper. That's what life does to soil. It opens it up so the roots can penetrate easily and deeply. It holds water not as mud, but more like a sponge to be used later. It stays cool and moist even in the heat of summer. That is what organic gardening and soil microbes can do.

REVIVE DEAD SOIL

So, how can we bring life back to our soil and improve it in a sustainable way? Well, the first thing we need to do is stop the killing and that means no more synthetic chemicals. None. Things may get worse before they get better, but the life will never come back until you stop the poison. There are a few basic organic gardening concepts and once you get them down, gardening will be easier than it has ever been.

- **No till**—When you lay the ground open you lose a big part of your carbon and nitrogen to the air. Poof! Your nutrients are gone. Since most microbial life is in the top four inches, you just wiped them out as a tsunami or a tornado would do to a village. Get rid of your plow; get rid of your tiller so you will never be tempted to use them again. Make no bigger hole than needed to plant your seed or set out your plant. A technique I like to use is to cover the seeds with a layer of rich compost rather than disturbing the soil.
- **Mulch**—Nature hates exposed soil because it knows it means certain death to the microbes that live just below. No matter how many times you cultivate or hoe, nature will fight even harder to cover it with the fastest growing thing she has and that

is a weed. Covered soil holds moisture longer and it doesn't erode in heavy rains. It also keeps the temperature more constant whether in winter or summer which protects your plant roots as well as the microbes. Organic mulch provides a constant supply of nutrients for the organisms to consume and break down, further improving your soil. I like to cover my beds with cardboard or newspaper around plants to keep the weeds from germinating and then top with a mulch of alfalfa hay, but you can use whatever organic matter you like.

- **Keep it growing**—Don't waste space. Use permanent wide rows, square foot gardening, or any method you like as long as you keep living plants on the soil. That means use cover crops and there are many to choose from. They will keep the soil covered and add organic matter to feed the microbes once you turn them into mulch. You might want to mow them or weed-eat but leave the plant material where it grew. Studies have shown that hairy vetch grown before tomatoes and then left as mulch increases tomato yields substantially. I'm sure there are many other combinations that could work just as well.
- **Feed your soil**—There are simply too many organic choices to ever need chemical fertilizers. The best way to feed your soil, thus your plants, is with compost and/or compost tea. There are many books and articles on the subject so I won't go into it here, but remember that fungi favor the brown (bark, straw, saw dust) while bacteria favor green (grass clippings, garden waste, kitchen scraps, etc.). Since fungi create elaborate webs of hyphae, long-term plants such as trees, shrubs, and perennials benefit more from them while annuals and vegetables prefer more bacteria. You can create compost specifically for the kind of plant you are fertilizing by adjusting the percent of green and brown in your compost.
- **Stay off the soil**—Once you begin to bring life back to your soil and the microbes begin to fluff your dirt, don't go and crush their tunnels and destroy the structure by walking and driving over it. Make permanent beds with paths to use for foot traffic and wheelbarrows. Compaction smothers the oxygen out of your soil, kills the life, and causes irrigation and rain to run off without doing your plants any good. I prefer raised beds for many reasons, but one thing it does is discourage pets and people from stepping in the beds.
- **Pest control**—As your soil life gets better, your plants will become healthier and can ward off pests and disease, but if you find you still need help, check out the organic products for the particular problem you have. I have found that many times an infestation left alone is soon conquered by beneficial insects or birds. Some plants need more help than others though—such as fruit trees—so become familiar with organic products ahead of time so you are ready when they attack. I personally don't aim for a perfect plant or produce. I plant enough to share with nature as long as they don't get too greedy.

CONCLUSION

The earth has a remarkable ability to heal in spite of the harm done by man. All we have to do is study nature and follow her lead. If we abandon the practice of tilling and chemical applications to our gardens, we can bring back the life that was always meant to be in the soil. Organic gardening has many advantages and while it may be harder to establish in the beginning, it more than pays off with saved time and energy in the long term. After all, the microbes in the soil will take care of your plants. All you need to do is stop killing them!

Reach Beyond Red Radishes

BY MISSY AMES

Radishes can be sweet or spicy, big or small, eaten or used as decoration.
PHOTOS BY SHELLEY DEDAUW

WHEN WAS THE LAST time you were struck speechless by a radish?

Two hundred years ago, radishes had the power to lock long-haired girls within tall towers. At least, that's what modern English translations claim. A pregnant woman's cravings for the crops growing behind her house were so strong that she convinced her husband she would die without them. He climbed the fence to indulge her, but the meal only made her want more. The second time, the husband was caught by the garden's fearsome owner. He had to promise the child in trade for his life and freedom. According to translations, Rapunzel's mother could have craved radishes or rampion, which is an edible wildflower with roots eaten the same way. Radishes were cultivated in Europe before Roman times and were quite popular where The Brothers Grimm wrote their stories.

Radishes are ridiculously easy to grow and seed is so inexpensive that many organic gardeners plant them simply to keep hungry insects away from their more precious crops. Others companion-plant with carrots since carrots take twice as long. The radishes can be harvested and eaten, allowing the carrots to expand and mature within the empty space.

They are among the first foods of springtime and can be sown right when the ground is workable. Plant one-half to one-inch deep, depending on whether you're cultivating small or large varieties. After the heart-shaped seedling leaves emerge, gently dig them up with a spoon and redistribute if they've sprouted too closely together. Keep soil moist but not wet. Smaller, European varieties are ready within a month while Asian radishes can take two. Pay attention to the growing times of each variety so they don't become tough and woody.

Sweet or spicy, small or long, spherical or cylindrical, they come in expansive varieties and colors. But often Westerners only recognize small globes, red on the outside, white and crisp within.

SWEET OR SPICY

Would you like a calm, pleasant radish-eating experience or a root that makes you sit up and pay attention? Flavor varies based on variety and growing conditions.

For a sweet, crunchy treat, try daikons. These popular Asian varieties are pure white and grow up to three feet long within 50 days. Asian markets and restaurants sell them raw in a produce aisle, pickled in sushi or kimchi, or added to hot pot soups. In North America they're often grown as a cover crop, left in the ground to break up soil while the tops feed livestock.

Daikon seeds are available through garden centers and online seed retailers. Plant them six inches apart because they get big! Daikons are an excellent companion to onions since they both flourish in the same conditions. As daikon roots grow down, the leaves spread out wide along the ground. Onion bulbs swell large and round but their tops rise up tall and straight. One mulches the other and they don't compete unless

you plant them too close. And if they get crowded, pull several a little early and enjoy them small and young.

Dating back to 1548, Round Black Spanish radishes pack a lot of heat. Best grown in cold conditions, this winter variety can reach a five-inch circumference within two months. The insides are snowy white while the rough skins look like they've been rubbed with charcoal. Black Spanish bolt in high temperatures. Sow as soon as the ground can be worked or wait until fall rolls back around. Give them plenty of space to grow.

For the sweetest and crispest radishes, use fertile soil but not too rich. High-nitrogen compost and fertilizers promote beautiful tops and tiny roots. Sprinkle wood ashes into the soil prior to planting. This adds potassium, repels root maggots, and helps dirt retain moisture. Give them moist soil, cool weather and plenty of space. Radishes allowed to grow in hot or dry conditions become pungent.

HEIRLOOM AND HYBRID

Do you want the newest, most improved varieties? Or are you a garden luddite? Choose one, the other…or both. New, open-pollinated varieties are available.

Conventional seed companies offer hybrid radishes. Look for the tag "F1" beside seed descriptions. Hybrids are not genetically modified. They are bred specifically for the best qualities, but unlike open-pollinated varieties, this breeding means those qualities are only available within the first generation. Seeds saved from hybrid plants will not sprout to have the same beautiful and improved qualities of their parents. Hybrids can be organic or conventionally grown and do not carry any of the dangerous claims following GMOs. These healthy and hearty varieties are safe for everything except seed savers. Popular F1 radishes include small, round Celesta or the daikon Minowase Summer Cross.

Open-pollinated varieties aren't necessarily heirlooms if they haven't been handed down from gardener to gardener. But you can save the seeds. Look for "OP" beside the seed description or purchase from companies that only sell heirloom and open-pollinated stock. OP varieties let you choose sustainability as well as improved traits. Try cylindrical French Breakfast or the extremely popular Easter Egg radish, which is actually a collection of several open-pollinated varieties sold within one pack.

Some gardeners choose history and sustainability over improved qualities. Heirlooms are often tougher than hybrids, depending on variety. Older radishes may bolt sooner in the heat or have woodier roots. But heirloom gardeners can boast that they have 600-year-old varieties on their properties. Try Long Scarlet for a rare treat. If summer is coming on fast, plant De 18 Jours, an old French variety that yields in just over two weeks.

All varieties of radish fall within the species *Raphanus sativus*. This means that they will interbreed if planted too closely together. Interbreeding will not affect the plant grown from the first seed; it will be exactly the variety you intended to plant. But if you harvest the seeds of two varieties grown in proximity, the next year's radishes may be a cross of the two.

> The only modern radish with the potential of topping 100 pounds is Sukarajima, sometimes known as *shimadekon* (island daikon). But it normally reaches only 15 pounds, a weight that is still quite impressive.


Daikon radishes.

RADISHES TO IMPRESS YOUR FRIENDS

Do you want to see eyes light up with both wonder and confusion when you bring over a basket of spring vegetables? Abandon the notion of red-and-white roots and seek out more color!

Try Pusa Jamuni and Pusa Gulabi, open-pollinated varieties grown by Dr. Pritam Kalia in India. Both are brand new and available in rare seed catalogs. Both are large and cylindrical winter varieties and both also grow well in the heat. But Pusa Jamuni is lavender on the outside with striking veins of royal purple within. Pusa Gulabi has baby pink skin and hot pink middles.

Spicy and ready within 30 days, Zlata resists splitting and bolting. It reaches the size of a standard radish—about an inch wide—but is silky, pale gold.

Choose history and stunning color with Chinese Green Luobo, which are emerald to yellow on the outside with rings of both light and dark

Sweet Curried Radish Pickles

The beauty of vinegar pickles is the high acidity. If the vinegar is strong enough and isn't diluted, vegetables can be interchanged within the pickle. Eliminate the hot peppers if you don't want heat. But do not alter the vinegar/sugar solution.

When choosing vegetables, consider color. The liquid will be turmeric-gold so focus on contrast such as red dried chilies, one green and one orange bell pepper, white or purple onions. Any radishes are fine, but look for daikons because they won't bleed color and you can grow or purchase a lot of radish for a little money.

- 5 pounds radishes
- 1 pound onions
- 1 pound sweet bell peppers of different colors
- 6 hot chili peppers, fresh or dried
- 6 cloves garlic
- 2 inches fresh ginger, peeled and finely diced
- Two cardamom seeds for each jar
- 2 tablespoons vindaloo curry powder
- 8 cups apple cider vinegar with 5% acidity
- 1 cup water
- 2 cups white sugar
- 6 to 8 pint jars with lids and rings

Scrub all vegetables, discarding stems, leaves, and/or seeds. Slice radishes into rounds, 1/8 inch or thinner. Cut onions and peppers into long, thin strips. Dice garlic or slice into slivers. Cut fresh hot peppers into small squares or strips or crumble dry peppers into splinters. Gently toss all vegetables, including ginger, together until evenly mixed.

Within a large pot, mix vinegar, water, sugar, and curry powder. Heat to boiling, stirring occasionally. Keep simmering until ready to pour over the vegetables. Get your water bath canning equipment ready, with water nearly boiling in the canner, new lids in hot water, and both ladles and jar lifters sitting nearby.

Sanitize canning jars within a dishwasher or simmering water. Place two to four cardamom seeds into the hot, empty jars. Pack vegetables tightly into the jars, leaving at least an inch of headspace. With a canning funnel, fill the jars with the simmering vinegar, covering the vegetables and leaving a half-inch headspace. Wipe rims with a clean cloth. Place lids on jars and screw ring down until finger-tip tight.

Immediately place the jars in the water bath canner. Lower the rack and ensure water covers the tops of the jars. Place the lid on the pot and bring water to a rolling boil. Process at least 10 minutes; if you live in high elevations, boil for 20. Carefully remove jars from boiling water and allow to cool completely. Wait at least a week before eating.

If you have extra vegetables and liquid, place these in a clean jar. Cover the jar and leave it in the fridge for about a week before eating. The same can be done with any processed jars which failed to seal. Consume the pickles within several weeks.

Rainbow radishes.

green when you slice horizontally. Green Luobo radishes grow similarly to daikons: large, cylindrical roots with tops that spread out several feet over the ground. They can be fried, steamed or eaten raw, but be sure to only grow them within cool weather.

In 1544, a German botanist recorded seeing radishes weighing 100 pounds. If that variety did exist, it is now extinct. The only modern radish with the potential of topping 100 pounds is Sukarajima, sometimes known as *shimadekon* (island daikon). But it normally reaches only 15 pounds, a weight that is still quite impressive. Grown on the island of Sukarajima, Japan, since about 1800, it doesn't store well but stays crisp and sweet inside even if the outside gets pithy. Plant in the summer to utilize the 80-day growing season and harvest before the ground freezes.

And if you want improved flavor and texture, but have no intention of saving seeds, look for Bora King. This hybrid reaches up to eight inches within 45 days. Deep plum inside and out, it also boasts a little purple color on the leaves. Find Bora King in catalogs which market both heirloom and hybrid seeds.

Succession Planting

If your radishes mature within 30 days, and you have at least 60 days between when the ground can be worked and when it actually stops freezing, why not plant several times?

Succession plant every two weeks: Right when spring starts calling, plant two rows of radishes. Mark the rows so you know where you put the seeds and leave the rest unsown. In two weeks, plant two more rows. By the time two more weeks has passed and you're ready to plant rows five and six, the first two might be ready. Either drop new seeds in the empty ground left from the harvested radishes or make entirely new rows. Keep doing this until spring turns into summer.

Succession plant three full crops: You can probably harvest two successful plantings of small radishes before it's time to put in your summer vegetables. Start as early as you can, planting the entire bed completely in radishes, harvesting and planting again. When all danger of frost has passed, use that ground for your tomatoes, corn or squash. Even if the radishes grow into the summer, you have time to follow up with 60-day beans.

The Long Keeper Tomato

Long Keepers are pulled from the vine when they are still green and ripen as winter sets.

BY KEVIN GREER
CALIFORNIA

LET ME START BY recalling something my grandmother told me when I asked her about growing tomatoes. Grams told me, "Tomatoes are like young boys. They hate showers, are hungry all the time and grow like weeds." To this day, I use her advice whenever I start tomato seeds.

LONG KEEPER HISTORY

If you do basic research about Long Keeper tomatoes, you will find there are hundreds of tomato varieties with this Long Keeper ability. They can be divided into two categories. Some are picked ripe on the vine and stay fresh on your kitchen counter for four to six weeks.

The majority of Long Keepers, however, are picked green, just prior to the first frost. Once picked, cleaned and sorted, the tomatoes are stored in your root cellar at 50 to 55 degrees, where they slowly ripen. Some six to eight weeks later you're ready to start enjoying fresh tomatoes in January! Most are heirloom varieties and there are hybrids available too. Now that I have your attention, you need to know were you can find these Long Keeper varieties.

AVAILABILITY

I found several companies online with reasonable prices for small, sample packets of seeds such as Sandhill Preservation, Mandy's Greenhouse, Southern Exposure and Rare Seeds. You can also find a few varieties offered in your regular seed catalogs.

Every January, I look forward to receiving the new seed catalogs in the mail. I love going through them, finding new varieties, and planning the garden. A few years back I was going through the heirloom tomatoes section, trying to limit myself to 15 varieties so I don't crowd out everything else.

My favorite seed catalogs offered two varieties of Long Keepers with the promise that they would ripen up in the root cellar in January and February. So I purchased a sample packet of each. One was a standard red skin tomato with red pulp. The other variety was a yellow skin/red pulp variety called "golden treasure." When I received the seeds I separated the Long Keeper packets, as I would be planting them later in the season. Since the fruits are picked just prior to first-frost (late October) I would need to put the seedlings in the ground around the end of May.

STARTING TOMATO SEEDS

I start all tomato seeds using medium-size peat pots set in masonry mixing tubs. The peat pots can be found in most all garden supply catalogs. You will notice there are many sizes and shapes offered. They are sold "loose" or in flats. I prefer the standard medium size, round, peat pot and I buy them in 72 count flats, which make them much easier to handle.

The masonry mixing tubs can be purchased at any do-it-yourself store and are essential for keeping the peat pots from drying out while the seeds are sprouting. You can water the seedlings from the bottom by pouring the water directly into the tub and letting the peat pots

My Long Keepers are planted in the potato rows once the spuds are dug up and removed in late May.

absorb the water from the bottom up. Remember what Grams told me: "Tomatoes hate showers." She was saying that I shouldn't get the leaves wet. So by using this method for sprouting you can keep the seedlings moist and keep the leaves dry. I start all tomato seeds about four to six weeks prior to planting them in the garden.

My Long Keepers are planted in the potato rows once the spuds are dug up and removed in late May. Starting seeds in April, they are still prone to late season, overnight frosts. So I place them in a passive solar greenhouse. Remember too, that Grams told me, "They are hungry all the time." So from the first the first watering I use a weak mixture of one teaspoon of organic fish emulsion fertilizer for every gallon of water. Tomato seeds are small and offer very little nutrition for the young seedlings.

Watering this way will make nutrients immediately available as your seedlings sprout. Continue watering the seedlings with this mixture until you have the first set of true leaves (after the cotyledon leaves). Now you are ready to transplant.

TRANSPLANTING

A strong and vigorous root system is essential for a healthy and productive tomato plant. An interesting characteristic of all tomato varieties is their ability to produce hair-like growth on the stem. These are actually roots. Called "adventitious roots," they are located all along the stem of the plant. Tomatoes seem to produce more of these adventitious roots than other vegetables, but you will find these same roots on other plants in the garden such as watermelon vines.

Transplant your tomato seedlings in their peat pots. Place the peat pot an inch or so below the soil line and fill in the soil above. This will allow any adventitious roots in contact with the soil to grow and aid in developing a strong and vigorous root system for your tomatoes.

SEEDLING CARE

Once your seedlings are in the ground they become vulnerable to predation from insects and predators. My biggest problem with seedling predation comes from small birds. They hop down the row and cut the seedlings off at ground level, often just leaving the cut seedlings on the ground.

I developed an inexpensive and easy way to protect the young seedling transplants until they are large enough to prevent predation, using transparent plastic cups and metal stays from the drip line. Large packages of

transparent plastic drinking cups are available at your favorite discount retail store. Use a razor blade to cut the bottom off each cup and make a slit down the side of the cup.

Place a cup, upside-down, over each seedling. Secure the cups with a metal stay from the drip-line system. This will protect your seedlings until they can grow big enough (to the top of the cup) to where the birds won't cut them down. This also guards against many insects too, such as ants that eat seedlings. I leave the cups on until the plants start to grow out of the top. They also have the additional benefit of acting as small greenhouses, increasing humidity and temperature levels around the seedlings, promoting growth.

With a little care, you can store and use the plastic cups for more than one season.

Remember that we have been watering the seedlings with a weak mixture of fish emulsion fertilizer and water. As Grams said, "Tomatoes are always hungry."

So once the seedlings are in the ground, I continue watering using this same mixture in the drip-line. Once the plants are large enough to start producing flowers, I stop using the nitrogen-rich fish emulsion and switch over to a balanced 3-3-3 organic liquid fertilizer. I find this fertilizer at my local Farm Supply Store. Remember that nitrogen promotes leaf growth so once the plant has achieved a mature size, it is important to move to a balanced fertilizer to promote flower and fruit production. By using liquid fertilizers, I can feed the plants through the drip-line, which helps to keep the leaves dry and free of mold. Mold is a common problem with tomatoes. Using a drip-line and row covers will help minimize mold on your tomato plants.

FRUITING

All tomato varieties have flowers with both stamens and ovaries. This allows for fertilization to take place, using wind as a pollinator. Long Keepers will be flowering and "set-

All tomato varieties have flowers with both stamens and ovaries. This allows for fertilization to take place, using wind as a pollinator.

ting" fruit later in the season than other tomato varieties. So, no need to worry if you find little or no bee activity in the garden while Long Keepers are flowering. Wind will be the major source for pollination. If you have little to no wind activity in the garden during flowering, a shake of the tomato plant can yield the same result as wind. The best time to do this is midday on a warm day with low humidity.

Additionally, most all tomatoes have a "parthenocarpic" ability to produce fruit. The Latin word literally means "virgin fruit," and refers to the flower's ability to produce a fruit without fertilization.

Green tomato hornworms can be spotted and picked from plants early in the morning. Once picked, tomatoes start to ripen in the cellar.

MOLD AND WORMS

A couple of problems I have on any given year with my tomato plants are green tomato hornworms and mold. The worms are fairly easy to control by walking the rows each morning and plucking them from the tops of the plants by hand. Morning is the best time of day to do this as the worms are generally located at the tops of the plants, close to the tips of the stems, and are easier to spot. As the sun rises, the worms retreat to lower parts of the plant where they can shield themselves from the heat. Once I have the worms collected, I feed them to the chickens who love their morning treat. The tomato hornworms show color variation due to the color of the tomato variety they eat.

Mold can be controlled by using a drip-line water system and row covers. Remember, "They hate showers." Keeping the plants as dry as possible will limit the chance of mold taking hold.

HARVEST

All varieties of Long Keepers I have grown are the type that are picked green prior to the first frost and ripened in the root cellar. Each variety has performed well, setting large amounts of good-sized fruit. When the fruit reaches a mature size it stays green and hard, never really coloring up more than a slight yellowing to the deep green color. The frost is what tells me it's time to pick, not the color or softness of the fruit.

So, a few days before the first frost I pick all Long Keeper fruit. I clean and sort the fruit, discarding any bruised or damaged ones. I also discard any dirty fruit that can't be cleaned by a simple wipe with a cloth or dusting. It is not recommended to clean the fruit with water. Once the fruit is sorted, they are ready to be placed in a shallow cardboard box. Leave enough space to ensure that the fruits are not touching. This will allow the air to easily pass through the stored fruit. The fruit is now ready for the root cellar.

There is another technique for storing Long Keepers in the root cellar. Rather than picking the fruit, just pull the plant out entirely, remove all dirt from the roots, remove any damaged fruit from the plant, and hang the plant upside-down in the root cellar. The plant will wither and dry out, but the fruit will ripen slowly, just like the picked fruit in shallow cardboard boxes. Regardless of the manner you use to store and ripen the fruit, check it each week. Remove any fruit showing damage or bruising to ensure it doesn't spoil the viable tomatoes. After about four weeks you will notice the color beginning to change.

When the fruit looks and feels ripe to the touch, you have fresh tomatoes. For me they are ready sometime in mid-January and stay good into March! I find the longer they are in the root cellar, the less acidic the taste. Now, I won't tell you the taste is every bit as good as what you take from the garden in mid-summer season, but what you do have is something much better than anything you find in the supermarket in January.

Bon appétit!

Kevin Geer runs a small ranch in Northern Baja, California located just south and east of San Diego, California, where he grows fruits and vegetables organically for Rancho la Puerta, a local spa and health resort.

The Countryside Cookbook

We have been publishing recipes that readers have sent us for decades, and most of those recipes will never go out of style. So we have restarted the Countryside Cookbook with three from our archives that we treasure. Like the others, they are all without being pre-packaged and none contain processed food ingredients. If you would like to submit your recipes to the Countryside Cookbook, send them to countryside@swiftcom.com, and if you can, please include pictures of your beautiful work.

Recipes

Hobo Pockets

These work well on a barbecue grill or a low-coal campfire.

For each pocket:

- 1 sheet heavy aluminum foil, greased on inside
- Meat of your choice (boneless chicken breast, boneless pork chop, beef steak, etc.)
- 1 medium potato, washed and sliced 1/8-inch thick
- 2 slices onion
- Vegetables of your choice (green beans, snap peas, thinly-sliced carrots, etc.)
- Salt and pepper to taste
- 1 pat butter

Start with meat, then vegetables, potatoes, salt and pepper as you go. Top with the pat of butter. Fold foil and make firm, tight seams. Place on grill or coals. Turn over after 20–30 minutes (depending on the thickness of your meat and vegetables). Once they are done, open carefully so you don't get burned. Empty contents onto a plate, or eat directly from the foil pocket.

— Bonnie Wolfe, Nebraska

Catherine's Turkey Garden Meatballs

Gluten-, dairy- and egg-free.

You can use whatever vegetables you have on hand. This is my favorite version:

1 lb. ground organic turkey
½ large sweet onion, finely chopped
1 clove garlic, chopped
¼ cup shredded zucchini
¾ cup gluten-free bread crumbs
1 tablespoon organic Italian seasoning
¼ teaspoon sea salt

Preheat oven to 400°F. In large mixing bowl, combine all ingredients well. Form into 2-inch balls with your hands. Place on rack in a small roasting pan. Bake for 30 minutes. Meatballs should be a little crispy on the outside.

Enjoy with a salad, over rice or noodles, or serve as an appetizer with your favorite barbecue sauce.

— Catherine Murphy, Illinois

Dried Apple Cakes

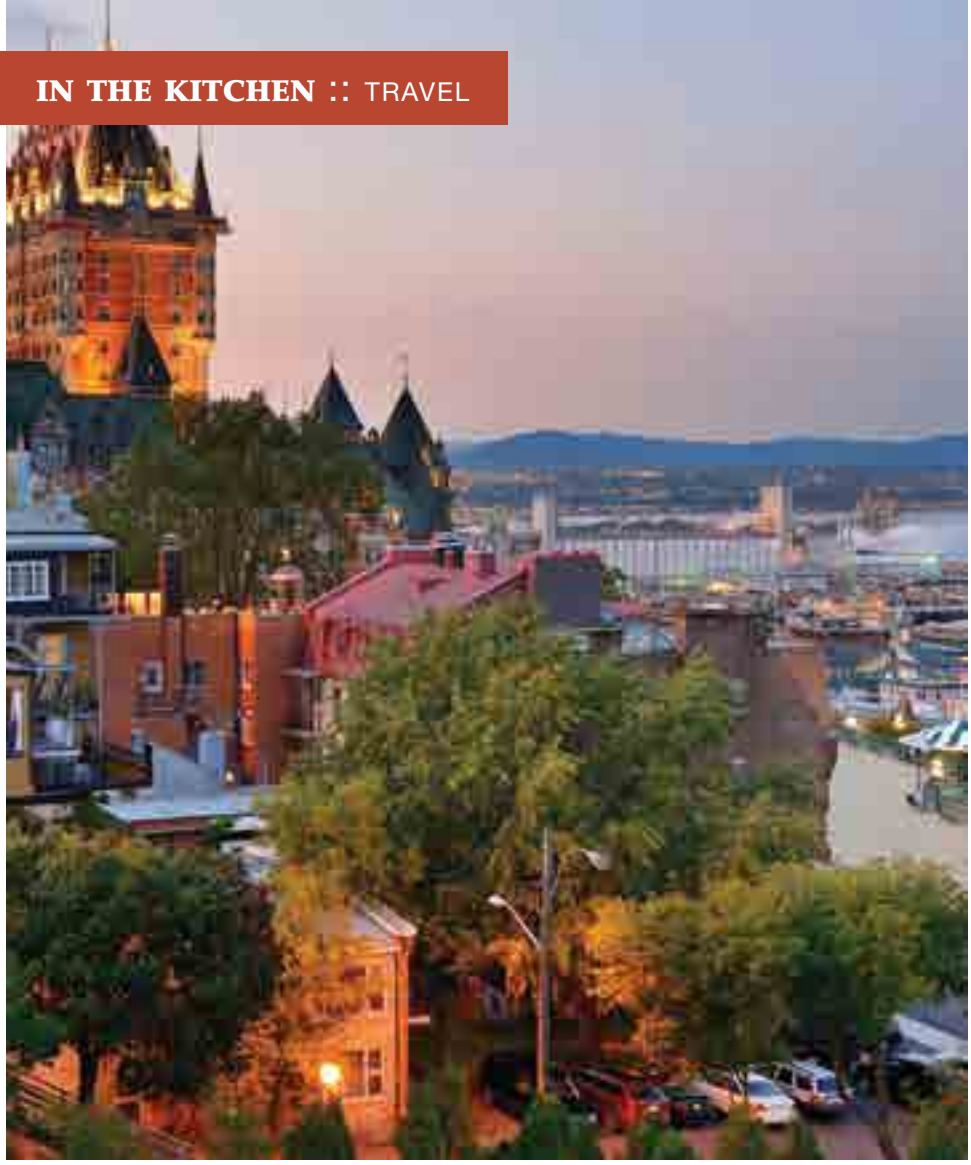
1 ½ cups of chopped dried apples
½ cup of dried blueberries
4 cups of water
1 cup of sugar, divided
2 cups of all-purpose flour
2 teaspoons baking powder
1 teaspoon baking soda
1 teaspoon salt
1/3 cup of shortening
1 cup buttermilk
½ cup sugar
1 teaspoon ground cinnamon
½ teaspoon ground nutmeg
¼ cup of butter

Cook dried fruit in water until tender. Drain and save 2 cups juice (add water if needed).

Mix ¼ cup sugar with flour, baking powder, baking soda and salt; cut in shortening. Stir buttermilk. Turn onto floured surface, knead lightly. Pat or roll into a 12x8 inch rectangle.

Sprinkle fruit over dough. Roll the 12-inch side; cut into 12 slices. Put 2 cups juice, remaining sugar, brown sugar, cinnamon, nutmeg and butter into a large oven-going skillet. Bring to boil. Lower apple slices into syrup. Bake at 375°F for 35-40 minutes.

Any other dried fruits may be used.



Quebec City

An Adventure into French-Canadian Culture and Haute Cuisine

BY HABEEB SALLOUM
A TASTE OF HOMESTEADING AROUND THE WORLD

FROM QUEBEC CITY'S MAGNIFICENT castle-like Le Château Frontenac with its medieval stone towers, gables and copper turrets, we surveyed the St. Lawrence River. From our vantage point in this symbol of this urban center, it was easy to dream of the past—the time when Samuel de Champlain, in 1608, established the city, which was to become the cradle of French civilization in the Americas.

For travelers, this most photographed hotel in the world is a fitting landmark for Canada's oldest city. As a child growing up on the prairies in southwest Saskatchewan, we had many French-Canadian neighbors who pioneered in that region. They had arrived from the province of Quebec to begin a new life homesteading in western Canada. We often visited each other enjoying their wholesome home-cooked meals that included tourtière, rustic pea soup, piping hot buns from the oven, pies and tarts that I later came to identify as the epitome of French-Canadian cuisine. These neighbors often reminisced about Quebec City and its European flavor and I often yearned to see this French metropolis of North America. Today was the day that I was to thoroughly examine the city and relish its cuisine.

Quebec City, deriving its name from the Algonquin Indian word, *kébec* (meaning where the river narrows), was built atop a cliff, overlooking the St. Lawrence. A natural fortress, it became the capital of New France and fended off numerous attacks until occupied by the British in 1759. After the battle on the Plains of Abraham, New France became a British colony until confederation in 1867 when it became a part of Canada.

Even though today Quebec City's metropolitan area has expanded to an urban center of some 790,000, the walls of the original old city (*Vieux Québec*) still stand, inside of which live about 5,000 people. This part of the city has become a much sought after mecca for the hundreds of thousands of non-Canadian annual visitors, a good number of which are from the almost 100 cruise ships that annually stop at the city's port. A historic treasure, Quebec City, in 2008 celebrated its 400th anniversary. An enchanting French monument planted in North America, the city is the capital of the province of Quebec and home of the province's National Assembly, a busy port, and one of Canada's most well known tourist destinations.

Quebec City's charm comes from a combination of its architectural, cultural and historical elements. The mixture of French, English and modern styles of buildings gives the city a very catchy appeal. This, along with its setting, make it one

of the most picturesque cities in Canada. At the heart of Quebec City's charisma is this old walled town, the only walled city north of Mexico. After taking a horse-drawn carriage ride, or as it is known *caleche* ride, around the renovated 2.9-mile (4.6-km) walls that encircle the old part of town, visitors usually climb atop the ramparts to relish the maze of medieval-like narrow streets and the sloping roofs of buildings. On the streets below it is pleasant just to walk inside the stone walls and along the alleyways, enjoying French architecture from bygone years.

In this walled compact area, a living history book of the town, are the most interesting sights in the city. The narrow cobblestone streets and quaint town squares—relics from the past, the venerable churches, including the first stone church built in North America in 1632, and turreted buildings give the area a distinct medieval European look.

There is plenty to see and do along these worn streets such as historic churches, hotels, forts and museums and, in between, boutiques, shops, galleries and cafes or bistros. The concentration of historic buildings in old Québec, some dating to the 1600s, is the reason that Old Quebec was designated by UNESCO in 1985 as a World Heritage Site.

A small part of the old city known as *Basse-Ville* or Lower Town, next to the river, is the oldest quarter in the city where Champlain founded New France and it is filled with impressive renovated old structures from the 1600s and 1700s. *Basse-Ville* lies outside the walls, between the base of the cliff and the river, and has a good number of fine shops and restaurants. Stairways lead down to *Basse-Ville* from the bluff, but an easier way to go is the renovated *funicular*—a glass elevator sliding up and down a ramp that has been in use since 1879.

These two old areas contain the majority of the city's interesting sights, but, beyond the walls of *Vieux Québec,* the modern sections that encompass parks, office buildings, shopping malls and modern homes also have their appeal. In these newer areas and in the old city there are 27 museums, the most important being: the *Museum of Civilization* in *Basse-Ville* which focuses on Québec's provincial history, but has exhibits relating to other cultures from around the world; *Museum of French America*, noted for its stunning chapel; and *Museum of Quebec*; an architectural masterpiece, it is one of Québec's most important museums, containing an extensive collection of Quebecois art and historical documents.

After visitors have explored *Vieux Québec*, they should venture out to explore the remainder of the city. Immediately beyond the walls of the old city is the *Grande Allee*, dominated by Victorian mansions of the late 1800s, and considered by locals to be a smaller version of Paris's Champs-Élysées. Here, where the beautiful people congregate nightly, there is a large concentration of cafes, bistros, restaurants and some of Quebec City's best pubs and nightspots. The most important public building along the *Grande Allee* is the impressive National Assembly, more than 100 years old.

The city of Quebec celebrates its heritage and culture by offering 29 events annually. However, for me, the best time to travel to Québec City is during the famous January-February Québec Winter Carnival—a massive 17-day blowout, known as "Mardi Gras in the snow"; or during the July Quebec International Summer Festival—the largest French-speaking cultural celebration on the continent; or during the New France Festival held annually in August celebrating the arrival of the first European settlers in North America.

Touring the old city is a must to feel the pulse of French-Canadian history. However, to get the sense of the real Quebec is to experience its cuisine. For the week I was there, my mission was to sample the traditional food of the province and to relive the pleasant memories of enjoying

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 Miami, Florida, and then onto Mexico to wrap up his tour of North America.

meals with our French-Canadian neighbors on the homestead.

Quebec cuisine, more than any other in Canada, is truly a Canadian culinary heritage. The origin of these foods goes back to 1534, when the French first came to Quebec—some 86 years before the English pilgrims first stepped ashore in Plymouth. Even though many of the dishes have their bases in the kitchen of France, they evolved in Quebec to become that province's unique culinary art.

Along the St. Lawrence and other rivers, the French explorers found a land of great natural beauty. It was covered with never-ending thick forests, filled with wild animals and fowl and dotted with thousands of lakes and rivers teaming with fish. The countryside abounded in bears, beaver, caribou, deer, ducks, elk, moose, partridges, pigeons, porcupine and rabbits and the lakes and rivers overflowed with bass, eel, haddock, salmon, shad and sturgeon.

In the ensuing centuries, this bounty of nature and the harsh climate set the boundaries for the development of Quebec's cuisine. To survive the cold winter months and the rugged life in the new land, a rich meat diet evolved based upon the abundant wild animals and fish.

This was augmented by the local ingredients used for millennia by the Indigenous Peoples, like wild apples, beans, numerous types of wild berries, corn, dandelions, fiddleheads, squash, lambs quarter and, above all, maple syrup, the base of many of Quebec's culinary treasures. The soups and pies of French origin and the fried fish and puddings, popular after the British occupation, all incorporated native ingredients and gave birth to the Quebec kitchen.

Through the years, the French-Canadians developed a distinct cuisine, different from classical French and other Canadian cooking. Traditional Quebecois cooking came to rely heavily on hearty and delicate thick soups, meat pies and other fat-saturated meat dishes, tracing their roots to the farmers, woodcutters and lumber camps. In today's world, they would be considered killer foods, but in the Quebec of yore they were great foods which nourished the inhabitants at very little cost.

To flavor their dishes, wild herbs, like chives, rosemary, sage and thyme, used by the Indigenous Peoples and, above all, onions, introduced by the French, were the main condiments, often used in early recipes. Preserved vegetables and meat by freezing or salting—for hundreds of years, salted pork formed the mainstay of the Quebec cuisine—kept the people well-fed during the long winter months. Besides these, jams, jellies and relishes made from wild berries were prepared to last, not only through the harrowing Canadian winter, but throughout the year. And then of course, maple syrup, Quebec's natural gift to man, became part and parcel of Quebecois cuisine.

Today, the heavy dishes of the past have been adjusted somewhat to the lighter calorie requirements of modern life. Transformed into light and elegant culinary delights, they cater to the tastes of sophisticated modern laborers and tourists. Even though the early days of French rule still exert an extraordinary influence on the Quebec kitchen, cooks now use much less fat and a whole series of spices, from cumin and nutmeg to allspice and aniseed.

What I experienced in the fine dining of Quebec City is a far cry from when as a child I heard the derogatory taunts "Pea-soupers! Pea-soupers!" tossed against our French-Canadian neighbors. Now these so-called "pea-soupers" are the number one creators of Canadian cuisine as these recipes can testify.

Habeeb Salloum is a prominent Arab-Canadian freelance writer who has traveled to hundreds of countries and tasted their native cuisine. He was raised in Saskatchewan on his family's homestead, and fought in World War II with the Royal Canadian Air Force.

Poutine: French Fries and Cheese Curds

SCALE AS NEEDED TO SERVE YOUR GUESTS

Perhaps, the most well-known French-Canadian dish outside of Quebec, poutine is a fast-food now known from Canada to South America and even in parts of Europe.

French fries, baked or fried
Cheese curds
Hot gravy, spiced to taste
Chopped green onions (for garnish)

Divide fries evenly onto individual plates, then cover with cheese curds. Top with desired amount of gravy, then garnish with green onion. Serve immediately.

Soupe aux Pois: Pea Soup

SERVES 8

Rustic and hearty, this soup is a must on a cold winter's day. Traditionally in Quebec, ham hock is used but it can be replaced by any type of meat.

4 tablespoons butter
2 medium onions, finely chopped
2 cups finely chopped celery with leaves
1 cup finely chopped carrots
4 garlic cloves, crushed

2 cups dried yellow split peas
1/2 pound meat with some fat, cut into 1/2 inch cubes
2 teaspoons salt
1 teaspoon black pepper
1 teaspoon dried savory
10 cups water

In a saucepan, melt butter over medium heat then add onions, celery, carrots, and garlic. Cook until soft, stirring occasionally, about 10 minutes. Stir in the remaining ingredients, bring to a boil, cover and simmer over low heat for 2 1/2 hours, stirring occasionally and adding more water if necessary, until well-cooked.

Serve immediately.

Sauce au Saumon: Creamed Salmon

SERVES 6-8

Tasty, refreshing, and creamy, this is a good way to enjoy a quick lunch. Delicious when served with French breadsticks, but even better when served over hot mashed potatoes.

4 tablespoons butter
1 large onion, finely chopped
1 1/2 cups milk
3/4 teaspoon salt
1/2 teaspoon black pepper
4 tablespoons flour, diluted in 1/2 cup water
1 15-ounce can salmon, flaked with a fork
2 hard-boiled eggs, chopped

Melt butter in a frying pan then sauté onion over medium heat for 8 minutes. Add milk, salt, pepper and diluted flour then stir constantly until the sauce thickens, about 5 minutes. Remove from heat; stir in the salmon. Transfer to a serving platter, sprinkle chopped eggs evenly over top and serve immediately.

Feves au Lard: Pork and Beans

SERVES ABOUT 6

Pork and beans, a Quebec traditional staple continues to be part of French-Canadian identity.

1 cup dried white beans, soaked overnight and drained
5 cups water
4 tablespoons tomato paste, diluted in 1 cup water
1/2 pound salted pork, cut into 1/2 inch cubes
1/2 cup maple syrup
2 medium onions, finely chopped
1 1/2 teaspoons ground mustard seeds
Salt to taste
1/2 teaspoon black pepper
1 teaspoon dried thyme
1/4 teaspoon cayenne

Place beans and water in a saucepan, then bring to boil. Cover and cook over medium heat for 30 minutes. Transfer into a casserole; stir in remaining ingredients. Cover and bake in a 300°F oven for about 5 hours or until beans are well cooked, adding more water if necessary.

Tourtière: French Canadian Meat and Vegetable Pie

SERVES 6 TO 8

This is perhaps one of Quebec's most famous dishes made in countless ways and with all types of meats. It is said that in the province there are as many tourtière recipes as there are cooks.

FILLING

1/2 pound beef, cut into 1/2 inch cubes
1/2 pound veal, cut into 1/2 inch cubes
1/2 pound chicken breast, cut into 1/2 inch cubes
1 pound peeled potatoes, diced into 1/2 inch cubes
1/2 pound peeled carrots, diced into 1/2 inch cubes
1 large onion, finely chopped
1 1/2 teaspoons salt
1 teaspoon black pepper
1 teaspoon fresh or dried savory
1/2 teaspoon nutmeg
1/2 teaspoon allspice
1/8 teaspoon cayenne
1 cup fresh or frozen peas

Place all ingredients, except peas, in a saucepan and barely cover with water. Cover and bring to a boil. Cook over medium-low heat for 1 hour or until meat is done, stirring every 10 minutes and adding more water if necessary. Stir in peas, turn off heat then allow to somewhat cool.

In the meantime prepare the pie crust:

PIE CRUST

3 3/4 cups flour
1 1/2 tablespoons baking powder
3/4 teaspoon salt
1 1/2 cups butter, melted
1 egg, beaten
1 1/2 tablespoons vinegar
3 tablespoons water

Combine all the dry ingredients in a mixing bowl and set aside

In another small bowl combine the remaining ingredients, then pour liquid mixture into dry ingredients a little at a time and knead into dough. Divide dough into two balls, one a little larger.

TO MAKE THE PIE

Preheat oven to 400°F.

Roll out the larger ball to about 1/8 inch, then use it to line the bottom and sides of a 9-by-13 inch casserole or cake pan. Pour in the saucepan's contents. Roll out the remaining ball to form the top layer to fit over the pie filling. Pinch edges of top and bottom layers then cover the fluted edges with strips of aluminum foil. Bake for 45 minutes or until pie turns golden brown. Serve hot.

Tarte aux Raisins et au Sirop d'Érable: Raisin and Maple Syrup Pie

MAKES ONE 9-INCH PIE

An emblem of national pride in Quebec province, Raisin and Maple Syrup Pie is as old as Canadian history. Not too sweet, it is a delicious addition to afternoon tea.

PIE CRUST:

1/2 pound butter
2 tablespoons water
1 egg, beaten
2 teaspoons vinegar
1/2 teaspoon salt
1 3/4 cups flour

FILLING:

1 cup maple syrup
2 tablespoons brown sugar
1 cup raisins, rinsed
2 1/2 tablespoons cornstarch
2 tablespoons butter
1/2 teaspoon cinnamon
3/4 cup water
1 teaspoon vanilla extract

To make the crust, in a mixing bowl, thoroughly combine butter, water, egg and vinegar; set aside.

In another mixing bowl, combine salt and the flour then slowly pour in contents of the other mixing bowl. Work into a dough, adding a little water or flour if necessary. Form into 2 balls, one a little large than the other. Cover with plastic and refrigerate for 30 minutes.

To make the filling, in a medium saucepan, add all the remaining ingredients then stirring constantly, bring to boil. Turn heat to low and stir constantly until mixture thickens, about 1 minute. Set aside and allow to cool.

To prepare the pie crust, using the larger ball, on a lightly floured surface, roll out dough to form 12-inch circle. Carefully place in 9-inch pie pan. Pour in the saucepan's contents and roll out the remaining ball. Gently place onto top of the filling in the pie. Pinch top and bottom of dough rounds firmly together. Trim excess overhanging dough. Flute edges. Using a fork, pierce the top a few times so that steam from the cooking pie can escape. Cover the edges with aluminum foil to avoid over-baking. Bake in a preheated 400°F oven for 50 minutes or until pie turns golden.

Through the years, the French-Canadians developed a distinct cuisine, different from classical French and other Canadian cooking.

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Jars that are not designed specifically for home canning don't always seal well and tend to break more easily than proper canning jars.

ARTWORK BY BETHANY CASKEY

How to Select Canning Jars

BY GAIL DAMEROW

CANNING JARS COME IN two main categories, depending on the diameter of the opening. A narrow mouth jar, also known as a regular or standard jar, has an opening 2-3/8 inches in diameter. The opening of a wide mouth jar is 3 inches in diameter.

Since lids for sealing canning jars come only in those two sizes, the first consideration in selecting jars for canning is to make sure their mouths are one of these two dimensions. The second consideration is to decide what foods you will be canning, because the required method of processing a particular food determines to some extent the kind of jars that are suitable.

REPURPOSED JARS

When I first started canning on my own, a lot of foods sold at the grocery store came in glass jars that fit one or the other size canning lid. I repurposed a lot of one-quart mayonnaise jars, in which I canned apple juice from our orchard. A friend, who ate a lot of oysters that came in jars, kept me supplied in a size jar I found perfect for putting up salsa.

Other foods also came, and sometimes still come, in jars that fit wide or standard lids. Such jars may be cheap or free to acquire, but they are not ideal for canning. For one thing, the top edge tends to be thinner than the edge of a regular Mason jar, and may be rounded rather than flat, therefore offers less surface area for a lid to seal tightly against. Further, repurposed jars are not as well tempered as Mason jars, and therefore tend to break more easily, especially if they are used for canning vegetables or meats that require processing under pressure. Who wants to grow, pick, clean, and cut a canner load of green beans, only to end up with a pot full of beans floating in broken glass?

So, as time went on and I gained confidence in my canning abilities, I acquired Mason jars so I could try my hand at pressure canning. As my collection of jars grew, I weeded out the repurposed jars in favor of the more versatile Mason jars, which may be used for any processing method.

MASON JARS

The Mason jar as we know it today was invented in 1858 by a Philadelphia man named John Landis Mason. Even after early competitors like Ball, and more recent ones like Fillmore, entered the market, the jars continued to be called Mason jars, as they are to this day.

Mason jars come in several sizes. The variety may at first seem confusing, but selection becomes easy if you think about what you intend to put in them and how

Select jar sizes based on what you intend to put in them and how much of that food you would typically use within a reasonable amount of time after opening a jar.

much of that food you would normally use within a reasonable amount of time after opening a jar.

The smallest jars are four-ounce (one-half cup) so-called jelly jars. These jars are promoted as being suitable for jams, jellies, condiments, and flavored vinegars. In our house we find them ideal for canning liverwurst, since one jar holds just enough for four sandwiches.

Jelly jars come in two other sizes—eight-ounce (one cup) and 12-ounce (one and a half cups). All jelly jars are straight sided and take a standard-size lid. Some brands have a quilted pattern or other decorative embossing, making them attractive for gift-giving.

Plain eight-ounce jars are also sold as half-pint, which are the same as eight-ounce jelly jars except they have no decorative pattern. I have a large collection of both styles and use them interchangeably. Plain half-pint jars also come in a squat wide-mouth version that I don't find particularly handy for routine canning.

At our house we use the regular eight-ounce size for specialty pickles, such as pickled beets or pickled green beans and relishes. For jams and jellies we find the 12-ounce jars to be the handiest size.

Pint-size Mason jars come in both standard and wide mouth. The wide-mouth jars are easier to fill and empty, but the lids are more expensive. At our house, nearly all our fruits, vegetables, soups, and stews go into one-pint jars, because that's how much my husband and I can finish in a single meal. We also put up salsa and spaghetti sauce in pint jars.

Pint-and-a-half (three cups) Mason jars come in wide mouth only. We use ours primarily for putting up pickles cut into spears, as they nicely fit vertically into these jars.

One-quart (32-ounce) Mason jars come as both wide mouth and standard. We use our wide mouth quarts primarily for canning tomatoes and our narrow mouth quarts for apple juice. Larger families than our two-person household generally find one-quart jars more suitable than one-pint jars for canning fruits, vegetables, soups, and stews.

The largest common Mason jars are half-gallon (64 ounces) and are sold for canning acidic juices. Only the wide mouth version is currently available, but standard half-gallon jars might still be found at yard sales and flea markets. I have a few of both, but I don't use them for canning. I use the narrow mouth half-gallons for chilling iced tea, because they're easier to pour from. I use the wide mouth half-gallons to store our goat milk, because the rising cream is easier to skim than from a narrow mouth jar. I use the wide mouth also for storing dried beans and pet food.

Canning Code

JAR LIFTER. A device for safely putting jars into or removing them from a canner.

JELLY JAR. A straight-sided decorative canning jar holding 4, 8 or 12 ounces.

MASON JAR. A well-tempered jar designed specifically for home canning; also called a canning jar, fruit jar, Ball jar, or Kerr jar.

NARROW MOUTH. A canning jar with a 2-3/8 inch diameter mouth; also called regular or standard jar.

WIDE MOUTH. A canning jar with a 3-inch diameter mouth.

CARE OF MASON JARS

Before each canning session, check your Mason jars for cracks in the glass or chips around the rim. Careless handling of jars is the most common cause of cracks and rim chips, which prevent a proper seal. Cracks may also result from putting jars filled with cool food into boiling water in a canner for processing, which can cause a jar's bottom to crack. Sometimes the entire bottom drops off the jar, resulting in the loss of both the jar the food in it.

After inspecting your jars, wash and rinse them by hand, or run them through a dishwasher. I like to use the dishwasher because it keeps the jars hot until I'm ready to fill them.

With proper care, Mason jars may be used over and over again, and will last nearly forever. Barring accidents, the jars rarely break during processing, and when properly sealed, the vacuum holds until the jar is opened.

You don't have to spend much time canning before you learn to value your canning jars and start keeping an eye out for season-end bargains and garage sale finds. You also come to appreciate your non-canning friends who are savvy enough to return empty jars after you've gifted them with some of your home canned goodies.

This is the second in Gail Damerow's series about canning. Next up: Selecting lids.

With proper care, Mason jars may be used over and over again, and will last nearly forever.

Before each canning session, inspect all jar rims for chips; a chipped rim will not allow the jar to seal during processing.

Use a pair of sturdy tongs to remove each jar and drain out the boiling water.

BELOW: Use a jar lifter to return the filled jar to the canner.

Sterilizing Jars

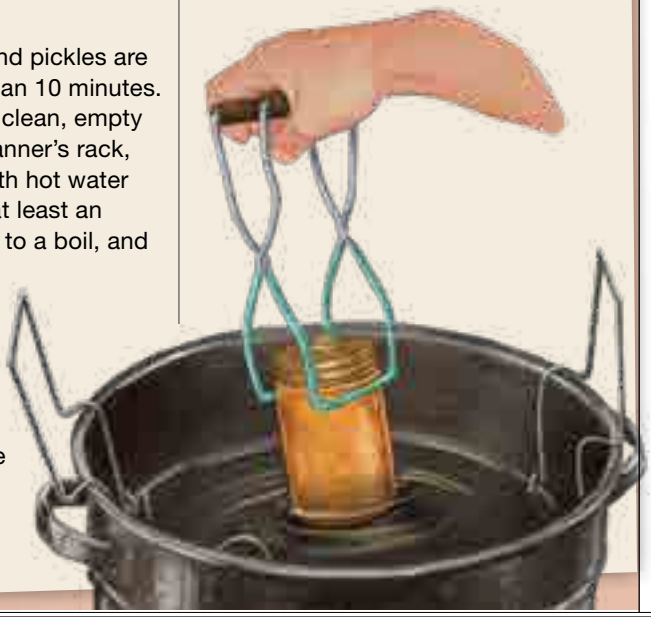
Contrary to popular belief, washing jars in a dishwasher does not sterilize them. In fact, routinely sterilizing jars is entirely unnecessary, as long as the food they contain is processed for at least 10 minutes. The main reasons for so-called sterilizing jars is: 1) a cool jar filled with hot food runs the risk of breaking; and 2) a cool jar may reduce the temperature of heated food before it reaches the canner.

For these reasons, I leave jars warming in the dishwasher until I'm ready to fill them. If I get delayed long enough for the jars to cool, I fill them with hot water to keep them warm.

Some jams, jellies, and pickles are processed for less than 10 minutes. In such cases, place clean, empty jars upright on the canner's rack, and fill the canner with hot water to cover the jars by at least an inch. Bring the water to a boil, and boil for 10 minutes (adding 1 minute for each 1,000 feet you are above an elevation of 1,000 feet). Remove, drain, and fill jars one at a time, saving the boiling water in the canner for processing the batch after all the jars are filled.

Canning books typically suggest using a jar lifter to remove empty jars from boiling water, but in my experience a jar invariably slips off the jar lifter when tilted to drain out the water. For this purpose, I instead prefer to use sturdy tongs. With one prong inside the jar, and one outside, the tongs retain a tight grip when the jar is upended for draining. Be sure to wear an oven mitt so the rising steam won't scald your hand. After each jar is filled, a jar lifter is ideal for returning it to the canner.

—Gail Damerow



Work is man's most natural form of relaxation. – Dagobert Runes

Foraging for Prickly Pear Cactus

In search of this common, tasty fruit

BY CHRISTOPHER NYERGES
CALIFORNIA

THOUGH GENERALLY REGARDED AS A desert plant, the prickly pear cactus is actually rather widespread. Perhaps the only area where you won't find it is in the higher elevations where it could not survive prolonged periods of cold or snow. It can be found on the cliffs overlooking the beaches, in chaparral, in urban backyards, in the interface between urban sprawl and the wilderness. It's a survivor and you can find it where you least expect it.

The prickly pear cactus is perhaps one of the most widespread of the cacti, and is easy to recognize.

The pads are covered with spines as they mature, and at the base of each spine is a cluster of tiny glochids, which tend to be more miserable than the spines when they get into your mouth and tongue and lips. As you become more familiar with the many Opuntias, you'll see that some of the pads are less spiny than others, and therefore easier to collect, clean, and work with.

The Opuntias flower in the spring, and then the oval fruits develop. The fruits are first green, and then, depending on the species, the fruits mature green, yellow, orange, red and purple. The peak of fruit ripening is generally September. They each have their own unique flavor and if you are a connoisseur of subtle flavor, you can use these different cactus fruits in different recipes to great advantage.

My preference is the large yellow fruit, and the very tasty orange fruits.

To collect the fruit, I bring sturdy plastic tubs, dishwashing gloves, which extend as close to the elbows as possible, and long metal salad tongs. Sometimes I also carry a long knife.

In some of the thickets where I collect, I have had to make paths into the cactus so I can move and collect without bumping into millions of spines.

When I begin to collect, I put on my gloves and then pick each fruit by grabbing it with the tongs, and then gently twisting it to remove it from the pad. Then I carefully place it into my plastic tub. I do this until I have nearly a full tub. I put the fruits in carefully so they are not all mushed up and impossible to clean when I get home.

At home, I turn each fruit a few times over a flame on the stove and then put them into the sink, where I will rinse each fruit and

BAD NEWS FOR SURVIVAL FOOD

What the heck is going on?

We were determined to figure out why so much survival food has been disappearing… and where it was going. So we did some digging around on our own and it paid off. Wait until you see what we found out. It caught us totally by surprise because it involves a well-known agency that is responsible for aiding Americans in times of crisis.

The possibility that this agency could have something to do with a potential survival food shortage made no sense to us … unless they knew something we didn't. We were determined to discover the truth for ourselves – and for you, also.

It gets even better – we have the proof in writing!

Just as we were beginning to investigate, our warehouse manager was shocked to receive a request from an official of that very same agency. They wanted to know:

- How much survival food did we have on hand?
- How quickly we can produce more?
- Where is inventory kept?
- Just how fast could they get their hands on it?

We don't know about you, but any time outsiders starts prying into the affairs of private businesses like ours, we can't help but get concerned – and frankly, we are. After all, here's an agency we never heard from before suddenly asking questions about foods intended solely for emergency use in a disaster. Certainly makes you think, doesn't it?

Know what we heard? Nothing.

It's like talking to a wall. But we're going to keep the pressure on until we get some believable information. The truth is, revealing a plot like this could land us in some serious hot water. There's a reason they're not going public with any details. But we are absolutely convinced they are up to something. And we think you and every other American deserves an explanation.

Listen, we all know most people will be woefully unprepared when disaster strikes. The smart among us prefer to take steps to ensure that in a crisis, we won't be relying on someone else to take care of our families. That's our job.

Anyone not taking action will find themselves in the same boat as millions of other brainwashed souls who go through life thinking everything is fine. Until one day it is definitely not fine and they are OUT OF LUCK!

Go to GETFOOD61.COM right now.

We just posted a free video presentation that exposes the truth. You can view it right now at **GETFOOD61.COM.** We have to warn you that you'll probably think what it shows is really disturbing. Because it sure seems like the American people are being kept in the dark about something that could threaten not only our way of life, life, but for all we know, our very lives.

Go to **GETFOOD61.COM** now and you'll also learn what is the #1 item to hoard in a crisis and why supplies of this critical item are so low in some places or even completely gone – unavailable at any price.

See this video while you still can.

Watch the controversial video that thousands of smart patriots have already seen in recent days. Go to **GETFOOD61.COM** and discover the #1 item most critical in a crisis. Go watch this important video now at **GETFOOD61.COM** before they force us to shut it down. What you'll learn could literally save your family's lives.

LOG ON NOW TO GETFOOD61.COM

gently brush with a mushroom brush. Once I am certain they are all cleaned, I cut each fruit in half, and scoop out the inside fruit, which readily separates (in most cases) from the skin. If I am not going to use these right away, I freeze them.

Usually, whether I am going to freeze or use right away, I will put the fruits into a blender and blend it all into a slurry. I pour the slurry through a sieve, which separates out all the seed. I will freeze the slurry in small yogurt containers or even plastic bags. I found that when I used to freeze in bulk in larger containers, I had to thaw out more than I often wanted for one recipe. It's much easier to freeze in smaller containers. In fact, one small yogurt container of nothing more than frozen cactus slurry makes an excellent snack on a summer afternoon.

The cactus slurry can be mixed 50/50 with water for a delicious drink. You could make jams, jellies, pies and various desert items with the cactus pulp.

My wife Dolores used to make a delicious pie with cactus by mixing the de-seeded fruit with tofu and perhaps some yogurt. This was blended to make a pie filling, which she poured into a whole-wheat pastry shell. These cactus pies were better than anything we ever purchased at a store or restaurant, and were always a hit at our wild food classes. Unfortunately, I have never been able to duplicate her recipe. Some have come close, but there was something she did that made it "just so." (Unfortunately, Dolores passed away in 2008 and took her secret with her!)

Eating prickly pear has long been regarded as a folk medicine way to deal with diabetes. Now, modern medicine has confirmed that eating the prickly pear cactus pads (or making juice of them) can help those who suffer from diabetes. (For additional scientific data, see *Prickly Pear Cactus Medicine* by Ran Knishinsky. This book provides the scientific evidence that prickly pear cactus fruits and pads are useful for treating diabetes, cholesterol, and the immune system.)

According to my teacher and mentor, Dr. Leonid Enari, the entire cactus family is a very safe family for consumption. He would quickly add that some are much too woody for food. A very few are extremely bitter—even after boiling—and you'd not even consider using them for food.

If you choose to experiment, just remember that palatability is the key. Don't eat any that are too woody, and any that are extremely bitter. Any that have a white sap when cut are not cacti, but look-alike members of the Euphorbia group.

Occasionally, people have experienced sickness after eating certain varieties. In some cases, this is due to a negative reaction to the mucilaginous quality. There may be other chemical reasons as well. So despite this being a very commonly used food historically for millennia, we suggest you start with very little and monitor your reactions.

Christopher Nyerges is the author of Guide to Wild Foods *and* Useful Plants, Foraging Edible Wild Plants of North America, How to Survive Anywhere, *and other books. He has studied mycology, and led wilderness trips since 1974. He can be reached at Box 41834, Eagle Rock, CA, or www.SchoolofSelf-Reliance.com.*

RIGHT: A view of the young cactus pad, the ideal for eating once glochids are removed.

BELOW: The fruit, as sold in a farmers market.

OPPOSITE PAGE: Views of the ripe fruit of two different *Opuntia* species.

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How to Survive a Flood

BY JAMES SMITH

ACROSS THE UNITED STATES, most Americans are living in or near natural disaster zones of some type. Earthquakes, tornados, mudslides, hurricanes, fires, flooding, volcanoes and more can affect our families at any time. We can't turn our back on the power of nature, not even for a minute.

The reality is that we are much more likely to be involved in a natural disaster than any terrorist attack or dangerous political movement. FEMA, the Federal Emergency Management Agency, documents that there are anywhere from 80 to 250 natural disaster declarations each year. According to a 2008 study of natural hazards mortality in the United States published in the *International Journal of Health Geographics*, 14 percent of natural hazard deaths were flood victims—people who die each year from their lack of preparedness. Don't be a statistic. Plan ahead for survival from floods and stay ahead of the pack.

PLAN YOUR HOME LOCATION

You may think this is common sense, but you'd be surprised how many people don't consider it when purchasing or living in a property. Is your residence, home or apartment in a flood line? Are you living near a levy? What is the danger of levy failure? Most of these answers can be found quickly through some quick Google searches. You can also check with your local municipality or library for guidance and assistance finding answers to these questions.

To determine the safest places to live, you can also consult with local real estate agents. They are a wealth of knowledge and can advise you on some of the safer zones. You may also want to search the archives of your local online news, alternative news and newspapers to read the history of the area you're living in and get a better feel for flooding possibilities and relative danger.

Make an effort to build, buy, rent or live in a home that is out of the danger zone as far as potential flooding is concerned. If you can achieve that, half the battle is won for short-term survival.

HAVE A BUG-OUT ARRANGEMENT

If you're unwilling or unable to change your primary residence, consider having a bug-out location that is out of danger of flooding. A bug-out location is a location that one attempts to get to in a catastrophic situation (also known as a SHTF scenario). A bug-out location is a safe place you can easily escape to with your family to be secure. In case of flooding, this location would also need to be on higher ground.

If your neighborhood is at risk for flooding you should always be ready to leave immediately. This means that you need to keep necessities stocked and easy to grab on a moment's notice. If you have a bug-out bag, make sure it's ready and packed with all the essential items. If you want to assemble your own there are tons of lists out there for every type of family, budget and geographical area, so plan and pack accordingly and make sure your bug-out bag and vehicle is stocked with essential supplies.

Your bug-out location should also be kept stocked with needed supplies, enough to keep you and your family safe, secure, healthy and well fed for as long as it will take to clear the danger and return to your primary home.

Your bug-out location should also be easy to get to, keeping in mind that many thoroughfares and main highways will be choked in case of natural disaster. Plan a few different routes to your bug-out location so if one main traffic artery is blocked you have alternative routes to get you there quickly and safely. Consider investing in a four-wheel drive to be prepared for the conditions on the streets.

Remember, even if your neighborhood is not directly affected there may be long and dangerous disruptions to utilities like potable water, gas and electricity. Neighborhood policing will also be affected as officers are spread thin. Be prepared to go without essentials for some time.

In the case of Hurricane Katrina in August 2005, more than 1.7 million people lost power in Mississippi and Louisiana, and and it took more than five days for food, drinking water and medical supplies to reach residents. It took almost a week to plug the breach in the 17th Street Canal and begin draining the city of water. Even two weeks after Hurricane Katrina 40 percent of the city of New Orleans remained under water. In January, nearly four months after Katrina made landfall, 85 percent of public schools in Orleans parish were still closed. A year after Katrina nearly 100,000 people were still living in 37,745 FEMA-provided trailers. Even with the

To determine the safest places to live, you can also consult with local real estate agents. They are a wealth of knowledge and can advise you on some of the safer zones.

best intentions, the cooperation of local first responders, and the help of the National Guard it can take days, weeks, months, or even years to repair a city affected by flooding.

WHAT TO DO WHEN THERE IS A RISK OF FLOODING

Aside from working to ensure your family is not living in harm's way, there are other ways to stay safe as well. These include monitoring weather reports, keeping current with local news and announcements, and keeping you informed on changing weather conditions.

Monitor local news and radio stations and keep your news on. If you lose power, make sure you've invested in a battery powered or wind-up radio with access to public radio bands and low-frequency transmissions. Most modern hand crank radios, like FRX radios by Etón, can also be charged without the hand-crank. The Etón offers solar charging, USB ports, and car chargers—allowing you to charge the radio anytime, anywhere and without access to electricity.

In a standard two-minute hand crank test, the Etón outperformed the competition and lasted 13 minutes on cranking. Fully charged (which takes about five hours) the radio can be used for about 15 hours. A portable, hand cranking or battery-powered radio will be a needed item in the event of any kind of natural disaster. It will help you stay as informed and connected as possible and keep you abreast of developing news and weather warnings.

With a tuned-in radio, the severe weather alerts and warning sounds issued across the public broadcasting system will alert you to any changes in weather

Listen Up

It's important to listen regularly to your local news and emergency officials for updates on the evolving situation; flooding can sometimes happen quickly. You can find the latest forecasts and dangerous weather conditions at www.weather.gov and www.water.weather.gov. Additionally, some smart phones are able to receive Flash Flood Warning alerts via the Wireless Emergency Alerts system. Visit www.nws.noaa.gov/com/weatherreadynation/wea.html for more information. You also can learn more about common types of flooding and what flood warnings mean on the National Oceanic and Atmospheric Administration (NOAA) website at www.floodsafety.noaa.gov.

conditions. They're meant to snap you back to reality in the event you are not focusing. Additionally, if you live in an area where conditions can worsen quickly, a radio can help you stay abreast of rapidly changing weather circumstances that may otherwise put you or your family in danger if you don't act fast.

We all want to ensure our safety and security in case of natural disasters and flooding, but it also requires forethought and planning. Your preparations may put you in a position to help your neighbors as well. Make educated and informed decisions about where to locate your home and work to gather the supplies you need to survive. If you plan ahead you'll have a better shot at surviving a flood and thriving in the aftermath of a natural disaster.

James Smith is an avid prepper with a passion for self-protection at all levels. He loves to write about survival skills and techniques that can help us to survive in a TEOTWAWKI event.

WHEN THE iGENERATION GARDENS

Good things happen. That's why teaching kids to garden and live sustainably is as important as ever.

PHOTOS AND STORY BY KENNY COOGAN
FLORIDA

TURNING OFF YOUR TELEVISIONS and mobile devices and spending some uninterrupted time with your family and yard may not only be good for your health. It will also make you smarter.

Originally presented at the 110th General Meeting of the American Society for Microbiology in San Diego about six years ago, professors from the Sage Colleges presented a paper titled, "Effect of *Mycobacterium vaccae* on Learning."

Mycobacteirum vaccae, a nonpathogenic species of bacteria that lives naturally in soil, has been found to release serotonin, which helps elevate mood and decrease anxiety. Researchers from the Sage Colleges found that mice exposed to this bacteria not only had a reduction of anxiety but were able to complete a maze twice as fast as those who were not exposed.

How to Change iGeneration to iGarden

- Be the Change You Want to See
- Garden Together • Let Them Plant What They Want
- Require Them to Garden Prior to Electronics
- Reward for Homesteading • Go to Local Garden Events
- Discuss Gardening Together

PHOTOS LEFT TO RIGHT: Kalina Vidovic, gardening with her chickens; Vincent Geraci (10) adding soil to potatoes; Kalina and Ruby Vidovic enjoying Everglade tomatoes; Kalina Vidovic, butterfly gardening.

So if rutabaga races, carrot conquests, bean battles and fennel fencing sound like a whole lot of gardening family fun, get your children outdoors—it will make them healthy and smart. If they resist at first, try, try again. Despite reading a range of articles on the difficulties of engaging children in the chores related to gardening, I have found quite the opposite to be true—kids love getting dirty and helping out.

For the purpose of this article I am referring to those that were born in 2000 or later as the iGeneration. This group of adolescents has never lived without technology. When I take my 110 seventh-grade students to our school garden weekly, despite their wide range of backgrounds and interests, they have all learned the value of working in the garden.

Gardening improves social skills and behavior, increases science achievement scores, appreciation and respect for nature and improves life skills. Gardening can also be a bridge to teaching children about nutrition, responsibility and self-control. As a homesteader, permaculturist and teacher, I encourage you to help change the iGeneration to iGarden—it is good for them and the planet.

HANDS ON ENGAGEMENT

Selecting plants that are disease resistant and produce large amounts of fruits will help boost the self-esteem of young gardeners, and are great crops to start off with. Hardy crops that are easy to grow and mature early keep interest high, as there is something to look forward to daily, early on.

Since the attention span is not always long, plant cherry tomatoes instead of beefsteak tomatoes, or Mexican sour gherkins (they look like tiny watermelons) instead of full-size cucumbers.

Giving children ownership of specific spaces in the garden will help with engagement. Letting them help build the beds, shovel the compost or till the soil will create a sense of buy-in. If the raised beds are made out of cement blocks, have your children paint the outside to make the space special. Allowing the kids to choose the plant location in the garden will also increase their investment into the project.

As psychologist Jean Piaget said, "When you teach a child something, you take away forever his chance of discovering it for himself."

If the child plants a sun-loving plant in a partial shade location and it doesn't grow well, they will learn a valuable lesson. If on the other hand, it thrives and lasts more than its projected season, then the child and you have learned an even more valuable lesson.

Easy Starter Crops

The best starter plants for kids are ones that grow quickly, are hardy and have larger fruits. Here are a few good options to try:

• Baby carrots • Bush beans • Cuban oregano • Green onions • Kale • Lettuce • Mustard greens • Radishes • Peas • Turnips

PHOTOS LEFT TO RIGHT: Seyenam Geraci (18) digging up taro; Adrienne caring for a fairy garden

OPPOSITE PAGE: Vidovic family gardening and preparing loofa together.

STIMULATE THE SENSES

Having a hodgepodge of flamboyant flowers between the vegetables or berries allow opportunities of discovery. Choosing edible flowers will be truly a novel delight. Edibles such as nasturtium, calendula, day lilies or hibiscus are easy to identify and good to start out with. Adding a touch of whimsy through garden art is another fun way to motivate kids to take part in the satisfying pastime of gardening. Growing vegetables with a twist such as purple cauliflower, yellow carrots, mottled beans and tropical fruit will generate curiousity among even the most oppositional worker.

Children will help garden more as they become excited about what is growing. Keeping a daily record of the length of a Chinese long bean is not only fun, but helpful for next year's planting schedule. Many young kids, including the iGeneration, in urban and rural settings, have no idea how vegetables grow or know the taste of a passion fruit or Chinese winged beans directly from the garden.

Exploring fairy gardens, homemade plant signs, hidden gardens and homemade toad houses on the internet will also give your children inspiring garden ideas.

FOSTER A SENSE OF EFFICACY

Explaining what you are doing and why you are doing it will also help keep your children involved. When presented with a problem, question or activity, children ask themselves almost immediately, "Can I do this?"

Researchers have said that effectively performing an activity can positively impact subsequent engagement. If you have been successful in the past, you will want to be interested in similar, future activities. If the child believes they can't perform the task, they will disengage and become uninterested.

In order to strengthen our children's sense of efficacy in gardening, the task should be only slightly beyond the child's current levels of proficiency. This is to say, don't ask them to graft a tree if they have not fully mastered taking cuttings.

At my school, I foster efficacy by scaffolding their learning. Scaffolding is the support given during the learning process, which allows students to successfully reach the end goal. I let them find their own way, which sometimes is not as direct as I would have planned. By only allowing one path to an answer, this leads students to expect answers to always be obvious and linear.

Psychologists in recent years have stated that we typically praise children in this country ineffectively and counterproductively. You can either encourage a fixed or growth mindset. Instead of saying "You're so smart," which encourages a fixed mindset, highlighting the characteristic of the child, the smartness, we should be saying things that encourage their growth mindset.

Saying, "Wow, you really worked hard, and you kept at that project until you got it right," encourages a growth mindset because you're teaching the child that being able to stick to something and work through a difficult task is important—possibly more important than knowing the answer immediately.

My hope, by encouraging a growth mindset, is that I can turn extrinsic motivation into intrinsic. In this way, they will not only know why homesteading is important, but they also feel inspired to do so.

ENABLE

Providing kid-sized tools will empower them to do gardening tasks correctly and safely.

Allowing choice in the garden will create more buy-in from the kids, which will result in a better work ethic. Permitting them to make a mess and not getting upset when they trample some of the seedlings while they are planting is also important. Stay positive and reward the behaviors you want to see.

UTILIZE TECHNOLOGY

Do you or a loved one suffer from nomophobia, the fear of being without a mobile device? So do many of our children, which we can use to our advantage. Since mobile devices are in their hands already, have the kids use the devices to participate in gardening—after all, there's an app for that. Gardening apps can assist with the planting, spacing or identification of your next countryside adventure.

Kenny Coogan, CPBT-KA, is a pet and garden columnist and grows mostly edibles on his one acre homestead. He was awarded the Outstanding Florida Association of Science Teacher's Beginning Teacher of the Year award for 2015-2016. Please search "Critter Companions by Kenny Coogan" on Facebook to learn more about gardening with children.

An App for That

APP NAME	DESCRIPTION
Garden Designer	Before planting, digitally layout plants, buildings, paths, ponds or garden furniture.
Garden Squared	Assists in planning and tracking of square foot gardens, patio container gardens, seedlings, staging and raised garden beds. Details of every plot can be saved along with a journal entry/task tracker.
Gardenate	Includes local planting calendar, ability to track plantings and predict harvest dates. Data, including photos, can be emailed, saved as a PDF or shared with your other phones or tablets.
iScape	Take a picture of your home and tap the screen to add curb appeal, such as trees, shrubs and planters.
Plantifier	Crowd-source free app, that helps with identifying plants based on leaf or flower patterns.

Rule Changes on Drugs in Livestock Feed Coming

Ask your vet if you have any questions regarding the rule changes.

BY CHERYL K. SMITH

YOU PROBABLY ALREADY KNOW that there is an increasing problem with antibiotic resistance in the world. Certain bacteria are becoming resistant to antibiotics so that they can no longer be controlled. The most commonly know is MRSA, or methicillin-resistant *Staphylococcus aureus*. This problem leads to more hospitalizations and medical costs, and more deaths to humans.

What does this have to do with livestock drugs? Increasingly, larger (and some small) livestock producers add antibiotics to animal feed to enhance their growth and to prevent illness. In one study of chicken farmers and their neighbors, a higher percentage of tetracycline-resistant bacteria were found in their feces than in those of city dwellers. In addition, the number of instances of salmonella infections that are resistant to multiple drugs increased between 1979 and 1990, correlating with an increase in antibiotic-supplement livestock feed. The FDA reports that about 80 percent of all antibiotic use in the U.S. is for farm animals.

Just as health care professionals are decreasing the use of antibiotics in their patients, the FDA is continuing to pass rules to decrease their use in livestock, where they are causing an adverse effect on public health. Unfortunately, regulating the overuse by mainly large producers, who also raise their animals in overcrowded and unhealthy conditions, may have an impact on small farmers who have been relying on drugs in feed or water to prevent certain diseases.

The Animal Drug Availability Act of 1996 (ADAA) first established the category of drugs known as veterinary feed directive (VFD) drugs. The most recent revision to these rules took effect on October 1, 2015. They deal with drugs in livestock feed. At this point, the focus is on drugs that are used in human medicine. These new rules will affect farmers, veterinarians and drug and feed manufacturers. They may also be expanded to include other uses of these drugs in the future.

The rules are intended to eliminate the use of these "medically important" drugs to increase growth or performance of livestock, move some medications from over-the-counter to prescription drug categories (effective January 1, 2017), and require farmers to obtain a written order and administer these drugs in or on feed under the supervision by a veterinarian. One result of these rules is that extra label use of medicated feed that has any of these drugs in it is no longer

allowed. Written VFD orders (authorizing the use of such drugs) also must be kept by the veterinarian and the livestock producer for two years.

One outcome of these changes to the rules is that they require an established veterinarian/client/patient relationship. Anyone who is raising livestock should already have such a relationship established for those times when the veterinary care of an animal is beyond the expertise of the farmer. It is important to develop this relationship before it is needed so the veterinarian already knows the farmer and has an idea about the kind of operation he or she is running. An added benefit is being able to obtain drugs needed for routine care without an expensive farm call every time, yet the veterinarian can make knowledgeable medical decisions because he or

Ask Your Vet

MAJOR DRUGS THAT REQUIRE VETERINARY AUTHORIZATION:

- Chlortetracycline (Aureomycin, CLTC, Pennchlor)
- Chlortetracycline + Sulfamethazine (Aureo S 700)
- Neomycin + Oxytetracycline (Neo-Terramycin, Neo-Oxy)
- Oxytetracycline (Terramycin, Pennox)
- Tylosin (Tylan)
- Virginiamycin (V-Max)

COMMON DRUGS THAT DO NOT REQUIRE VETERINARY AUTHORIZATION:

- amprolium (Corid)
- bacitracin (Albac, BMD)
- bambermycin (Gainpro)
- decoquinate (Deccox)
- fenbendazole (Safe-Guard)
- laidlomycin (Cattlyst)
- lasalocid (Bovatec)
- melengestrol acetate (MGA)
- methoprene (Altosid)
- monensin (Rumensin)
- morantel (Rumatel)
- poloxalene (Bloat Guard)
- ractopamine (Optaflexx, Actogain)
- tetraclovinphos (Rabon)

The rules are intended to eliminate the use of these "medically important" drugs to increase growth or performance of livestock, move some medications from over-the-counter to prescription drug categories (effective January 1, 2017), and require farmers to obtain a written order and administer these drugs in or on feed under the supervision by a veterinarian.

she already has seen the operation. This kind of relationship cannot be legally created with a phone call or by email.

Unfortunately, the new rules do not extend to goats or sheep. Any VFD drug that is not labeled for use in these animals may no longer be fed to them. A full list of all the drugs that are included can be found on the FDA website. Note that this list does not refer to drugs that are given by injection—it just deals with those that are added to food.

The overuse of drugs in food-producing animals has created a serious problem with antibiotic resistance and these rules are one step toward solving that problem. Another way to keep animals from getting sick and causing more problems for humans is to give them plenty of space and to feed them a diet that provides proper nutrition and meets health needs.

We all have a responsibility to the public and the Earth to minimize our impact here. These rules should help decrease the problem of overuse of antibiotics and help small farmers improve their relationships with veterinarians. If you have questions about these new rules, ask your veterinarian or read more about them online.

Cheryl K. Smith is a freelance writer who owns a small farm with goats and chickens. She is the author of Goat Health Care *and* Raising Goats for Dummies *and a frequent contributor to this magazine.*

Preparing for the Queen

Getting your first hive means building your setup just right

BY ROMIE HOLL
WISCONSIN

THERE IS A DECISION TO BE MADE when you order bees: do you want the two-pound or three-pound hive? You will only get one queen, but how many worker bees do you need right off the bat? That depends on your hive.

If you are starting a new hive (one with no comb on the frames), you will want the three-pound hive. If your hive has comb on the frames, then the two-pound one is fine, unless the comb needs to be rebuilt and you want to get more workers.

When you get the queen, she is ready to start laying eggs. But she is unable to do so until the comb is built. The more worker bees you have, the faster it can be built. Since worker bees live an average of 21 days, you want the queen to start laying ASAP, and queens live roughly four to five years.

After you order the bees, you have to decide where you want to put them. Having the front of the hive face south (or southeast) is the best, because the early morning sun will get the bees out of the hive faster. You will also want five to six feet in front of the hive so they can fly in easier (they can make do with less room, but seem to be happier with this amount of space).

When you place the hive, do not put it on the ground for a few reasons. One is comfort. It is easier to work on the hive when it is roughly waist high. But the more important reason is because of mites that attach themselves to bees when they are out collecting pollen. You will want the bottom of the hive at least six inches off the ground. Your landing board should have a screen built into it. When mites fall off the bees, you want them to fall to the ground. If you have a solid bottom, they can attach a ride with the next bee that walks past them. Some commercial hives also have a drawer on the bottom (with sticky paper) so you can see the amount of mites that fall. If you have more than one hive, keep three to five feet between them. This makes it easier to work on the hives as the year goes on.

READYING THE QUEEN'S RESIDENCE

Once you have the stand (and landing board down), I always add a queen excluder. These can be made from plastic, wood or metal depending on your choice. Because the queen is a lot bigger than the worker bees, this will stop the queen from escaping the hive and taking the bees with her. (I learned the hard way one year.)

On top of the excluder goes the "living quarters" of the queen. You will have to decide if you want an eight-frame or a 10-frame box and then use that size box for that hive. There are three sizes of honey bee boxes (for both the eight- and 10-frame): Shallows are 5.75-inches tall; mediums are 6.625-inches tall; and supers are 9.625-inches tall. Normally you will use two "supers" for the living quarters for the queen.

On the top box, leave one frame out of the box for now (so only nine in the 10-frame or seven in the eight-frame). You will be using this space later when you install the queen. After the queen is installed, you will put the missing frame in the box. Put the top on the box and you are ready for when the bees come.

PICKING UP YOUR BEES

Bees are shipped on skids (120 hives per skid). When you pick up the bees, they will cut the connecting wood between the hives to separate them from the other hives on the skid. Some bee sellers will ask you if you need a mini marshmallow for the bees (same as what is used in hot chocolate). If you don't have any or don't want to buy any, you will get one for each hive you are bringing home.

On top of the hive there is a metal can and you will see a strip of metal in a slot. The can is where the food, the sugar water, is kept for the bees. The metal strip is attached to the queen's box inside the hive. When you transport the hive home, make sure the hive stays vertical so the sugar water doesn't leak out of the little holes on the bottom.

WHEN THE BEES GET HOME

After getting home, I use welding gloves and my bee suit to protect myself and I am ready to install the

OPPOSITE PAGE TOP: This is what the queen's box looks like. A few bees did escape, which is normal. BOTTOM: The bees are in their hive, and the temporary feeders are in place.

bees into their new home. Before pulling the metal can out of the wood box, make sure you grab the metal strip securely using a vice grip. You don't want to accidently drop it into the hive box and have to fish it out surrounded by the bees.

Using a screwdriver, pry out the edge of the metal can until you can grip it. What you want to do is pull the can out, while sliding the metal strip to the hole and pulling out the queen box. Then replace the metal can until the queen is installed, keeping as many worker bees in the hive box as possible. A few bees will escape, but it is easier to work on the queen's box if you limit the amount.

What holds the queen in her box is a cork on the bottom. You will remove the cork (I use an ice pick) and put that mini marshmallow where the cork was.

After bending that metal strap that is attached to the queen's box into a hook, you will hang the queen's box in the hive over a frame. Remove the can from the hive box and set it to the side. Flip the box over so the opening is on the bottom and shake the box to make the bees fall out and cover the queen. I place the near empty box on the ground next to the hive so the stragglers can find their way to the queen.

Put the inner cover on top of the bees (this is a board with a hole in the middle for feeding the bees). The can might be almost empty from the trip. Place the feeding can on the hole and go make food for the hive. I use canning jars to feed the bees for the first two weeks. This allows me to see from a distance how they are eating and when I need to feed them again. I drill 1/64-inch holes in the lid. This will allow the bees to suck the food out of the can, but it will not drip out when the jar is vertical.

Fill the can one-third full with sugar and the rest with warm (not hot) water. Walking back to the hive, I shake it to thoroughly mix it.

BACK AT THE HIVE

When back at the hive, remove the can and set it off to the side so the bees can get to it. Remove the inner cover. By this time, the bees will be all over the hive and not on top. I place a second queen excluder here. This will keep the queen from laying eggs in the honey boxes later. Replace the inner cover and put on the jars of sugar water over the opening (with the holes down) so the bees can get to it.

By the time it takes the worker bees to chew through the marshmallow (about a day) to release the queen, the hive will smell like home and the queen should be happy and start laying eggs if the hive has comb already.

In two days, go back to the hive and remove the queen's box and put in the frame that you had set aside earlier. Put the inner cover and feeder back. Now you are done for about a week when you either remove the canning jars of sugar water and install one of the several types of feeder (frame, top, or others) or replace the canning jar with a full one every week or so, depending on how fast they eat the food.

IN SIX WEEKS

In about six weeks, you will remove the feeder you are using, add the first honey box to the hive and put the feeder on top. The size of honey box you use will depend on how much you want to lift later.

A "super" will weigh 70 pounds when full of honey. A "medium" will weigh 50 pounds when full. And a "shallow" will weigh 30 pounds when full. So while the bigger boxes mean less work in adding new boxes or removing the honey less often as the year goes on, they are heavier than the others. (The weights are based off a 10-frame box.)

Romie Holl has raised honey bees for five years, and grew up raising them as well, while also caring for chickens a fruit and nut orchard in Campbellsport, Wisconsin.

Raising Quail Outdoors

BY CAROLE WEST
GARDEN UP GREEN

LIVING ON SMALL ACREAGE seems to welcome a lot of challenges when you have a lot of goals to accomplish. Since moving to the country this lifestyle opened the door to learning new skills and opportunities. The idea of raising quail outdoors was exciting because they don't require a lot of space.

I'm often asked, "Why do you raise quail?" With a clear pause I always respond with, "For the purpose of eggs, meat, enjoyment and release."

If you've ever worked on a farm you know that daily chores are a way of life. There are no days off and sometimes when you're splashing through the rain or wiping away the sweat from a hot summer day it's possible to ask yourself, "Why am I doing this?"

I found myself one afternoon asking this question; it led me to rethink some goals and the direction we were heading. It was time to bring back the joy of farming and to do this I realized we needed new ideas, something outside the normal routine. This is when I decided to raise quail.

Mature Bobwhite quail (lower left) and Coturnix quail (in coops) require at least one square foot of space per bird.

I already had experience with raising different chicken breeds and ducks, so how difficult could it be to implement a smaller bird? It really wasn't that difficult; confusion began when I started reading about the different breeds. This is when I realized it was best to start with the Coturnix quail; they are the hardiest of all quail, making them perfect for beginners.

The Coturnix, also known as Japanese quail, was imported to North America in the early 1800s from Europe and Asia. There are several varieties available and they differ in size and color pattern. My favorite in the beginning was the British Range; this was based on color pattern and temperament.

Intrigued by the variety I raised several types; watching them live on the ground was fascinating. Even though Coturnix quail have been domesticated over the years, they adapted to outdoor living perfectly. They were allowed to be birds with an opportunity to hunt for bugs and establish their own nest space.

RAISING FROM CHICKS

If you think getting started with quail could be a new avenue for your backyard or farm, then I recommend beginning with quail chicks. When you start a flock from chicks the learning opportunity increases; you're also able to provide a strong immune system within your flock.

Little quail chicks are raised in a brooder similar to chickens. If you're not familiar with a brooder, it's like a nursery. It's a safe place for the birds to grow up before heading outdoors. A set-up would include a plastic tub, a wire framed lid, bedding, heat light, food and a water dish.

I use hay for their bedding because it prepares them for an outdoor lifestyle. Containers should not be over crowed and cleaned on a regular basis. Little quail will live in a brooder until they're fully feathered—this is around three weeks.

A clean water and food supply is also necessary. Add pebbles or marbles to their water dish to keep them from drowning. Quail are territorial birds, make sure to use a tinted heat bulb—this will decrease the chance of any pecking at one another.

> If raising quail to release sounds interesting to you, then begin by researching the native breeds in your area.

MOVING QUAIL OUTDOORS

Before moving your quail outdoors, provide them with the proper housing. Most of this will depend on the size of your flock and the space you have available. Each full-grown quail requires one square foot of space.

I've used two types of housing for my quail, stationary and mobile, both of which have interaction with the ground. These housing setups are completely enclosed by fencing. Coturnix quail cannot be openly free ranged; they will fly away in an unprotected environment and become bait for sky predators.

The more space you provide for your quail the more exciting your experience will become. The Coturnix quail enjoy flying and they absolutely love to hunt for bugs and nest in tall grass.

In the mornings during feeding, I'm greeted at the entrance with chatter as they wait for their morning meal.

PURPOSE OF EGGS AND MEAT

What most folks don't know about the Coturnix quail is they mature between six and eight weeks. This means you'll begin enjoying fresh healthy quail eggs at that time. A Coturnix quail can produce up to 200 eggs their first year.

They are seasonal layers, to continue egg production during the cool seasons from late fall to winter you would add a heat light inside a sheltered space.

It takes about two quail eggs to equal one chicken egg and they taste great. I've prepared quail eggs many ways; my favorite would be hard-cooked because they provide a healthy snack and can be added to just about any meal. Baking is another option, as they offer amazing results.

Quail have a short life span so raising them for the purpose of meat makes perfect sense. You can harvest for meat beginning at eight weeks. I prefer waiting until the Coturnix are at least 11 weeks.

Native breeds reach maturity at a slower pace and meat-processing age can vary. The meat is tender and flavorful. Native breeds have more of a wild game flavor and offer more meat per bird.

Serving a couple grilled quail with a few side dishes offers a nutritional meal that some only dream about.

HOURS OF ENJOYMENT

What I didn't expect was the hours of enjoyment discovered by sitting in the quail sanctuary watching these birds. This luxury increased when I started raising a native breed, the Bobwhite. This quiet time became moments filled with learning and relaxation.

I have several quail housing options on our farm. My favorite would be the quail sanctuary; this is a 60-feet by 12-feet by 6-feet space. This environment allows the birds to live on the ground, hunting for food, nest according to their instincts, and they can even take the opportunity to test their flying skills.

Quail watching up close is very interesting; it allows the viewer to experience how resourceful these birds can be. It helped me understand why quail are a great alternative to other types of poultry.

Their movement is quick and sometimes very still as they camouflage into their environment. When they nest in the tall grass it can be difficult to see them. This means you should always be careful to watch were you're walking.

Once they become familiar with your presence the Coturnix will tend to crowd around your feet. You won't run into this with native breeds, their flock instincts are stronger and they like to stick together.

WHICH BREEDS TO RELEASE

The idea of raising quail to release happened by accident when a couple of my Coturnix escaped. It was windy and the lid to my mobile coop at that time slipped through my hands while I was in the middle of feeding. I'm going to guess the life of those birds after their escape was short lived.

Watching a couple fly away was incredible. I had no idea how far they could fly. There was a sense of freedom that filled the air and I was inspired. This is when I knew I wanted to try raising native breeds. This led me to the Bobwhite quail where the purpose is focused on release and meat.

Understand native breeds are not as hardy; you may experience a high volume of death during the brooder stage.

If raising quail to release sounds interesting to you, then begin by researching the native breeds in your area. I live in Texas where the Bobwhite quail population has been decreasing. It was a natural choice to start with Bobwhites; they were easy to acquire locally and through online hatcheries.

I've released one flock of Bobwhites, I learned a lot from that first batch. Watching them live naturally was very different than watching the Coturnix. Native breeds are more active and their flocking instincts are stronger. They simply do more with the space you provide.

Their release was at our farm where we're surrounded by open country fields. They stayed around afterwards for a few months and then finally moved on. I can still hear them at night when the sun goes down calling each other and sometimes they even come back for a little visit. This experience has been the highlight of raising quail outdoors.

It's my hope to have sparked your interest to think about the idea of raising quail outdoors. Bringing home a little more self-reliance is a wonderful thing.

Before beginning it's important to research any rules or regulations about raising quail where you live. Information will vary across the country; contact your local agriculture extension department.

When opportunities allow for self-reliance and giving back to nature at the same time, you can't go wrong. My quail experience continues to energize the effort I put forward; helping repopulate is simply an added bonus I really didn't expect. Are you ready to raise quail outdoors?

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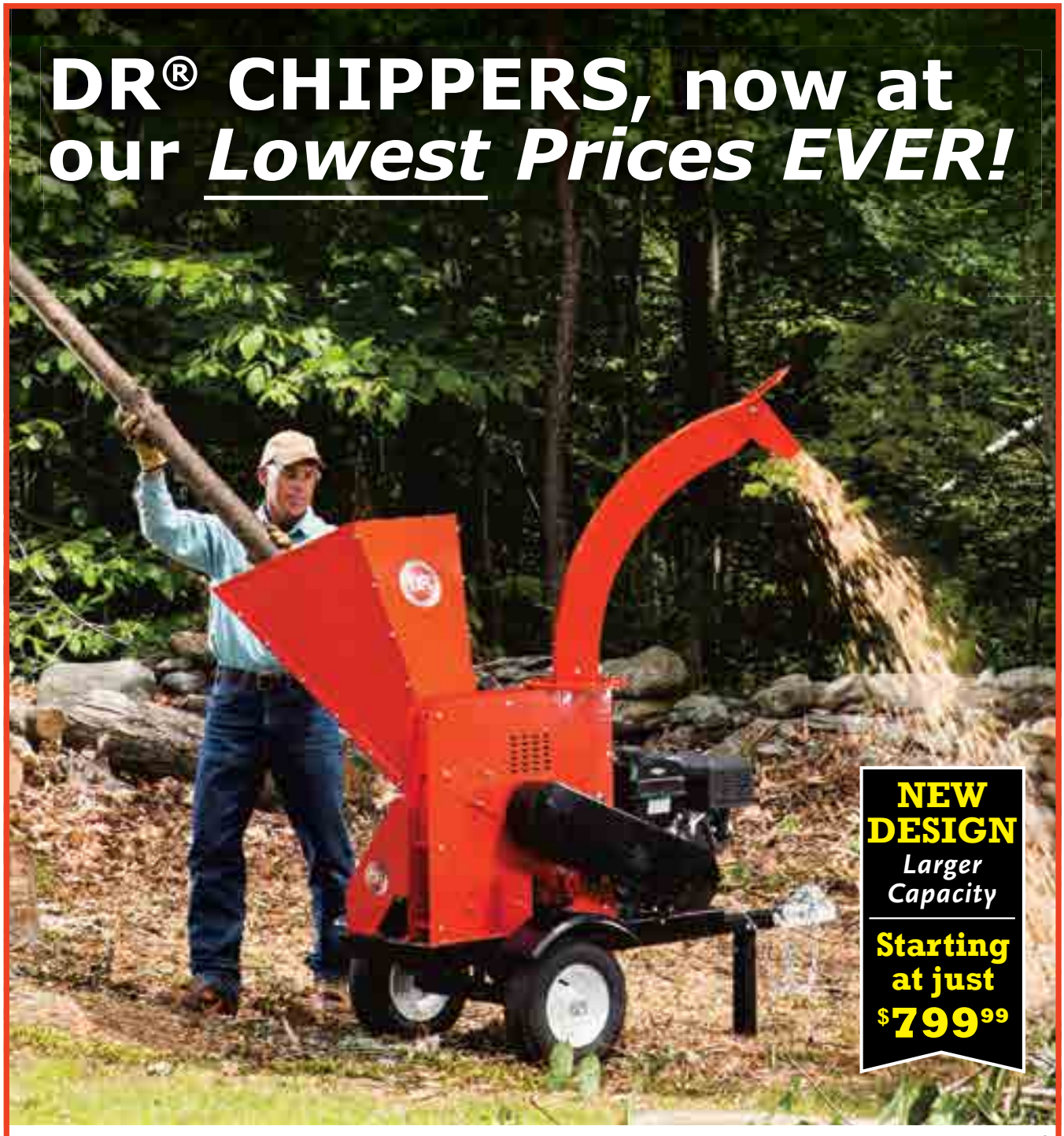

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Culture Shock

Help culture your own probiotics for your backyard chickens

BY JULEIGH HOWARD-HOBSON
OREGON

A PROBIOTIC IS AN organism that gives benefits to its host. Yogurt is probably the most commonly found probiotic around, but it is not the only source available to backyard chickens. A variety of probiotics are very easy to obtain, to culture and to add to your flock's foods on a regular basis. I give my flock water kefir grains or a cultured dairy probiotic, usually mixed with some leftovers in a pan, as well as adding a tablespoon or so of kombucha to their water every time I fill the fount.

Japanese kombucha, fermented at home.

Kefir (both dairy and water), kombucha, cultured buttermilk and yogurts (both the familiar types like Greek yogurt, and the less common ones like Filmjolk) are wonderful for chickens in many ways. The probiotics found in these cultures all boost your chicken's immune systems, plus the dairy is a tasty helping of extra calcium and kombucha is an excellent replacement for apple cider vinegar, which people add to chicken water to boost calcium absorption.

Some yogurts and cultures are easy to culture using only milk and room temperatures. Look for starters of piima, viili, cultured buttermilk, filmjolk and dairy kefir starter (available at health food stores, both brick and mortar types as well as online. I have found eBay to be a good source for decent priced starters). These each require a small glass jar, a coffee filter and rubber band, whole milk and time. Directions vary slightly from person to person, but basically you add your culture starter to a jar of milk, mix it in, let it sit and then voilá. You only need to save a little back to start your next culture, so you can feed the bulk of it to your flock. They love it all and it is really good for them.

If you have a yogurt maker, you can make all sorts of heat-cultured yogurts (Greek, Icelandic and others) by purchasing a small container of whatever plain yogurt you prefer (look for brands that include active cultures, and do not contain extra ingredients like food coloring, artificial sweeteners, corn syrup and others. Organic is always better for cultures.) Follow the directions given by your yogurt maker, or simply add a tablespoon of your yogurt "start" to a few cups of whole milk, then culture it. When cooled, serve it to your flock, who will appreciate the extra calcium and the extra active cultures in their gut. You can also make heat-cultured yogurt in a crockpot or thermos bottle. The trick is to keep the yogurt warm enough to culture and set up, but not so hot that it cooks.

Water kefir is not a dairy culture, but as a culture full of beneficial bacteria and brimming with probiotics. Also known as Japanese Water Crystals or tibicos, water kefir is very simple and straight-forward to prepare. Spring water, plastic mesh strainer, glass jar, sugar and a coffee filter are all you need to get started. Add a couple of tablespoons of water kefir grains (which is the typical starter amount) to a sugar/spring water solution (I use a 1/2-cup white sugar and a quart of spring water) and let it sit for a day or two. Strain using a plastic strainer and keep back enough grains to restart

fermentation. Hens love these grains and they are very good for their system. You can go further and re-ferment the strained liquid using fresh fruit (two days in a jar with a lid—when it is bubbly, it's ready) and serve that to your hens, too.

Kombucha is another non-dairy culture that hens love, and happens to be loaded with healthy things for them. This requires a large glass or plastic container, with a loose fitting lid, brewed black tea, white sugar, and a starter, which is called a SCOBY (symbiotic culture of bacteria and yeast). Brew two quarts of black tea, let it cool, and then add up to two cups of white sugar and the SCOBY. Let it culture up for a day or two, then add a tablespoon of this resulting liquid to your hens' water every day. You can also give them parts of the SCOBY when it gets too big (and a healthy SCOBY will!)—my hens love it cut up into little pieces. Refresh your kombucha with more cool tea and sugar when it seems too vinegary or gets too low in the container.

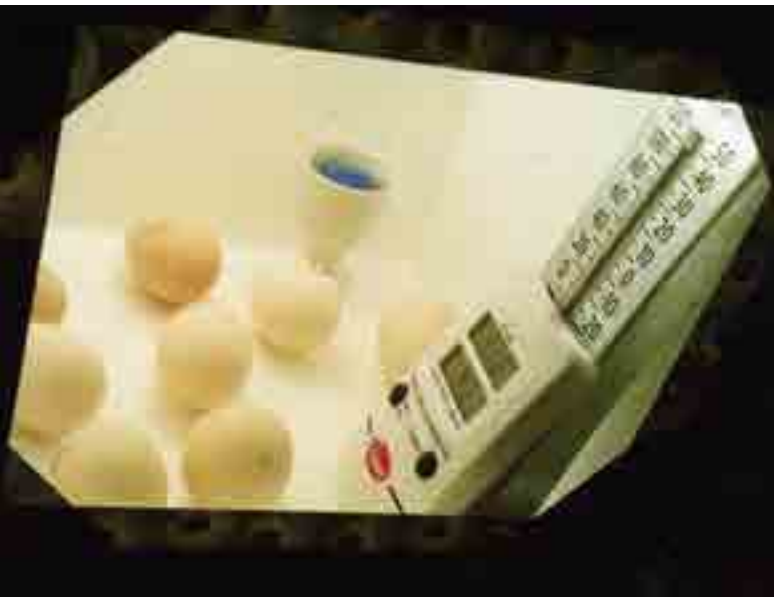
You can try one or all of these cultures; each of them has its own taste and strong points. I recommend not trying all of them at once, as each culture takes a little bit of attention every day. It's best when you are first trying them to swap them around so you get to try a lot of different ones and figure out which ones you like best and which ones your flock likes best too. Organizing a culture swap is a fun way to obtain new starters—gather a few chicken buddies and have each of you obtain a culture (make sure each of you gets a different one), then every two weeks or every month, get together and swap starters with each other. You won't have to swap all your favorite culture away, either; you just have to swap enough for someone to be able to start their own culture with. You can send your culture starts via the U.S. Post Office (carefully packaged in things like doubled zip-type bags), so you can organize an online swap too, which is a wonderful way to build community while building healthy chickens.

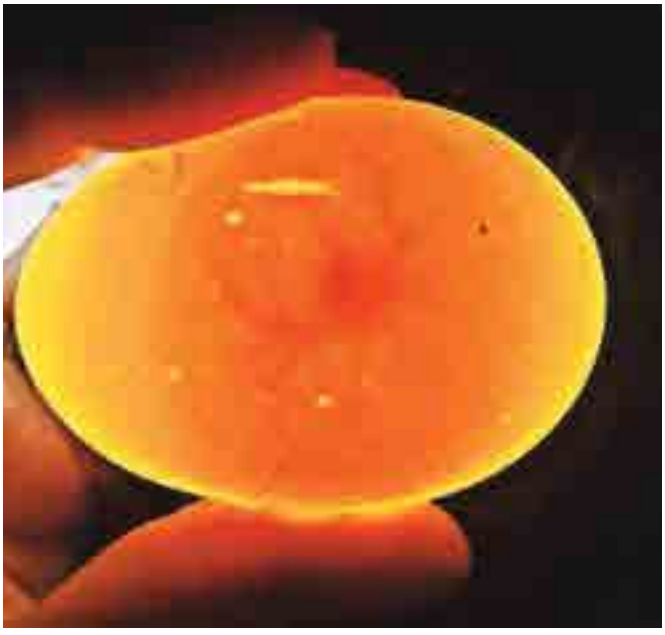
If you find that you have no time to tend your cultures, for any reason, you can put them in the refrigerator, which will slow them down for a week or two, or freeze them indefinitely (except for your SCOBY which can stay in the fridge for a fairly long time with no bad effects.) It takes a cold or frozen culture a little while to recover, but…once it's re-acclimated, it will do just fine.

Probiotics are a very natural and very gentle health boost for your flock. They supply an amazing array of system-supportive beneficial bacteria and yeasts. And we all know a strong system is a strong hen!

Probiotics are a very natural, very gentle, health boost for your flock. They supply an amazing array of system-supportive beneficial bacteria and yeasts. And we all know a strong system is a strong hen!

Former owner of New Suburbia Backyard Farm Store in Beaverton, Oregon, Juleigh Howard-Hobson now owns Our Folkway Farm, a 10-acre permaculture farm in the wilds of Cascadia. Her flock of chickens made the move with her. Her home/hen/harvest focused work has appeared in places like Home Education Magazine, Hip Mama, Hex Magazine, Have Milk Will Travel *(Demeter Press) and* Tending Your Inner Garden: Winter *(Golden Tree Communications).*





A Homemade Incubator

BY
BRANDI TAIT
ALABAMA

THIS INCUBATOR IS SMALL, but you can go larger if you use a fan to move the heat. I like to start with between four and nine eggs to improve the chances of hatching with the small incubator.

- Take your heat lamp apart. Put the socket on top of a Styrofoam cooler lid and trace the outline of the socket, so you can cut a hole that it will fit perfectly through. Let the cord run out and make sure you can reach the on/off switch from the outside.
- Take an 8-by-10-inch picture frame, remove the paper and cut it about ½-inch off of each side of the paper. Use it to trace the viewing window in front of the cooler.

Materials (cost)

Styrofoam cooler with lid ($1.88)

Heat lamp ($10)

8-by-10 picture frame with glass ($1)

Thermometer/Hygrometer ($4.99)

Utility knife

Duct tape ($3)

Small bowl of water

15-watt lightbulb (4 for $1)

Small plastic fan (optional)

Flashlight or candler

Total cost: $21.87

- Duct tape the glass to attach it to the cooler inside the window frame.
- Plug in your incubator! You are ready to test it out. Place the thermometer/hygrometer and a small bowl of water inside the incubator.
- Punch a few holes into each side of the incubator for ventilation.
- Don't put your eggs in yet! The incubator needs to run a few days so you can get the temperature and humidity where it needs to be. The temperature needs to be at 99.5°F and humidity at 50 percent for days one to 18, and then 60 to 70 percent for the last few days. You will need to turn the eggs three to four times per day.

Brandi Tate made a similar brooder box out of cardboard boxes and says, "It's recycling at its best!" She writes from her home in Chunchula, Alabama.

Lesson #5: How to Safely Control Ants Around the Home

BY LIL ROBERTS
CALIFORNIA

THIS IS THE TIME OF YEAR when the ants decide it might be great to come in the building to see what they can find to take to their nests for winter storage. And they wind up everywhere.

With little children and pets, the chemical sprays are not a good idea, and even for adults those sprays can be bad news. Breathing in the fumes can make you wind up in E.R. if you have breathing problems.

For a safe ant control, go buy a container of baby powder. You can get it at the Dollar Tree for a dollar, so you can get two or three and have them on hand. Find where the ants are coming in and sprinkle some of the talc around where they are entering. They cannot walk through the talc; it kills them. Check along the baseboards and under the kitchen sink. They come in where the pipes enter the home, in the bathroom, kitchen and laundry room. Sprinkle the powder around the pipe areas.

We have had them come in the wall outlets in the house, and I take some water and soak a ball of cotton, dab around the outside of the plastic cover, then put powder in my hand and toss it against the wet area. It will stick, dry, and do the trick. The best part is, once they are gone, you just take a vacuum, brush, paper towel, or whatever and clean up the baby powder. Nothing is harmed but the ants. If one of your children happen to touch the area, it's no big deal, they are safe from any chemicals (just don't let them inhale it). Just sprinkle a little more baby powder where they removed it by accident. If it is not raining, you can sprinkle the baby powder outside at areas near the home where you see a trail of ants. If the ants are outside headed away from the home, I leave them alone. I just do not want them in my home, like they do not want me or my baby powder in theirs. Hope this helps all of you during the ant season, which in some areas can be all year long.

Lil and her husband, Rex, are retired. They have lived in the country all their lives, and now live out in the country surrounded by almond orchards. They have several animals, including dairy goats, chickens, geese, quail, dogs and barn cats, and raise their own beef for butchering.

How to Handle Young Wildlife

It's that time when newborns are starting to explore

BY
SHIRLEY
KELLY
COLORADO

THE TIME FOR wildlife to be born has arrived in many states, usually occurring in May and June. By now, the newly born are taking their first steps into this large domain, sometimes near watchful people. The Division of Wildlife is reminding the public that the well-intentioned impulse to save what appears to be an orphaned or abandoned animal can often lead to unintended consequences, including the death of an animal.

For many people, a common reaction when seeing a young fawn or elk calf is to treat it as they would a human baby and attempt to rescue. Division officials warn that projecting human behavior onto young wildlife often does more harm than good.
The instincts that leads the female to leave the offspring alone at times is a natural method of protection. The last thing it needs is human intervention.

I have lived in Glade Park for more than 48 years and worked several years for Wildlife Rescue. There were many times when a knock on the door would bring people with a small fawn or calf. This meant explaining to them why the small creature should not have been moved, and then a trip to the place they had picked it up and a couple of trips back to the destination to make sure the mother had found the young one, which most of the time was a success.

Deer are a common example. A fawn that stumbles about weakly while learning to walk will attract predators, coyotes, mountain lion and many others, so evolution has provided effective methods of protection. Newborn fawns are naturally well camouflaged, don't emit scents that attract predators and can lie still for a long time. As a result, they are actually safer if their mothers leave them on their own. Even a curious person watching a fawn at a distance could alert predators to the animal's presence and prevent its mother form returning.

In some rare cases when the young animal's mother has been hurt or killed, there are steps you can take to protect the orphaned offspring. If the mother of a young animal does not return for more than 12 hours, or it is obvious that it has been hurt or killed, it is best to report the location to the Division of Wildlife. Trained personnel or volunteers can respond and make sure the animal can be taken care of.

Many orphaned animals can be taken to licensed wildlife rehabilitation centers where trained personnel work hard to make sure the animals will be saved.

People are cautioned to avoid "rescuing" the animal themselves or trying to keep it as a pet, which in most cases is illegal. Even the best efforts to rehabilitate an injured or orphaned animal can lead to poor nutrition, stress and behavioral problems. Young animals will often "imprint" on a caregiver, a role-played normally by their mother. Even if a person successfully nurses a baby animal, the young may learn to become more comfortable around humans, which makes it necessary for the animal to be kept in captivity. Associating with humans will also prevent the young animal from learning the skills it needs to survive on its own. A wild animal held in captivity by an unqualified caregiver can also present public safety risk as it can bite or attack a caregiver or others.

Every case is different, so it's best to let trained wildlife staff or volunteers respond and make a determination. Once a human intervenes, the animal's future becomes more limited.

Because dogs explore off-trail areas and will team up with other domestic dogs to run in packs, the Division of Wildlife strongly recommends that people keep their dogs leashed. If a dog approaches a young fawn or calf the mother will likely charge the dog and possibly injure it. Keeping it on a leash will keep the dog safe, and will prevent the chasing wildlife causing injuries or death.

Shirley Kelly would like to thank Mike Porras with the Colorado Division of Wildlife for all the information.

An open wound or catface indicates potential rot.

Dealing with Dangerous Trees

BY BEN HOFFMAN
MAINE

ALWAYS, BEFORE CUTTING A TREE, carefully examine the tree, the trees around it and the ground where it will fall. Are there any dead limbs or debris in the tree (widow makers), or neighboring trees that may fall on you? Does the tree lean, or is the crown heavier on one side, or laden with snow that may affect its balance and direction of fall? Are its branches intertwined with other trees in such a way that it may hang up rather than fall freely? On a windy site, a tree may not lean but strong prevailing winds can create stresses that cause a growth reaction in the tree. A decided lean or unbalanced crown will affect wood strength—compression in softwoods, tension in hardwoods.

If a tree falls on a large rock or stump, it may break, or rebound. Cut any brush that may affect your work, and always create an escape path behind the direction of fall, at a 45-degree angle. This is your protection in case of kickback. It may also be wise to cut brush and small trees in the area where the tree will fall in order to make limbing easier and safer.

Trees that are straight, healthy, with balanced crowns, are easy to fall, but all trees are not that way. In fact, if you own a woodlot, the straight, healthy trees are the ones you want to keep. The candidates for removal are diseased, poorly formed, leaning or rotten. Are there any large wound scars or cat faces on the trunk? I learned to deal with problem trees the hard way, fortunately surviving, by the grace of God, some hairy experiences. Some of my friends were less fortunate and suffered severe injuries.

If you cut firewood to improve your forest, you will be cutting the worst trees—dead, dying, seriously injured, poor form, ratty crowns, partially uprooted leaners. Trees with decided lean or heavy crowns on one side or rotten and hollow butts present problems. Leaning trees produce reaction wood. With conifers, the reaction is weaker compression wood on the side toward the lean, rarely a serious problem, but be aware of it and leave a larger hinge. And be careful when cutting a soft wood with a dead top; pounding on a wedge may cause enough movement and vibration in the top that the wood breaks and drops on you.

Hardwoods that lean badly or have lopsided crowns often have reaction wood on the backside—tension wood that is brittle and weak. When cutting from the back, tension wood may break suddenly and the tree will fall before you expect it, creating a "barber chair." The safest way to drop them is to bore into the trunk, parallel to and above the hinge, leaving the tension

wood intact, then cut back through the tension wood. When that last inch is cut, the tree will drop quickly. Bore cuts are dangerous unless done properly—the tip of the bar can kick the saw back, *hard*, unless the saw is revved up. Unless you are experienced with a chainsaw, I strongly recommend having a pro show you how to make a bore cut. Poorly made bore cuts cause problems.

The objective is to drop a tree exactly where you want it so as to minimize damage to other trees, reproduction or to facilitate its removal. Often, a nearby tree crown may be in the way. The hinge is normally uniform in thickness but you can swing a tree to one side to avoid a nearby obstacle such as a tree crown. Make the notch so as to fall the tree free of its neighbor; then, on the back cut, leave more holding wood on the side toward which you want it to lie. The tree will begin falling in the direction of the notch, missing the crown of

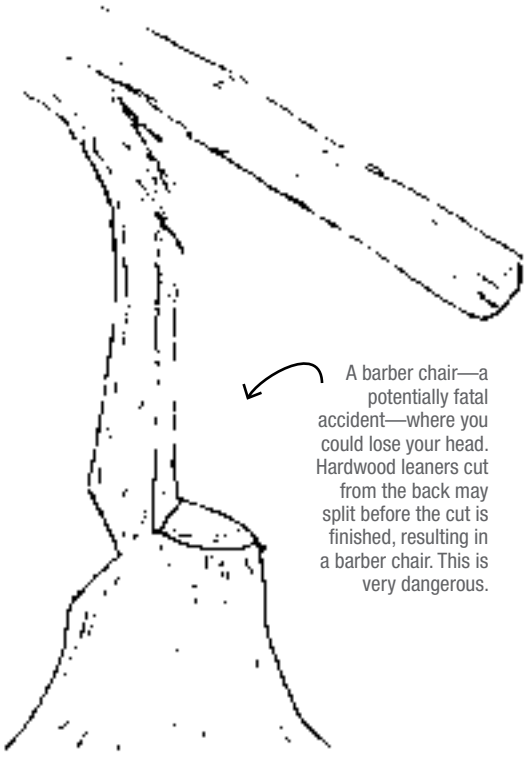
This tree grew in a clump of six, leaned toward the light, has a heavy crown on that side and likely has tension wood on the backside.

its neighbor, but the extra holding wood will cause it to swing to that side. This is a good method to prevent hanging your tree in another (or damaging its crown).

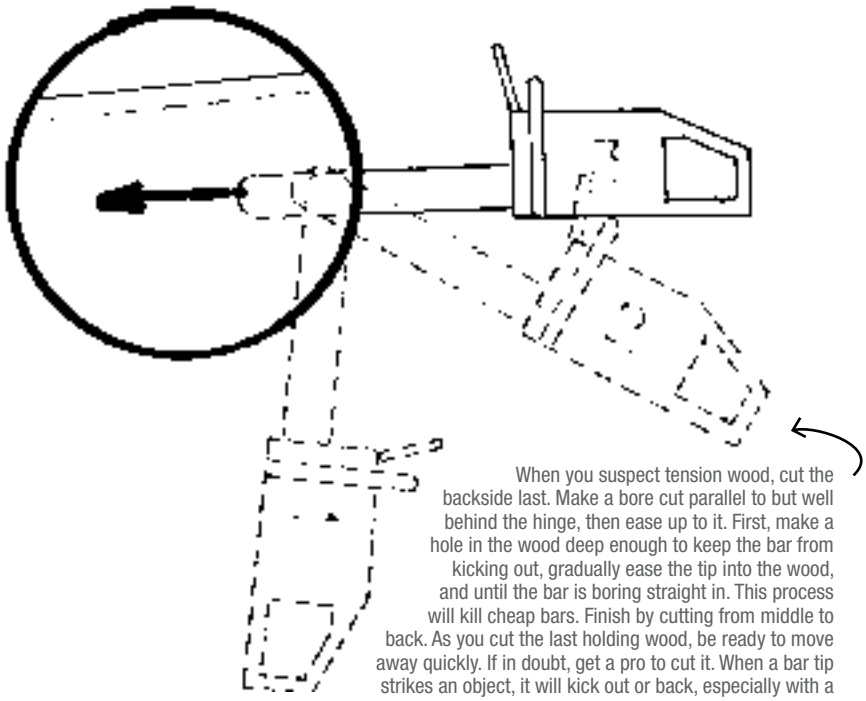
Leaners are obvious, but rotten or hollow butts may not show up until you begin cutting. Wounds on the trunk may indicate rot. Old-timers pounded on the trunk to discern if it was hollow, but that doesn't always work. You may not know until your undercut has started. If the rot/cavity is large, try another cut about 16 inches (firewood length) higher (butt rot often decreases as you go higher in the tree). If there is rot, a shallow undercut gives more hinge. I commonly cut firewood trees about 32 inches up—it saves bending over, holds the stem off the ground for easier limbing, and I can easily cut the stump off flat and close to the ground. Loggers make stumps as low as possible to maximize recovery of quality saw and veneer material.

The open-faced notch (right) with a bore cut behind it. Be sure to bore well behind the notch—I bored too close to the notch, the hinge crushed and my saw was pinched. I used a second saw to make a new cut 16 inches above this one.

Do not stand and watch as a tree starts to fall. Scram! I photographed a faller in British Columbia as he stood and watched a 90-foot lodgepole pine go down. About a month later one of the crew was seriously injured when the tree he was watching rebounded and smashed his upper leg. He died from loss of blood on the way to the hospital. If a tree does not begin falling when you expect, slowly pare away the hinge, maybe try wedges, and be ready to move quickly in case it kicks back or rolls after falling.



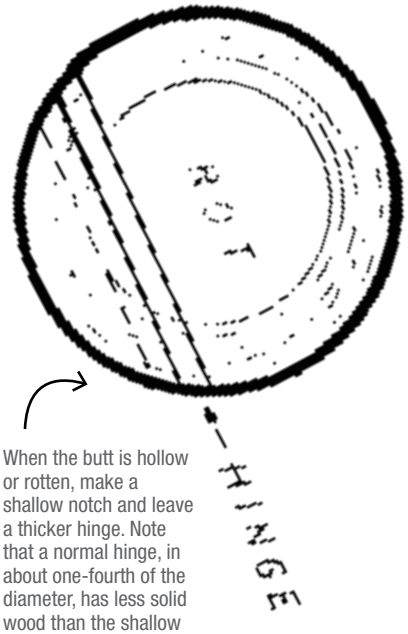
A barber chair—a potentially fatal accident—where you could lose your head. Hardwood leaners cut from the back may split before the cut is finished, resulting in a barber chair. This is very dangerous.



When you suspect tension wood, cut the backside last. Make a bore cut parallel to but well behind the hinge, then ease up to it. First, make a hole in the wood deep enough to keep the bar from kicking out, gradually ease the tip into the wood, and until the bar is boring straight in. This process will kill cheap bars. Finish by cutting from middle to back. As you cut the last holding wood, be ready to move away quickly. If in doubt, get a pro to cut it. When a bar tip strikes an object, it will kick out or back, especially with a slow chain, so keep your saw revved up when making bore cuts. Be especially careful to not to cut unto the hinge!

With hardwoods (deciduous trees), the side away from the lean is under tension and forms tension wood that is brittle, weak and likely to split. If a tree is leaning badly, when cutting in from the back, tension wood can break suddenly and the tree will fall unexpectedly, creating a "barber chair." Hardwoods with a decided lean, or a very heavy crown on one side, call for much more care in falling. The easiest way to drop them is to bore into the middle of the tree, leaving the tension wood intact, then cut back, through the tension wood. When that last inch is cut, the tree will drop quickly. Starting bore cuts is dangerous unless done properly, as the tip of the bar can kick the saw back, hard.

You might also encounter a tree that is both leaning and hollow or rotten, and that calls for more care, especially with softwoods. A leaning conifer with rot or hollow butt will have compression wood on the lower side that is weak; hence the hinge must be thicker. In these situations, a shallow notch gives a thicker hinge and may require wedging.



When the butt is hollow or rotten, make a shallow notch and leave a thicker hinge. Note that a normal hinge, in about one-fourth of the diameter, has less solid wood than the shallow hinge shown with the dashed line. With shallow notches, wedges may be needed to encourage the tree to tip over.

Safely Limbing and Bucking a Downed Tree

BY BEN HOFFMAN
MAINE

MANY COUNTRY FOLKS buy their firewood in long lengths and then cut and split them. For them, bucking is the major use of a chainsaw, and it may be worthwhile to get a saw of 60 cc to 70 cc with a 16- to 18-inch bar. My 52 cc Husky and 16-inch bar are fine for ash up to 24 inches, but a few more ccs would help with rock maple and oak. If you have had little experience with chain saws, better to get some practice cutting logs before falling standing trees. The most important consideration is to cut it to length ASAP so it can start drying. Cutting stems into products, called bucking, will develop some familiarity with the saw before delving into the more dangerous job of cutting a tree down.

On the surface, bucking tree stems into sections seems pretty simple, but consider some of the challenges. If the stem is perfectly straight, resting on perfectly flat, level ground, no problem—except keeping your bar and chain out of the dirt. Otherwise, you face tension and compression forces in wood that is under stress. Figure 1 on on the next page shows a log resting on uneven ground, supported at two points. Midway between the two points, the log sags, causing compression in the upper half and tension in the lower half. In Figure 2, one end of the log is unsupported, causing the reverse. Cut the compression side and your saw will be pinched; cut the tension side, the stem may split. In both cases, cutting into a neutral side first does not release either compression or tension forces. Often, obstacles such as trees, rocks or stumps cause side pressures (Figure 3).

Start bucking by cutting the off side, then a little wood from the compression side, and finish by cutting the tension side. You can feel compression forces as they begin to bind your bar and can see tension as the saw kerf gradually opens. When cutting a compression side, slide the bar back and forth until you feel pressure, then switch to the tension side. Always, before cutting, try to visualize the stresses in the wood and how they will respond—each situation requires a different approach. Keep some wedges handy.

For those cutting timber from their woodlot, before bucking a tree into logs, you must remove the limbs. Limbing is the cause of most accidents, though they are not as serious as those from falling. Long bars are probably the major cause of limbing accidents. Tension/compression forces are often present in limbs, sometimes severe (Figure 4) because branches on the underside of the stem are under pressure. Before cutting, analyze each limb to determine what stresses are likely.

Check the three limbs on the right of the tree in the photo on this page of the whole tree on the ground. The first limb is free with most of its weight to the right. Cut this limb from the top (tension side) and it will fall freely. But the second limb presses against the ground—cut it from the top, your saw will be pinched, so cut it from the underside. The third limb,

A large maple tree with a lopsided crown of large limbs. How would you deal with the first three limbs?

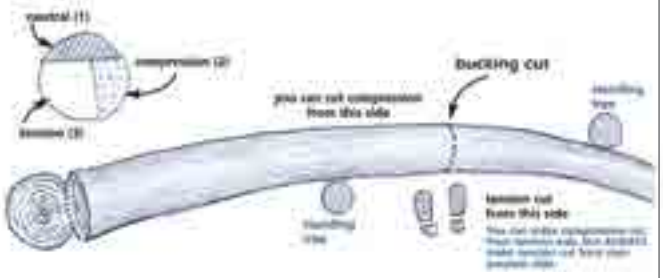
PHOTO BY BEN HOFFMAN

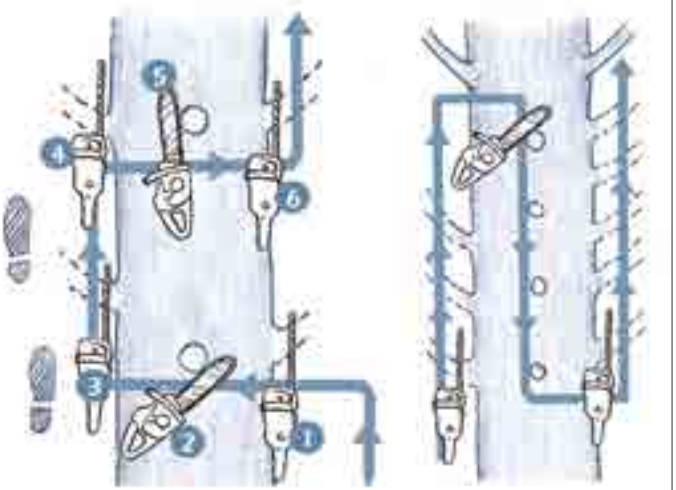
Limbing is the cause of most accidents, though they are not as serious as those from falling.

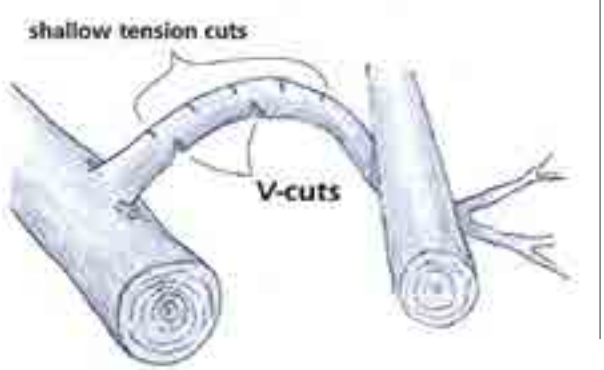
under sufficient pressure that it is split, is too close to the ground to cut from the bottom. The best bet is to carefully make a V cut from the top, just beyond the split. To cut the V, as soon as you feel pressure against the bar, remove it and make the second side of the V. Then, widen the V until you get through the limb. To safely cut brush and hardwoods with branches bent sharply (Figure 4), make several shallow cuts to relieve tension.

Many conifers have whorls of limbs at the end of each year's height growth and the stem is supported by many fairly small limbs. Scandinavians have developed several systems for removing such limbs, the lever (Figure 5) and sweep (Figure 6) methods. The lever method is suitable for trees with larger limbs fairly well distributed along the stem and the sweep method works well for slow-grown northern conifers with many small limbs.

To simplify limbing small conifers, fall them across another tree to hold them off the ground, preferably at waist height. With an elevated stem, you can slide the saw along the stem rather than carry it. Swedes often fall trees across an elevated roller, similar to a sawhorse with a roller on top. As the stem is bucked into sections, it is pulled across the roller rather than walking along the tree. One cutter I studied felled up to seven trees together so he could limb all of them at once.







DRAWINGS COURTESY OF *SAWMILL & WOODLOT* MAGAZINE

FIGURE 1
Bucking when the log is suspended at two points. Begin cutting at the top, gradually rotating the saw away from you to cut the off side. Next, begin cutting from top to bottom, sliding the bar back and forth in the cut until you feel the wood begin to pinch. When the cut starts to close, saw the underside, with the top of the bar, until the cut is completed. When working on a slope, cut from the uphill side so the logs will not roll into you.

FIGURE 2
Bucking when the log is unsupported on one end. First, cut an inch or so into the bottom side so the wood will not tear when the cut breaks. Then, cut through the top, off side first. On sloping ground, work uphill of the cut so the log does not roll on you.

FIGURE 3
Side-bind stresses are the same as in Figures 1 and 2, but are horizontal, not vertical. Envision where the stresses will be and their effects on pinching or tearing. Cut the compression side first until the saw begins to pinch, then the top, and finally, the tension side. Work from the compression side just in case one end springs out when the cut is finished.

FIGURE 4
Severe bends in limbs or brush cause tremendous tension in the wood and cutting it through will cause both sides of the cut to spring out. Make several shallow cuts to relieve the tension, and then cut through. Stay on the compression side while cutting. Always analyze the situation before cutting.

FIGURE 5
The lever method uses six basic steps to remove limbs and works on any species with large branches. The sweep method (Figure 6) works best with multiple, small branches such as spruce and fir. The important point in both: rest the saw on the stem, don't carry it. Elevating the stem off the ground helps. Don't move your feet while cutting on your side of the tree—use your knee to push the saw. Not shown is Step 7, cutting branches on the underside of the tree. With large branches under pressure, be careful that the stem doesn't roll on you.

FIGURE 6
The sweep method is great for removing many small branches found on some softwoods. Work smart—elevate the stem and slide the saw along the stem, don't carry it. After cutting the top and side limbs, sweep the saw underneath to remove limbs on the underside. Do not move your feet while cutting limbs on your side.

Farming in the San Luis Valley, Then and Now

From small homesteads a century ago to budding hemp farms today

BY KARIN DENEKE

PHOTOS BY CHUCK REEL AND KARIN DENEKE

CLOCKWISE FROM TOP LEFT: Irrigating small grain in the valley; Branding day on the Oliver Ranch; Hay field with mountains in background; Amish farmer working ground in the SLV with a team of horses.

YOU CANNOT MISS THE HAY TRUCKS when traveling east on La Veta Pass. Loaded with heavy bales of alfalfa, they slowly and carefully maneuver the steep and winding U.S. 160 on their way to the lower elevations and bigger populations of Colorado's Front Range. The crop they haul was raised west of the pass in the San Luis Valley, a huge high-elevation alpine basin topped by the pass itself, which rises to 9,400 feet at the summit.

The irrigated sandy high desert soil of the San Luis Valley produces—on large acreages—alfalfa, hay, potatoes and small grain. In the northwestern end of the valley, migrant workers harvest the head lettuce fields. Livestock

farming—mostly cattle—boosts the valley's hard-earned farm income. Long, very frigid winters and moderate summer temperatures add up to a short growing season and limit the diversity of agricultural crops. Soybeans and field corn are nonexistent here.

Farming practices in the San Luis Valley, as we know them now, have undergone a major change since the post World War II years. Ninety-year-old Augustine Medina can attest to that. Raised on a small farm in the southeastern section of the valley, near the historic community of Fort Garland, at the age of 17, his life took him away from the farm to a new frontier. In 1942, Mr. Medina was sent to what he refers to as "pre-induction training" in preparation for his draft into the Navy at the age of 18. Duty on a destroyer, escorting troupe ships from Pearl Harbor, followed.

Before the war, diversified and small family farms were normal in the valley, Mr. Medina recalls. His parents worked hard to put food on the table during the Great Depression, and most fieldwork was performed with teams of horses and simple farm machinery. Wheat harvesting entailed mowing the mature wheat and feeding it in bundles into a hired steam-fired threshing machine. The separated grain then was stored in bins and later hauled to a mill in the nearby town of San Luis to be ground into flour.

Pinto beans, what Mr. Medina called "field peas," became a major crop on the Medina Farm. Since the growing season in the valley lasts a short three months at the most, night frost could—and still is—expected as late as during the middle of June and again by the middle of September. Before fall arrived, Mr. Medina's family hired kids from town—"town kids," he called them—to pull the acres of still green plants. The crop then

90-year-old Augustine Medina.

A High Valley with Deep Roots

The San Luis Valley, 122 miles long and 74 miles wide, has the distinction of being the largest agricultural alpine valley in the United States. Surrounded by the Sangre de Cristo Mountains in the east and the jagged San Juans in the west, it is assessable via several steep passes and reaches into a section of northern New Mexico on the south. Fifty percent of the two million acres in the valley are privately owned. The remainder is comprised of state and national forest land, and sections of Bureau of Land Management acreage. It is made up of six counties, with Alamosa being the largest city, located in the county by the same name. U.S. 160, a major highway, enters the valley from the east byway of La Veta Pass, and leaves Colorado at the Four Corners Area, where Arizona, Utah and New Mexico connect.

was piled into mounds, roots up, and left in the field for drying, a staple used as livestock feed during the long winter months.

In spring, his parents started hundreds of cabbage plants in hotbeds, which were then painstakingly transplanted. In fall the mature heads were harvested by hand and sold to an outfit that sent trucks from farm to valley farm to purchase the cabbage. The crop was then hauled to warehouses in Texas and Oklahoma.

Another produce variety grown in the valley, Mr. Medina recalled, was cauliflower. It was shipped east in refrigerated train cars. He also remembers fields of spinach, harvested by seasonal Mexican workers, and added that California, with its milder climate, could raise two crops per year, and that advantage eventually put the valley out of business for most trucked garden produce.

Farmers helped each other during planting and harvest season, Mr. Medina said. Diversification was necessary in those days, and each small farm also kept livestock, a few cows, a flock of sheep and pigs.

Lard from pigs and tallow from cattle was used for soap making. Meat was stored between large chunks of ice, harvested from a nearby reservoir during the winter months. They stored large blocks in sawdust and it kept all summer.

Mr. Medina's mother dried pumpkin chips, chilies and apples to boost the family's winter food supply. To keep mice away, she would hang everything from the ceiling in bags. Canning was a major method of preservation, and jars were stored in the root cellar. He made a point, that farmers near his family during The Great Depression took care of themselves, but farm folks in the surrounding villages were supported with government commodities.

During the early years of the Depression, livestock prices plummeted. Eventually, FDR ordered the slaughter of thousands of cattle and hogs to bring stability to the market—known as the Agricultural Adjustment Act. To this day, Mr. Medina can remember beef and pork jerky drying in the sun on many fences in his rural

A wheat field in the San Juan valley in the fall.

Nomadic Indian tribes, such as the Utes, prior to the first Europeans, hunted and settled in southwestern Colorado.

neighborhood. Jobs were scarce in the valley. One of Augustine's relatives made a living trapping beaver in the northwestern end of the valley. When the government created the WPA—a workforce with a mission to build roads—things eased up a bit.

With an average rainfall of only seven to 10 inches for the valley, irrigation of the primarily desert land was a must. It still is. During the 1850s, the first network of canals and irrigation ditches tapped the snowmelt-filled Rio Grande and Conejos rivers, encouraging more farming.

But like most areas, change continued as often as the different seasons. After the war, small farms in the valley started to sell off, and many owners moved to Colorado's Front Range to find work. Large farms now dominate the landscape, producing potatoes, alfalfa, wheat and barley. In the southern region

today, canola is being raised and converted into fuel. There is a new crop on the horizon—commercial hemp for fiber production, which eventually makes clothing and rope. (And of course, since the legalization of marijuana in 2014, another industry has developed.) The roots of most of the valley's residents go back to Spain and Mexico. The valley has the largest native Hispanic population in Colorado and is rich in cultural history. It is not unusual to hear Spanish spoken on the streets and in the stores, as many residents are bilingual. San Luis, the oldest town in Colorado, located in Costilla County, close to the New Mexico line, was founded in 1851 and was once part of four Spanish Land Grants decreed by the King of Spain.

Nomadic Indian tribes, such as the Utes, prior to the first Europeans, hunted and settled in southwestern Colorado.

Prior to World War II, the valley was home to a thriving Japanese American Community. First generation Japanese Americans worked on the railroad and as laborers on farms. Sadly, by the onset of the war, many Japanese were unfairly jailed in internment camps. During the past decade, Amish families, drawn by relatively cheap farmland compared to that of their former homes east of the Mississippi, have settled in the southwestern end of the valley. Amish farmers raise hay and small grains, keep livestock and plant large vegetable gardens.

The San Luis Valley, in addition to agricultural products, relies on the income generated by tourism, hunting, fishing and winter sports. The national forests surrounding it harbor big herds of elk, and are home to mule deer and other large and small game. Years ago, precious metal mining brought in revenue as well.

Karin Deneke writes about agriculture and other topics for Countryside *from her home in Fort Garland, Colorado.*

Examples of Jenny Carcia's work.

PHOTOS BY JENNY CARCIA

The Reincarnation of Mrs. Ferguson

Chickens as pets, and chickens as art

BY JERRI L. COOK

SCIENTISTS BELIEVE THAT somewhere along the evolutionary line since creation, the ancient T-Rex became today's chickens. Science and nature have repeatedly shown us that everything in the universe changes, including how we perceive ourselves in relation to the universe. While it arguably took millions of years for evolution to work its magic on the T-Rex, turning it from a powerful beast to a timid fowl whose very name has come to mean someone who is timid, it may not take that long for humans to start seeing chickens not

as food, but as pets. In fact, the next evolution has already begun, with the reincarnation of Mrs. Ferguson.

Mrs. Ferguson's first incarnation as a pet occurred a few decades ago, when Cindy Schnackel was a child. While visiting the home of a friend who had horses, a small chick was spotted trying to hang out with its four-legged neighbors. A nearby adult scooped up the chick and handed it to Cindy. He told her she could have it because it wouldn't survive long among the horses. Cindy was thrilled, far more thrilled than her family.

After Cindy returned home with her newfound pet, an aunt who was visiting took one look at the Silkie mix and announced to all that it was surely going to die. Cindy admits the chick was a bit on the scraggly side, but this wasn't the first runt she'd brought home, and all the other runts had lived. Sure, this runt was a chicken, and she'd never brought one of those home before, but Cindy didn't see any reason why this runt should be any different than the others. But this runt was different than all the others. Not because it lived, but because decades later, its life would serve to connect two human lives and change how people perceive their non-human companions.

Cindy named her Silkie mix Mrs. Ferguson, because she thought the chick resembled a former teacher. Mrs. Ferguson took to Cindy immediately, running to be picked up when she spotted Cindy coming and twilling with delight when Cindy would pet her neck. For the next 10 years, Mrs. Ferguson and Cindy watched each other grow, and when it was time, Mrs. Ferguson's path diverged from Cindy's. After Mrs. Ferguson's death, Cindy would go on to become an accomplished artist, earning a B.A. from Arizona State University and a Governor's Award for her work depicting birds. Three decades later, Mrs. Ferguson would run across the path of Jenny Carcia.

L.A. WOMAN

Jenny grew in Los Angeles, but slowly made her way out of the city. "California is huge," she says. "There's always space to grow and explore." Jenny studied art and moved around Northern California before heading to Seattle. Eventually, she would return to California's Bay Area to work for an established artist, and discover a calling that she didn't know existed.

One day, the artist she was working for sent her into Petaluma, but insisted that she take the back way to avoid traffic. "It seemed a little creepy and desolate at the time," she recalls, "but now it's home." It wouldn't be long before Jenny learned that the back roads aren't quite as desolate as they seem. There are plenty of folks on the same path as Jenny, and they're accompanied by their pet chickens.

Not long after that drive on the back roads, Jenny met her husband. After they married, they bought a home with a huge yard in Petaluma and her husband suggested they get a few chickens.

"I thought he was crazy, but it sounded interesting," says Jenny. "I'm an easy-going person, and I didn't have any reasons why we shouldn't. After all, we had the backyard for it." Jenny and her husband built a coop from recycled wood, and they were ready to go.

"Our first flock began with three chicks in the spring of 2011. A Buff Orpington named Buffy, a Barred Rock named Rock Star, and an Easter Egger named Pork Chop. I quickly became the mom to these chicks and as they grew into hens they became my dear friends, my pets. In the spring of 2012, we added two Barred Rocks and one more Easter Egger, and I became obsessed. I basically lived and breathed hens. My little flock."

Jenny was truly surprised at how quickly she became attached to her pets, and even more surprised when her growing fondness for chickens led to her creation of a stunning fabric flock.

Cindy Schnackel, an accomplished artist, holds the model of her old pet, Mrs. Ferguson, created by Jenny Carcia.

PHOTO COURTESY OF CINDY SCHNACKEL

A STITCH IN TIME

"Being an artist, I guess it was inevitable that the next step was to express my obsession through some sort of art form. I have been a painter my whole life, but also always had a love of fabric. So I guess my ability to create and my love of fabric came together in my work creating fabric hens. I call them my fabric flock.

"In the fall of 2012, I pulled out my sewing machine, which I had barely touched in a good 15 years. My mom had taught me to sew by teaching me to quilt. I made a handful of quilts and then never really did much sewing until now. I was so incredibly rusty that I started very basic, making a little beanbag triangle shape hen made out of muslin and filled with dried beans.

"It was not easy, but I was determined. I was driven. I began to research doll making, specifically stuffed animals and

birds. I experimented with patterns I found online and in books, and eventually I felt confident enough to create my own pattern. I had a vision and I wanted to own the rights to my designs, just in case I actually sold anything. And in the spring of 2013, I stitched together my first hen made out of nice fabric, as opposed to scraps and muslin that I had been teaching myself on. And that first fabric hen was based on my own feathered hen, my first Easter Egger, Pork Chop. And from there I kept going."

By 2014, Jenny had sold a couple of fabric hens here and there. She started a Facebook page, Pet Chicken Ranch, dedicated to her creations and quickly learned that there are plenty of other people out there who love chickens and keep them as pets.

"I began to get inquiries if I could reproduce in fabric someone's beloved pet chicken. It kind of snowballed and that is pretty much the sole request I get from customers. All my work is one of a kind, custom work, made to order, of a favorite hen or rooster. Hens are requested more often than roosters. The process in creating a custom piece is long and involved. I gather as much information as possible, photos, stories. I immerse myself in all the information and then I begin the process of finding the right fabrics and creating a portrait in fabric of the special hen."

One of those inquiries was from Cindy Schnackel, who wanted a reproduction of Mrs. Ferguson. Jenny and Cindy worked together for weeks, gathering old pictures, researching genetic traits, and creating sketches for Jenny to work from. The replica of Mrs. Ferguson is stunning in its detail. Cindy was deeply moved when the doll was finished.

Jenny finds that her art has helped people reconnect to the best parts of their past, giving them a way to cut through life's emotional pain and remember the good times.

Learn More about Cindy Schackel and Jenny Carcia

Both have embraced their love of chickens in their art, inspiring other chicken lovers who want to pet, not eat, their feathered companions. Somewhere, Mrs. Ferguson is contently twilling. You can follow Jenny's work on Facebook at www.facebook.com/PetChicken-RanchHandmade/.

Cindy's paintings and sketches can be seen at https://cindyschnackel.wordpress.com/, and there is also a schedule of her shows. And don't forget to check out the *Backyard Poultry* website at www.countrysidenetwork/poultry if you're considering keeping chickens.

"I had no idea that my little fabric flock would turn into such an emotional process for me and my customers. I had no idea I would be creating fabric portraits of beloved pet chickens, some still living, some passed, and some from childhood pets, old friends, years and years ago," she said.

Both Jenny and Cindy think of chickens as pets, not food, a trend that is quietly but quickly growing among backyard flock owners. Flocks are getting smaller, and people are becoming more attached to their chickens, especially owners of urban flocks. A recent article on the *Huffington Post* advised young, urban readers that the Silkie is the best breed for those who are looking for the perfect pet in the concrete jungle. Increasingly, people are deciding that chickens, like cats and dogs, are meant for companionship, not food.

Creation might have started with a T-Rex, and evolution might have produced a chicken, but it's the human need for companionship that creates pets. Cindy and Jenny are still creating pets, each in their own way.

Running of the Bull

BY MARSHALL NYCH
PENNSYLVANIA

IT STARTED OFF LIKE ANY ordinary Saturday on the farm. Cousins Louie and Silas lent a knife-wielding hand to Grandpa. The family was to butcher a couple of cows. Outside of the barn, Lou and Silas attended to various pre-game tasks. The two found it a bit alarming when Grizz crashed out of the cattle barn, flailing his arms and sprinting maniacally. Even more shocking was the charging 1,200 pound bull mere feet behind their cousin.

The bull, as nervous as a cow in the Old Testament, had just witnessed the demise of his two buddies and had a pretty good idea what was about to happen to him. He didn't care much for a destiny involving a baseball mitt or a resting place between the mashed potatoes and green beans.

Just missing Grizz, the lively livestock broke loose into Grandpa's pastures. These fields of freedom, previously protected by barbed wire, were uncharted territories. Relieving the stress associated with having a crowd of butchers watch one's every move, he opted for greener pastures on the far side of the property.

Around this time, my phone interrupted what had been a peaceful Saturday morning. At home with a wife who was 10 months pregnant, I received the following message: "Marshall, get over here! Oh yeah…bring your rifle!"

Expecting our son at any moment, Laura sensed the urgency and granted permission. Seconds later, I spun into my grandparent's driveway. Tough Guy, Lou and Silas were already loading onto the Massy. Our driver was none other than the frazzled Grizz. He eagerly led the charge of revenge.

Through a foot of February snow, we followed tracks to the creek bottom where the bull had last been seen. Rather than rest in the thicket, it passed through the pasture, steaming straight toward a neighboring farm. I jumped down from the tractor and began tracking on foot.

A woman in a new sedan caught a glimpse of me nearing the country road. She kindly offered a ride. As I turned to explain the grim situation, she noticed my high-powered rifle. Her proposal was immediately revoked. The Good Samaritan hit the gas and screamed so loud, she likely frightened the faraway bull.

I considered the fact Grandpa Seybert lives a few properties to our west, the exact route of our runaway. I thought I'd save time and see if he saw any unusual tracks.

Though an unlikely duo of cell phone and flannel, I unsheathed my device from the front shirt pocket. Taking a shortcut, I called my Grandpa: "Hello."

"Grandpa, can you look out back behind the house and see if you spot any bull tracks, we got a runner?"

Peering out his kitchen window, "I can do one better," Grandpa answered, "I see a bull standing in the tracks!"

Our crew arrived to the scene a few minutes later. Though we could have taken a questionable shot through some brush, our posse decided it unwise to pull the trigger. The bull, startled by our clumsy approach, headed directly toward one of Pennsylvania's busiest interstates, I-80.

"Don't worry," Lou calmly assured. "There's a fence runnin' along it from here to California!"

Tough Guy scoffed, "But that

metal hurdle was put up and maintained by the government."

Sudden doubt shadowed the group. After paralleling the fence for a few yards the bull found a chink in the armor. Rifle in arm, I followed the tracks across the busted barrier and onto the widely popular western route. Scanning the horizon, I witnessed a line of slow semi-trucks trying their best to avoid grinding 1,200 pounds of beef. The traffic jam stretched as far as the eye could see.

Silas had caught up to me. As we stumbled along the rumble strips, vehement vehicles abruptly swerved to the far lane just to get a few feet farther from the lunatics we had become. Remington Model 700 in one hand, cell phone in the other, I sprinted toward our prodigal steak. There is a reason runners opt not to wear farm boots in races.

I breathlessly confided to a 911 operator and told her the whole story. I pleaded my case for her to ignore reports of a wild man with a rifle, but to take sightings of a killer bull very seriously. I also asked her to encourage any responding officer to shoot the beast on sight. Between chats with 911, I also called fellow cowpokes to give updates. Grizz flanked me on the back roads while Lou went back to get a truck. Tough Guy headed home.

Our crazed cattle ran between four lanes of traffic. Many a passerby observed the most peculiar series of event. First, a black and white bull frothing at the mouth charged westward through an armada of 18-wheelers. Second, two out-of-shape farm boys lagged behind. Finally, a tractor full of armed country boys chugged alongside the whole charade.

Reaching a severe degree of desperate, I dialed all of my buddies. "Wanna' go on the big game hunt of a lifetime? Grab a gun and head toward Swamp Road!" In minutes, a handful of friends joined the protein pursuit.

The bull sprinted out of view. Wanting an update, I again summoned my favorite 911 operator. She informed me, "Hundreds of calls have poured in about a feral bull. It was last seen taking Exit 4 off Interstate 80."

I breathlessly confided to a 911 operator and told her the whole story. I pleaded my case for her to ignore reports of a wild man with a rifle, but to take sightings of a killer bull very seriously.

Imagine our relief as the bull tracks meandered out of the median and veered from the major interstate, downgrading to a busy state highway 760. Luckily, most drivers noticed the singular stampede and, be it out of terror or respect, pulled to the side of the road.

In our setting, the lovely western Pennsylvania countryside, one of the parked cars just so happened to have extra rope coiled on the front seat. Rather than being a passive, innocent bystander like everyone else, this spectator aspired to be a cowboy. The man tried to lasso the bull. Fortunately for him, he missed. If this wannabe cowboy really wanted such an experience, he ought to rope the ram hood ornament on the next Dodge or perhaps dip sandpapered hands into a jar of hydrochloric acid.

The bull, unamused by such rodeo clown antics, proceeded to trample a nearby pickup. In the truest sense of the word, the beast bulldozed the hood, smashed the windshield, dented both doors and, for good measure, kicked off the rear bumper. The truck was totaled.

After demolishing the pickup, our bull took an ironic path toward the local animal shelter. Some eyewitnesses swear the bull approached the shelter's manager, but he was the kind of guy who "didn't take no bull." Dejected, the cow continued up Lynnwood Drive.

By this time, backup had arrived in the form of two responding police departments. The officers chaperoned the misbehaving bull from a safe distance of 20 yards. People, like bugs, are naturally drawn to flashing lights. More than 20 cars enjoyed this impromptu rodeo. I should've charged admission.

Spooked by the unwanted entourage, the bull changed course. Turning onto Hoezle Road and toward downtown Farrell, luck finally sided with the Nych's. One of my good friends helping out on this safari, Tom Jones, was driving in from that direction.

Heading downhill on Hoezle, Tom swears all he saw was a horned shadow of a bull casted by sirens. The monster squared off and challenged Tom's new truck. While Tom's truck was losing the bout and the heavyweight was punching holes along the front quarter panel, Jones loaded his pump shotgun. Upon positioning himself to safely make the shot, Tom squeezed the trigger…three times.

All parties converged around the grizzly scene. In all, two officers, eight family members, an upset homeowner, and countless strangers gathered. Cutting the awkward silence, I joked, "If my wife goes into labor during all of this, I'm gonna' have to name our son Chase Bovine!"

When the dust settled, the bull had run more than 5 ½ miles from our farm across four zip codes to Hoezle Road. The tread of my farm boots endured just shy of three of those memorable miles.

Our newborn son kindly waited a few days to arrive. This gave proper time for blisters to heal, backs to straighten, and insurance companies to file claims.

One might be wondering if Laura and I named him Chase. No. Our son is Noah. I can only hope, if given the task to select two of a species, he has the good sense to leave such bulls behind.

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

A 100-Word Story (That's More than 100 Words)

Why writing about homesteading helps me deal with life itself

BY DOREEN FRICK
NEBRASKA

I WAS 53 AND LIVING NORTH of Spokane, Washington, when I lost my job of 25 years. My kids were grown and on their own, and I had a great urge for an adventure. So I sold all my belongings and headed somewhere that had intrigued me for as long as I could remember—New Mexico.

When I landed in "The Land of Enchantment" a ladybug flew in my lap, which I took as a good sign about where I should land, and so I did. I got my next job writing about the city I suddenly called home.

> Writers can go a little nutty on you at times. Don't ever listen to them. Please.

The magazine *(Silver City Life)* hired me to write articles, sell ads and then paid me to deliver their travel books *(New Mexico Traveler)* all over the state and that tour bonded me to the land, awakened my middle-aged soul and started me on a quest to try my hand at writing more stories—this time for myself, my legacy and my new beginnings.

I am now 61 and have just taken my next adventure to Nebraska where my husband's people homesteaded 100 years ago. My kids think I'm crazy, but perhaps it's because they're where I once was, busy raising a family, dedicated to careers and responsibilities, all good traits and worthy causes.

When I was in that season of life and rearing my own crop of kids I began to write about my crazy life (we once lived in a school bus) and self-published a book called *Hodgepodge Logic, One Woman's Journey Through Marriage, Moves and Motherhood*. I began the book when my oldest daughter got married and I pulled out my old journals and began typing the story of her childhood. Page-by-page, each night before bed, the stories became chapters in a wedding present booklet to her and a chapter closing for me. I realized before the project was over that I was reliving a season of life that seemed to belong to someone else. The magic of putting it on paper gave it a life all its own, and a year later I borrowed money to get the project in print.

Now I have taken to writing about where I've come from, how my dad at age 42 began his career in writing when he went to Vietnam to write about the war and visit my brother who was serving in the Army. Dad came home a changed man (I was 13 so I noticed things

like that) and self-published a book entitled, *Goodbye Mr. President*, which documented his trip and changed the course of his life. Finding his calling, Dad wrote more than 50 more books. If you Google him, you'll find him—Salem Kirban.

Dad's parents were born in Lebanon, so people may find it strange that shortly after the Six Day War, Dad took me and my sister, Diane, to Israel, as well as to Rome, Athens, Zurich, and to England. And with his help we two teenagers wrote a book, *Stranger in Tomorrow's Land*, by Doreen and Diane Kirban. Imagine that!

A few summers later, I married, had four children before I was 25, and managed my father's business with my husband until shortly before Dad died. When the opportunity presented itself for a little unexpected time-off (i.e. no job!), I took it as a good thing and continued in the same vein, branching out to try new things as my dad had infused in a very impressionable teenager many moons ago.

We Baby Boomers are very resourceful as were our brave parents and our immigrant ancestors before them. If writing has helped me find my voice, then I must be getting very loud. I'm on my 91st page of my newest "book," getting the words just as right as I can as I sit here in my Nebraska living room looking out at wildflowers, golden and growing among clumps of alfalfa blooming in sweet purple clover. The hope is that I get a real project out of this attempt, a lengthy story that gives each reader something different. A way to look at their own life; a little respite; a piece of my heart.

I've been known to cry over people's reactions to my work, but I take heart when I learn others have felt the same gash. I'm reading the biography of a Nebraskan writer named Mari Sandoz who sent all her writings to a friend begging him to burn them. Of course he did not. So Mari sent them to another and begged and she did not—she could not destroy the work because she, too, was a writer and saw what was really going on with her distraught friend. Too many rejections.

Writers can go a little nutty on you at times. Don't ever listen to them. Please.

When I started writing my journals I was living in a school bus, cooking dinner over a two-burner hot-plate, walking in the field looking for rose-hips to make tea since all the hippies out that way were into that. I knew I wasn't a hippie, but it helped fill up the day. Our kids were little and there were only two of them, so it wasn't hard to get them clean in the little metal tub we set up in the aisle of the bus. The back of the bus was converted into a bed and oh how the kiddies came to life in that bus and could hardly sleep for the excitement of us all together.

Writing that journal was one of the best times I've ever had. I recorded each sniffle, each temperature (of both feverish children and weather), each trip to the laundromat, each breakdown on the road in the old International. While the kiddies splashed in the plastic pool I sat next to them in the field warmed by the sun, writing while their happiness rubbed off on me. I documented the first stew I made from home-grown vegetables, the first pie I made from scratch, my love/hate affair with yeast, the peaches I froze in bulk, the pita bread and turnovers and crepes (Julia would've been proud), the butter we coaxed from a jar of butter-fat from the Jersey cows down the road, the baked potatoes cooking over a campfire, the stars that came out one-by-one as I lay on my back and tried to number them.

If not for the journal, would I have remembered?

Did I write because a book was in the works? No, I wrote because writing is what comes naturally to me. Letters home, notes to teachers, complaints to companies, hopes and dreams and recommendations about sales people who make your day. I tried to write article and sell them but got rejected. Ah, rejection. The mother of invention.

I'm reading a book about the early homesteaders who wrote home to their far-away kin in other countries courting them to come to America: Free land (or cheap anyway), good soil (when it rains, that is), great climate (when tornadoes and prairie fires aren't roaring by), golden crops (with plenty of sweat and luck and resourcefulness), good neighbors (well, they are when they're not shooting you for grazing your cattle on their land).

You get the drift. They wrote what they wanted them to know, and heaven help you if you came over here and weren't made of grit and guts and a good work ethic. There were no easy roads. This land is not for the faint-of-heart.

If one feels like whining, they'd better keep it to a minimum. Writing was where I did my whining, and writing was where I found my courage. When I went back over the old journals, I was a bit stunned. Was that really me? Did I really do all that? Would anyone in my present geography know the old me that came from a bus and started a business, and then another, had dairy cows she was not that crazy about helping with, so she stayed home and had more kids while her husband built them a house from the ground up. And did I really survive the money running out before we got a well, the wanting to foster kids but being turned down because we didn't have water and enough bedrooms, and then having an unexpected pregnancy and losing the baby a week before her due date?

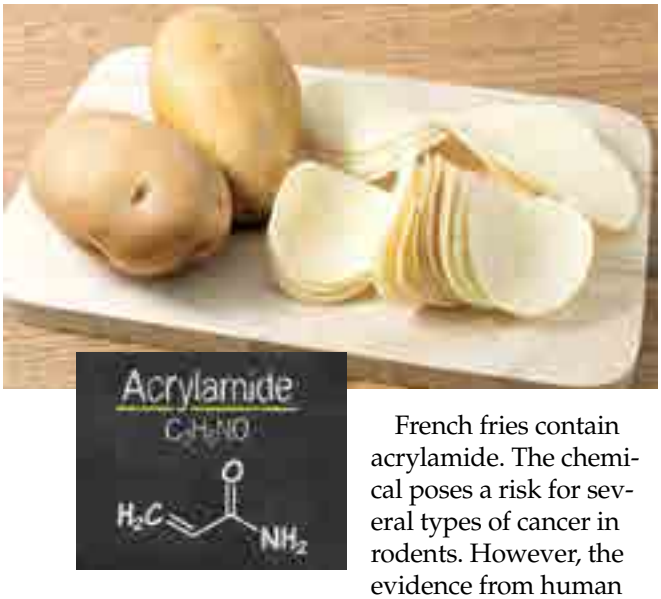
Oh life, looking back at it is good for the soul. Letting life move you on is good for the spirit. And writing about it is good for both.

Doreen Frick writes from her home in Ord, Nebraska. She adds: "Thank you for the opportunity to share a little bit of life as seen through a 61-year-old Baby Boomer. I think your readers will enjoy it. It began as a 100-word true story, and grew to a bit more!"

Chips, Fries, and a Side of Acrylamide

Researchers are working to cut unwanted chemical in French fries and chips

FRENCH FRY lovers—and we're pretty sure that includes all of you—we carry a somber warning. You may be exposed to a chemical more commonly associated with heavy industry than crispy fried potatoes. Fortunately, researchers are finding ways to reduce that exposure, and ensure we can all eat our French fries without risking death—at least more than normal.



French fries contain acrylamide. The chemical poses a risk for several types of cancer in rodents. However, the evidence from human studies is still incomplete. The International Agency for Research on Cancer considers the chemical a "probable human carcinogen." Scientists first began paying attention to the unwanted chemical's presence in food more than a decade ago. Trace amounts of acrylamide are present in many foods cooked at temperatures higher than 248 degrees Fahrenheit. Relatively high levels are found in fried potatoes, including French fries and potato chips.

With that in mind, a group of scientists set out in 2011 to identify potato varieties that form less acrylamide, and recently published their research in *Crop Science*.

Led by University of Idaho researcher Yi Wang, the group assessed more than 140 potato varieties. The researchers' goal was to identify potatoes that make great French fries and form less acrylamide. The amount of the chemical found in fried potatoes is thought to be directly linked to the chemistry of the raw potatoes.

Raw potatoes contain an amino acid called asparagine. The amino acid is found in many animal and plant food sources, and it's a known precursor of acrylamide. When cooked at high temperatures, sugars react with amino acids, including asparagine, in a chemical process known as the Maillard reaction. The reaction is what gives fried potatoes their prized flavor and color, but it is also what produces acrylamide.

Researchers planted 149 potato breeds in five potato-growing regions across the United States. Upon harvesting, they sent some of the raw potatoes to labs. There, the potatoes were stored in conditions similar to commercial potatoes. After storage, the labs tested the potatoes for their levels of reducing sugars and asparagine. Researchers then fried some of the potatoes and observed how much acrylamide the potatoes formed.

The researchers found that it is fairly achievable to identify potato breeds that produce less acrylamide, especially when compared with the industry standard potato breeds, Ranger Russet and Russet Burbank.

"The real challenge is to find the varieties that not only have those characteristics, but also yield finished products with desirable processing quality that meet the stringent standards of the food industry," Wang said.

Two of the most promising varieties—Payette Russet and Easton—have already been released for commercial use.

Wang said the group hopes to identify genes that are related to lower acrylamide in certain fried potatoes. The study shows a strong relationship between the genetics of a raw potato and its potential to form acrylamide. If researchers are able to identify the specific genes, they may be able to eliminate them in the future.

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History, Released

Earlier in 2016, the New York Public Library released hundreds of thousands of historic photos, many of which documented some of the hardest experiences of American homesteading. During the time between 1930 and 1940, millions of Americans were affected by The Great Depression, and combined with the The Dust Bowl, provided some of the most difficult times to survive off the land. The photos we picked out to show you from this collection were the ones that reflected the people who lived through it. It shows the glazed eyes one gets from day-in, day-out field work, and it shows the attempts at lifting spirits, that time on the stoop with the guitar, or that mid-morning water break. We hope you enjoy, or at least, take solace in them. The photos are used with permission of The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Photography Collection, New York Public Library.

—Ryan Slabaugh

1. A young cotton picker in Pulaski County, Arkansas, in 1935. **2.** A man cultivates corn in central Ohio in 1938. **3.** The Old Payne Homestead in East Hampton, Long Island, New York, some time between 1860 and 1920. **4.** Mrs. Thaxton, a farmer's wife, near Mechanicsburg, Ohio, in 1938. **5.** A homesteader plays a mouth organ and guitar in Westmoreland, Pennsylvania, in 1937. **6.** The Ivy Hill Homestead in New York, settled by Walter Hatch in 1650. Picture taken in 1908.

7. Workers in Central Ohio work the wheat harvest in 1938. **8.** The Trische family, tenant farmers in Plaquemines Parish, Louisiana, in 1935. **9.** Homesteaders in Hightstown, New Jersey, in 1936. **10.** An audience at a square dance in Skyline Farms, Alabama, in 1937. **11.** Workers tie bundles of wheat by hand in Central Ohio in 1938. **12.** Strawberry growers in Hammond, Louisiana, in 1935. **13.** A father teaches his son how to milk a cow on the Magnolia Homestead in Mississippi in 1936. **14.** Wheat field workers take a water break in 1938. All photos are courtesy of the New York Public Library.

Poor Will's COUNTRYSIDE Almanack

Late Spring and Early Summer of 2016

BY W. L. FELKER

> Out of its little hill faithfully rise the potatoes' dark green leaves, out of its hill rises the yellow maize-stalk, the lilacs bloom in the dooryards.
>
> — HAL BORLAND

THE EPHEMERIS FOR MAY AND JUNE

THE SUN'S PROGRESS

On May 21, the sun enters early summer sign of Gemini; it enters the middle summer sign of Cancer on June 20, reaching solstice at 6:34 p.m. (EST) that same day.

THE MOONS OF LATE SPRING AND EARLY SUMMER

MAY

5: The moon is at perigee, its position closest to Earth.
6: The Sandhill Crane Migration Moon becomes the Mulbery Moon at 6:24 a.m.
13: The moon enters its second quarter at 10:59 p.m.
18: The moon is at apogee, its position farthest from Earth.
22: The moon is full at 12:24 a.m.
29: The moon enters its final quarter at 10:29 p.m.

JUNE

3: The moon is at perigee.
4: The Raspberry Moon is new at 10 p.m.
12: The moon enters its second quarter at 3:10 a.m.
15: The moon is at apogee.
20: The moon is full at 6:02 a.m.
27: The moon enters its final quarter at 1:19 p.m.

LUNAR INFLUENCE

Since the moon may exert less influence on ocean tides and on human and animal behavior when it comes into its 2nd and 4th quarters, it might make more sense to perform routine maintenance on your livestock and pets on or about May 13 and 29, June 12 and 27. On the other hand, tidal lunar influences have been shown to be greater at full moon and new moon. You might expect more trouble with your herd, flock, significant other or children, therefore, on or about May 6 and 22, June 4 and 20.

THE STARS

The Big Dipper has started to rotate to the west after midnight, forecasting wheat-cutting time, and early tomato and sweet corn time. To the east of the North Star, the house-shaped constellation of Cepheus spins slowly around to the center of the southern sky; when it is almost overhead at 12:00 a.m., homesteaders will wake up to the last great harvest period of the year.

THE SHOOTING STARS

May 5-6: The Eta Aquarid meteor shower falls near Aquarius.
June 14–18: The Lyrid meteor shower takes place in and around Lyra, right in the center of the sky after midnight.

THE PLANETS

Jupiter is the evening star in Leo, announcing the gathering of spring peas.

Saturn stays in Ophiucus throughout the night, helping tomatoes grow fat.

Mars rises in the evening with Scorpio and Libra, helping to make sweet corn sweet and juicy.

Venus is not visible at night, but its power lies with Taurus and Cancer, strengthening the heat of Sirius, the Dog Day star.

A CALENDAR OF HOLIDAYS AND SPECIAL OCCASIONS FOR HOMESTEADERS

April 22 (sunset) to April 30: Passover
May 1: Greek Orthodox Easter
May 8: Mother's Day
May 30: Memorial Day
June 6: Ramadan begins at sunset: Advertise to the Halal market closest to your land. The market should surge before Ramadan ends on July 6.
June 19: Father's Day

THE ALMANACK DAYBOOK

MAY

1. Armyworms, corn borers, flea beetles and bagworms now work the farm and garden.
2: Johnson grass, Sudan grass, sorghum and alfalfa can change their chemical composition and become poisonous when the night brings a late spring frost.
3: Morel mushroom time spreads up across the northern states.
4: Sow seeds for forages that will provide year-round grazing.
5: Perigee today and new moon tomorrow combine to bring frost below the Ohio Valley.
6: Finalize all spring culling. Make tentative notes about which female to breed to which male, why and when.
7: When chives, waterleaf, wild raspberry, peonies, sweet rockets, and May apples come into bloom, pastures may be just right to move all your livestock to pasture.
8: The period of May 8 through 12 historically brings more storms to the nation than any other period except the days between the 17th and 24th.
9: Major planting of peppers, cantaloupes and cucumbers is taking place when you see spitbugs hang to the parsnips.
10: When the first daylily opens, you should have all your corn in the ground, and it should have sprouted, too.
11: Some medicinal herbs for pasture seeding are balm, borage, chicory, horehound, hyssop, marjoram, rosemary, rue, sage, tansy and yarrow.
12: Stabilize the feed schedule of the animals that you'll show this summer, increasing the grain in their rations in order to add quality to their coats and overall condition.

13: When flea time begins for pets, insect activity is often nearing the economic threshold on the farm.
14: Cold fronts due on the 15th, 20th, 24th and 29th, are associated with wetter-than-average conditions, the "Strawberry Rains."
15: As warmer weather changes the growth patterns of bacteria around the farm, keep udders neatly clipped, and be sure to disinfect them before milking.
16: Make sure your animals have hay before they get to the legumes.
17: Plan to harvest Gulf shrimp toward the end of the month.
18: Chiggers start to bite across the South.
19: Throughout the country's midsection, cottonwood cotton is in the wind, signaling the middle of soybean planting time.
20: Along the 40th Parallel, the canopy of leaves closes within the next week or two, shading the garden with maples and box elders in late spring, sycamores and oaks at the beginning of summer.
21: Since mosquitoes can spread disease in your family and livestock, keep your property free of insect breeding areas.
22: Full moon today increases the chance for a late-May freeze.
23: The waning moon is recommended for planting all the rest of your root crops, as well as your shrubs and trees.
24: A tetanus antitoxin can help guard your livestock against infections from summer cuts on udders, feet and legs caused by plants as well as by sharp objects in grazing areas.
25: The cold front due on this date is often especially raw and cruel.
26: Late spring ends and early summer begins as May comes to a close.
27: The waning moon encourages hunting of potato leafhoppers, lice, ticks, screwworms and fly maggots.
28: Slugs increase in May rains; tent caterpillars emerge in the trees.
29: Easy access to salt and hay helps to prevent the summer bloat in your livestock.
30: Prune forsythia, quince, mock orange, and lilac after flowering is complete.
31: The dark moon is favorable for all kinds of livestock care (especially worming and spraying for external parasites), for weeding, mulching, as well as insect control.

JUNE

1: Look out for rose chafers and two-spotted spider mites on your rose bushes. Cucumber beetles appear in the cucumbers and melons.
2: Prepare for harvest of winter wheat and canola.
3. Lunar perigee today and new moon tomorrow bring frost across the North.
4: Southern black raspberries ripen as northern straberries redden under the new Raspberry Moon.
5:. Go after bean-leaf beetles in the fields.
6: Fertilize asparagus and rhubarb before Dog-Day heat arrives.
7: Pick strawberries and mulberries when cherries ripen.
8: Finish clipping your goats for summer.
9: Remove sod webworms from their branches.
10: Complete setting out tobacco plants when cicadas emerge from the ground, leaving their ectoskeletons on tree trunks.
11: Consider putting in double-crop soybeans after the wheat is cut.
12: Middle June produces more dry alfalfa and wheat cutting days than early or late June. The first week of July brings more danger of grain lodging because of the Corn Tassel Rains.
13: Johnsongrass can give your animals cyanide poisoning if it is young or has been damaged by cutting or trampling.
14: Finish shearing sheep to promote weight gain and to keep them cool.
15: Expect the ewes to be gaining weight now that weaning is past. They need to be getting ready for fall breeding.
16: Stabilize the feed schedule of the animals that you'll show this summer, increasing the grain in their rations in order to add quality to their coats and overall condition.
17: Prepare for mold in the hay stall in the feed storage area when humidity levels rise after the Corn-Tassel Rains move in.
18: June is haying month in the upper half of the nation. Legumes should give your animals better nutrition and weight if you cut fields right after they bloom.
19: Leafhoppers and Japanese beetles reach the economic level.
20: Begin the winter wheat harvest and complete the first cut of alfalfa along the 40th Parallel.
21: When you shear or worm or clip hooves, keep your flock or herd together and let them watch what's going on. One animal isolated in a pen can be hard to catch, may panic and hurt itself.
22: Or pave one portion of your yard as an automatic hoof filer—as well as a relatively cleaner and dryer area after stormy weather.
23: Sidedress the corn before midsummer heat and precipitation intensify.
24: Make plenty of salt available for your animals as temperatures rise.
25: When possible, rotate pastures every two to three weeks to maximize land and animal health.
26: Middle summer, the hottest time of year typically begins near this date and lasts into the second week of August.
27: The moon enters its final quarter today. The dark moon is especially favorable for detasseling corn, for harvesting winter wheat, for completing the first cut of alfalfa and for beginning the second cut.
28: Gather "ramp" seeds to expand your wild onion beds.
29: The dark moon is right for all kinds of animal care (especially worming and spraying for external parasites), for weeding and mulching as well as insect hunting.
30: The final weather system of June is almost always followed by the Corn Tassel Rains, a two-week period of intermittent precipitation that accompanies the Dog Days of middle summer.

LUNAR FEEDING PATTERNS FOR PEOPLE AND BEASTS

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

DATE: ABOVE; BELOW

MAY

1-6: Mornings; Evenings
7-13: Afternoons; Midnight to Dawn
14-22: Evenings; Mornings
23–29: Midnight to Dawn; Afternoons
30–31: Mornings; Evenings

JUNE

1-4: Mornings; Evenings
5-12: Afternoons; Midnight to Dawn
13-20: Evenings; Mornings
21-27: Midnight to Dawn; Afternoons
28-30: Mornings; Evenings

WINNER OF THE MARCH-APRIL SCKRAMBLER SWEEPSTAKES

Poor Will promised a prize of $5 to the 2nd, 22nd and 62nd persons persons to return the correct unscrambled words. The 2nd was Leilani L. Peterson of Englewood, Colorado; the 22nd was Darrell Wolf of Shermans Dale, Pennsylvania; the 62nd Bonnie Bond of Wiggins, Mississippi.

ANSWERS TO THE MARCH - APRIL SCKRAMBLER

UREPAST	PASTURE
LOCREV	CLOVER
NEFGNIC	FENCING
BOLAT	BLOAT
EZILITREF	FERTILIZE
SOFRT EDES	FROST SEED
PDDCKAO	PADDOCK
LUSHF	FLUSH
SARSG	GRASS
TATRONIO	ROTATION
GUMLEES	LEGUMES
AGEROF	FORAGE
ZAREG	GRAZE
ROBSEW	BROWSE
TTES LISO	TEST SOIL
WINGMO	MOWING
ESWED	WEEDS
DRGGGNAI	DRAGGING
ENAGAMTNEM	MANAGEMENT

THE MAY - JUNE SCKRAMBLER

MEOH
SDTEAHOEM
NASUTCARY
YTREPORP
ALND
RUCESYIT
LEFS-SUFCIFYCNIE
AERTHH
IEAAYWDH
OKRW
FOF-HET-DRIG
MRAF
NEDGAR
ERUTLCUMAPER
KRAMGNITE
VIVRUSLA
VOLE
PRENEURERTNE
LAMINA BUSHYRDNA
DOOF SERVPRENIOTA

If you are the 2nd, 14nd, 42nd or 72nd person to return your correct Sckrambler solution (before the answers appear in the next issue) to Poor Will, P.O. Box 431, Yellow Springs, OH 45387, you will win $6. If you happen to find a typo or misspelling, you may simply skip that word without penalty — and you will receive a $6 bonus if you identify the mistake and win, as well.

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SUPER COUPON

1/2" INDUSTRIAL QUALITY SUPER HIGH TORQUE IMPACT WRENCH

EARTHQUAKE CENTRAL PNEUMATIC

LOT 62627
68424 shown

- 700 ft. lbs. max. torque

SAVE $170

$79.99

comp at $249.99

LIMIT 5 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/31/16. Limit one coupon per customer per day.

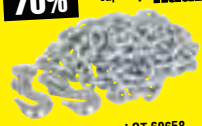
WOW SUPER COUPON

3/8" x 14 FT. GRADE 43 TOWING CHAIN

SAVE 70%

- 5400 lb. capacity

Haul Master



$19.99

$37.99

Not for overhead lifting.

LOT 60658
97711 shown

comp at $64.99

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SUPER COUPON

9 PIECE FULLY POLISHED COMBINATION WRENCH SETS

PITTSBURGH

SAVE 66%

SAE
LOT 69043/42304 shown

METRIC
LOT 42305/69044

YOUR CHOICE

$5.99

comp at $17.97

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SUPER COUPON

6.5 HP (212 CC) OHV HORIZONTAL SHAFT GAS ENGINES

SAVE $228

PREDATOR ENGINES

LOT 68120/60363/69730
LOT 68121/69727 shown
CALIFORNIA ONLY

$99.99

comp at $328

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SUPER COUPON

ADJUSTABLE SHADE AUTO-DARKENING WELDING HELMET

CHICAGO ELECTRIC WELDING

LOT 61611
46092 shown

SAVE 50%

$39.99

comp at $79.99

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SUPER COUPON

20% OFF

ANY SINGLE ITEM

Limit 1 coupon per customer per day. Save 20% on any 1 item purchased. *Cannot be used with other discount, coupon or any of the following items or brands: Inside Track Club membership, extended service plan, gift card, open box item, 3 day parking lot sale item, compressors, floor jacks, saw mills, storage cabinets, chests or carts, trailers, trenchers, welders, Admiral, CoverPro, Daytona, Diablo, Franklin, Hercules, Holt, Jupiter, Predator, Stik-Tek, StormCat, Union, Vanguard, Viking. Not valid on prior purchases. Non-transferable. Original coupon must be presented. Valid through 7/31/16.

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FREE

WITH ANY PURCHASE

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PITTSBURGH

$4.97 VALUE

LOT 69031/69080/69030 shown

LIMIT 1 - Cannot be used with other discount, coupon or prior purchase. Coupon good at our stores, HarborFreight.com or by calling 800-423-2567. Offer good while supplies last. Shipping & Handling charges may apply if not picked up in-store. Non-transferable. Original coupon must be presented. Valid through 7/31/16. Limit one FREE GIFT coupon per customer per day.

WOW SUPER COUPON

12,000 LB. ELECTRIC WINCH WITH REMOTE CONTROL AND AUTOMATIC BRAKE

LOT 61256/60813
61889/68142 shown

SAVE $433

Customer Rating

$319.99

BADLAND

$399.99

comp at $752.99

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SUPER COUPON

NEW

WARRIOR

29 PIECE TITANIUM NITRIDE COATED HIGH SPEED STEEL DRILL BIT SET

LOT 5889/62281/61637 shown

Customer Rating

$14.99

comp at $59.97

SAVE 75%

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WOW SUPER COUPON

3 GALLON, 100 PSI OILLESS PANCAKE AIR COMPRESSOR

Customer Rating

LOT 95275 shown
60637/61615

CENTRAL PNEUMATIC

SAVE 43%

$49.99

$59.99

comp at $89

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SUPER COUPON

4-1/2" ANGLE GRINDER

SAVE 40%

drill master

LOT 95578/69645/60625 shown

Customer Rating

$11.99

comp at $20.26

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WOW SUPER COUPON

PITTSBURGH AUTOMOTIVE

RAPID PUMP® 4 TON HEAVY DUTY STEEL FLOOR JACK

LOT 62319
60706
68056 shown

- Weighs 105 lbs.

SAVE $90

$109.99

$129.99

comp at $199.99

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SUPER COUPON

MECHANIC'S GLOVES

SIZE	LOT
MED	62434/62426
LG	62433/62428
X-LG	62432/62429

Item 62429 shown

HARDY

YOUR CHOICE

NEW $3.99

SAVE 66%

comp at $11.99

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SUPER COUPON

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

SAVE 57%

CENTECH

LOT 60653 shown
66783/60581/62334

$29.99

comp at $69.99

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SUPER COUPON

4 PIECE 1" x 15 FT. RATCHETING TIE DOWNS

SAVE 60%

LOT 63056/63057/60405/63094
63150/61524/62322/90984 shown

Haul Master

Customer Rating

$7.99

comp at $20.37

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SUPER COUPON

US★GENERAL PRO

30", 5 DRAWER TOOL CART

SAVE $180

LOT 69397
61427
95272 shown

- 704 lb. capacity

$169.99

comp at $349.99

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JULY/AUGUST 2016 DEADLINE: APRIL 22, 2016

ALPACAS/LLAMAS

Missouri

WEGENER FARMS,LLC, Dawn Wegener, 3659 Rock Creek Valley Rd., High Ridge, MO 63049. 636-376-2324. <dawnquitmeyer@gmail.com><www.wegenerfarms.com> Llamas: Champion breeding stock, herdsire, bred & open females, gelded males. Top Quality fiber, calm temperment, all GORGEOUS! Boarding available.

Ohio

LOFTY PINE ALPACA & LLAMA RANCH, 2882 CR Rd. 82, Lindsey, OH 43442. 419-665-2697. <loftypine@yahoo.com> Alpacas & llamas starting at $300.

Wisconsin

DREAM CHASER FARM ALPACAS, Ann & Maurice McKercher, 6106 S Dedham Rd., Foxboro, WI 54836. 715-399-8527, cell: 218-348-4823. <amckercher56@yahoo.com> <www.alpacanation.com/dreamchaserfarm.asp> Quality fiber and breeding stock for sale. $400 and up.

BULLFROGS

Idaho

RANA RANCH BULLFROGS, PO Box 1043, Twin Falls, ID 83303-1043. 208-734-0899. <phrogpharmer@aol.com>American Bullfrogs (Rana catesbeiana). Deep soothing music on your pond. Purpose bred bullfrogs-healthy, hardy and prolific. Free info sheet.

CATTLE

Kansas

LA DORADA, Elizabeth Lundgren, DVM., 22484 W. 239 St., Spring Hill, KS 66083. <watusi@aol.com> <www.ladorada.com> Ankole-Watusi cattle.

Missouri

HIGH-LAND FARM, Harold & Jann Ramey, RR 73, Box 3549, Alton, MO 65606. 309-251-4114, Cell: 309-251-5832. <jannlr51@gmail.com> Scottish Highland Cattle.

Nebraska

REGISTERED BRITISH WHITE PARK CATTLE, Walter & Nancy Bohaty, 1371 42nd Rd., Bellwood, NE 68624. 402-367-4741. <nbohaty@gmail.com> <www.britishcattle.com>

DOGS

Illinois

GRANDVIEW ACRES, Dennis & Laura Gray, 14014 State Line Rd., Durand, IL 61024. 815-248-9012 & Cell/TXT: 815-988-8867. <smallfarmer2008@hotmail.com> Great Pyrenees LGD's, St Croix, Suffolk, DorperxKatadin sheep & Boer Goats. Purebred puppies-weaned or EXPERIENCED. Parents reduced our livestock losses to zero from predators and RAPTORS. Raised with, lambs, goats, poultry, and more.

Oklahoma

AMERICAN WORKING FARMCOLLIE ASSOCIATION –A national performance registry. Tish Toren. 920-883-7430. <craftyshepherdess@gmail.com><www.farmcollie.com> Multipurpose Farm Dogs: English & Australian Shepherds, Standard & Border Collies, Shetland Sheepdogs and Kelpies.

Tennessee,

CASTLEROCK'S SPECIAL ASSISTING CANINES, Giant Schnauzer & English Springer Spaniels, livestock guardian, service dogs. Cindy Choate, Memphis, Tennessee. 901-553-9401. <castlerock003@yahoo.com> <http://castlerockspecialassistingcanines.homestead.com>

EQUINE

Ohio

STRASSERHUTEN FARMS, Robert & Corinne Strasser, 4318 Hattrick Rd., Rootstown, OH 44272-9770. 330-325-1373. <rstrasser@neo.rr.com> <www.strasserhutenfarms.com> Irish Dexter cattle, miniature donkeys. Grass-fed freezer beef for sale.

GAME BIRDS

Minnesota

OAKWOOD GAME FARM, INC., PO Box 274, Princeton, MN 55371. 800-328-6647. <www.oakwoodgamefarm.com> Pheasant & Chukar Partridge chicks & eggs available.

Wisconsin

PURELY POULTRY, PO Box 466, Fremont, WI 54940. 800-216-9917. <Chicks@PurelyPoultry.com> <www.PurelyPoultry.com> Indian Red Junglefowl, Guineas, Peacocks. Ducks: Mandarin, Ringed Teal, Whistling Ducks, Wood Ducks, Mallard Ducks. Swans: White Mute, Australian Black, Trumpeter, Whooper, Black Necked. Quail: Northern Bobwhite, Jumbo Bobwhite, Texas A & M, Valley, Gambel, Blue Scale, Mountain, Mearns. Partridge: Chukar, Hungarian. Ringneck Pheasants: Chinese, Jumbo, Kansas, Manchurian Cross, Melantistic Mutant. Ornamental Pheasants: Red Golden, Yellow Golden, Blue Eared, Brown Eared, Lady Amherst, Silver, Timminicks Tragopans. Wild Turkeys: Eastern and Merriams.

GOATS

California

AMBER WAVES Pygmy Goats. Ship Worldwide. 951-736-1076. Debbie@amberwaves.info Text Only 951-444-0074. Amber Waves offers the largest selection of registered pygmy goats and Nigerian Dwarf Goats available anywhere. We are the leading exporter of miniature goats worldwide. Whether you are looking to add a family pet or a whole herd we can help. Visitors always welcome by appointment. Herd Testing Negative for CAE, CL and Johne's. Lifetime Support Why is this important to you? ASK!

HYONAHILL, Ruth McCormick, 24900 Skyland Rd., Los Gatos, CA 95033. 408-353-1017. <ruthmcc@flash.net> Registered Oberhasli dairy goats. Beautiful, quiet, delicious milk. Send for color brochure.

Iowa

D & E DAIRY GOATS, 2977 Linn Buchanan Rd., Coggon, IA 52218. 319-350-5819. <rranch@iowatelecom.net> Alpine, Saanen & LaMancha. Selling 200 head annually.

Massachusetts

MENDING WALL FARM, Ed & Judy Lowe, PO Box 722, Assonet, MA 02702. 508-644-5088. <mendingwall@meganet.net> <www.mendingwallfarm.homestead.com> Nigerian Dwarf, Tennessee Fainting.

Pennsylvania

GOATSVILLE ACRES, Marilyn Ryan, 15 Carbondale Rd., Waymart, PA 18472. 570-488-5369. <mlryan@echoes.net> <www.goatsville.com> Purebred Mini Nubians.

HERITAGE SWINE

Virginia

HOGS

Arkansas

FARMERS HEREFORD HOGS, Thomas Hardin, 13776 E. Hwy. 56, Ash Flat, AR 72513. 870-219-6285. Registered Hereford hogs.

Nebraska

MEADOWLARK FARM, Larry Rauert, 4767 N. Quandt Rd., Grand Island, NE 68801. 308-381-1518. <meadowlarkfarm@lycos.com> Registered Hereford hogs. Boars, gilts, feeder pigs, multi-bloodlines.

Wisconsin

WHITE BISON FARM, Dave & Jodi Cronauer, 5711 Karls Ln., Laona, WI 54541. 715-674-2287. <apache_jc@yahoo.com> <www.whitebisonfarm.com> Idaho Pasture Pigs, KuneKune Pigs, American Bison, Gypsy Vanner Horses.

KUNE KUNE PIGS

Pennsylvania

SCENIC RIDGE FARM, 436 Churchtown Rd Honeybrook, PA 19344. 717-725-4666. Breeding services available from Lassiter. Piglets available. Registered Kune Kune Pigs.

LARGE BLACK HOGS

Oklahoma

PARHAM PHARM LIVIN' THE DREAM, Phillip and Dena Parham, Swink, Oklahoma. 580-579-8680. <info@parhampharm.com> <www.parhampharm.com> Like Us: <www.facebook.com/parhampharm?fref=nf> RegisteredLarge Black hogs. Registered Dexter cattle.

MINIATURE CATTLE

Indiana

Martin Graver, 2502 South 625 West, South Whittley, IN 46787. 260-723-4853. Minature Jerseys.

Pennsylvania

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

MINIATURE LIVESTOCK

Alabama

LNL MINIFARM, Levon & Lynn Sargent, 663 Hulsey Rd., Henagar, AL 35978. 256-657-6545. <www.lnlminifarm.com> <lnlsargent@farmerstel.com> ADGA Nigerian Dwarf goats, AGHA Guinea hogs, KuneKune crosses, AMJA %Jersey, crossbred mini beef cattle & Babydoll Southdown sheep.

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