

The magazine of modern homesteading

COUNTRYSIDE

& Small Stock Journal

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JULY/AUGUST 2016

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**FEATURED
PHOTO**



Our cat, Geo, on the tractor after a rain shower. —Alexis Schroeder, Wisconsin



I was cutting through on a back road when I came upon this little guy. He wasn't sure about me and why I was calling out to him. He turned and this little white heart was all I saw. I couldn't resist taking a picture. —[Darlene Potts, Indiana](#)



Two chickens, named Blondie and Brownie, were donated to my special needs children. They make the children so happy. —[Laura Beda, Illinois](#)



Michael and Shane digging redskin potatoes on their grandparents' little farm. They planted in spring and now they are harvesting. —[Susan White, Maryland](#)

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!**

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Beautiful Canadian thistle blossom!—[Grace Heatwole, Canada](#)



This is our Australian Cattle Dog named Max. He keeps everyone in line at our farm, even the chickens.—[Liz Meyer, Wisconsin](#)



Momma pig, Betty, gave birth to the first batch of quite diverse spring babies on the Kearnes' Farm.—[Desirae Gibson, Montana](#)



Our 18-month-old granddaughter loved the petunias on our back porch. She couldn't quit staring at their colors.
—Jennifer Marlett , Indiana



A 2-month-old Pygmy goat named Liam. Such a doll baby!—Stephanie Hatton, Ohio



Apricot blossoms—
George Palmer, Oklahoma

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On the cover



A modest homestead in the countryside. It resembles many of the smaller homes being built today, at least the ones that aren't being built out of old railcars and sheds.

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The Sprawl Alternative

Twelve years ago, I spent a weekend reporting on rafting guides living in Buena Vista, Colorado, where they survived out of their vehicles on a dusty acre of farmland. I asked a dozen guides to give me a tour of their “homes,” and not one blinked at showing me—foldable, built-in drying racks, inflatable mattresses, drop-top campers, three-room tents. When lined up, their humble plots formed a gallery row of dioramas illustrating how to live small and survive.



RYAN
SLABAUGH
Editor,
COUNTRYSIDE

The guides were young, and even then, experiencing the pressures fueling the growth of “tiny” homes today. We are a country with a shrinking middle class, whose youngest members are short on capital, getting married later, having fewer children, and struggling to find quality, available land. The younger generations no longer see home ownership as an essential part of the American Dream, mostly because it’s unattainable.

The subject of this issue’s cover story, Randy Jones, found an opportunity in all this, and is helping people along the way. While Randy and other small home developers can still get you a tiny, marble countertop or a bejeweled fireplace if you have the dough, the idea’s market is still aimed at a clientele following this proper ideal: living simply is better for everyone. It wasn’t long ago when average homes were small, and people were proud of that fact. It was a simpler era recalled by one of those 20-something raft guides in a lesson shared with me over a campfire: “If I could get everyone in the world together here, they’d learn they can be happy while keeping possessions to a minimum. [And they’d learn] every person is a lot hardier and tougher than they think they are.”

Our Philosophy

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

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

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Country Conversation & Feedback

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Thanks for Being COUNTRYSIDE

I am a certified, card-carrying old goat. In two previous generations my history goes back to 1875. For my recent ancestry, homesteading was more than a way of life; it was life itself. Sustainable agriculture was not about keeping agriculture alive, it was about keeping people alive.

I have fond memories (fonder now than then) of a childhood occupied with the joys of gardening and harvesting. I treasure the experiences of raising and harvesting our animals. I am consumed by nostalgia for those Saturday trips to the local auction where 10 cents would buy a whole box of hidden treasures and \$2 would buy a feed sack full of hens or a pair of geese. And, of course, there were those precious hours spent chewing on a straw and listening as my dad and grandpa shared pearls of wisdom and gossip with like-minded gentlemen at the feed store.

The many years I have been reading COUNTRYSIDE & SMALL STOCK JOURNAL have preserved those memories for me and kept me motivated to keep gathering the eggs and breaking a garden every spring. Mr. Belanger is and will always be a hero to me.

When I received my first two issues for 2016, however, I was astounded. Something was missing. Where were the snake oil remedies? Where were the ludicrous conspiracy theories? Where were the dangerous food preservation suggestions? Obviously,

I was not back at the feed store.

Homesteading is a treasured way of life that I will never give up. But I was born long before most of today's modern medicines and technologies were developed. I remember iron lungs and life-threatening conditions that are mere inconveniences today. As much as I revere my childhood memories, I also embrace the vast volumes of knowledge that have improved and lengthened our lives in the last 50 years.

Much of my ancestors' way of life deserves to be emulated and passed to future generations. Some of it needs to be left in the past. Just because no one died (I think) when my grandmother canned chicken using the open kettle method doesn't mean I want any part of it. And it appears that your magazine doesn't either.

For this reason I congratulate you on the quality that emanates from the pages of your magazine. The content is accurate, authoritative and reliable. It will be a wonderful textbook of homesteading science for my grandchildren. Thank you and please continue your great work.

Robert Hodgen
Idaho

Robert, thanks for your help and support teaching the next generation. We too think "the old way" can generate nostalgia a little too easily. Most of the time, those practices passed on to generations work for a good reason, but we laughed at your sentiment that some of the old practices

should be left behind. You're exactly right. We support smart technological process, especially involving baling hay. That chore just wasn't made for most humans.

Be Careful with Steel Fragments

I'm looking at a back issue article about chopping wood by Daniel Strauss (January/February 2015). The mushroomed tops of the steel wedges depicted are dangerous, as they can chip off when struck with a sledgehammer. I've heard of a man who had a flying chip hit him in the throat. He bled to death, as he was alone when it happened. The mushroomed edges should be ground off or cut off with a torch.

I no longer use steel wedges. I have a small wood splitter that costs \$300, and I do split some wood with a maul for my cookstove. Big rounds go in the front room stove without splitting. A maul can do damage to your shoulders.

Steel hammers striking steel can produce chips that go into the eyes. Axes are not meant to split firewood. Steel chisels should have any mushrooming ground off. Safety glasses must be used at all times.

Daniel Hill
Maine

Another Hornworm Solution

I am writing in response to Kevin Greer's article on the long keeper tomato (May/June 2016).

In his article, he talks about controlling green tomato hornworms by picking them each morning.

I lived near Winters, California, for several years, and hornworms were a serious problem there. By chance, I hung a bug zapper near the garden, as mosquitos were also a problem. I started finding large, black moths in the zapper grid, and about the same time, the hornworms were no longer a problem. Apparently, the hornworms were the larvae for the moths. I have nothing scientific to back this. I just know it worked for me.

Terry Wolf
Idaho

If you're truly overrun by hornworms, we suggest following Terry's advice. But if there is only a small amount, letting a few moths live will actually enhance the pollination going around the garden. Moths are natural pollinators, and are also food for small birds, which are an added bonus. One other idea: planting dill and mustard in your garden will attract wasps, which will also help regulate the hornworms eating your tomato plants.

The KISS Philosophy

We've been enjoying your magazine from cover to cover for decades, and in the March/April 2016 issue, Ken Johnson's article, "What Happened to Simple?" really hit home for me. Perhaps it's because we're both from Wisconsin (my grandmother grew up in the Waupaca area, too) and have a common-sense kind of mentality.

My spouse and I have been saving up to purchase a replacement vehicle for my 2003 Saturn VUE. GM, sadly, doesn't make them anymore. Where we live, having all-wheel-drive would really help. And I'd rather our next vehicle not be a new vehicle because new ones are so darned expensive, and they come with all these "standard" conveniences I prefer not to have cluttering up my dashboard.

I started making a list of the features I "need" in one column and then a list of the stuff I "don't need" in the second column. The second column was, by far, much longer. We live in a beautifully rustic and bluff-ridden area with no cellphone service. We choose not to have a cell phone, nor an MP3 player, nor "OnStar," "Bluetooth," nor "iPad," nor "smart phone"

(do they really make you smarter?), so why would we want all those gizmos as a standard in our vehicle?

The distraction alone is enough to take one's eyes or attention off the road and cause an accident. I too prefer not to have an automatic braking system (ABS) because my father taught me how to drive a stick shift in the worst winter weather more than 40 years ago, and I've driven vehicles with ABS and wondered what the heck was wrong with it when I tried to pump my brakes. The vehicle took much longer to stop and scared the living daylights out of me!

Needless to say, we're still looking for a simple, all-wheel-drive vehicle, preferably made in the USA (to help America's jobs and our U.S. economy), without all those bells and whistles and other senseless gadgetry. It's not been an easy or rewarding task, to say the least. But we'll still continue to live by the KISS philosophy: Keep It Simple, Stupid.

And to you at COUNTRYSIDE, please keep up the good work and informative articles about simpler lifestyles and country living.

Ingrid Olson
Wisconsin

Ingrid, we share your struggle to find a good car these days that's simple and easy to understand. We test-drove a few cars and trucks recently, and decided our 12-year-old efficient grocery getter was going to be just fine for a few more years. Plus, the tape deck in it has to be appreciating in value due to its rarity, no?

More Cranberry Chutney Recipe

This recipe has been in our family for generations. It is very simple :

3 lbs. fresh or frozen cranberries (do not thaw frozen berries; add them straight from the freezer)
4 medium sweet apples (any type apple will do) peeled, cored and chopped
1 cup raisins
2 cups water
1 ½ cup sugar
½ cup packed brown sugar
½ cup minced shallots (you can use onions if you don't have shallots)
4 tablespoons red wine vinegar

2 tablespoons minced peeled fresh ginger (you can use dry ginger)
1 teaspoon orange zest
1 teaspoon cinnamon
1 teaspoon ground cloves
1 teaspoon salt

In a large stainless steel pan, combine: cranberries, apples, shallots, ginger, orange zest, vinegar, ½-cup sugar and 1 cup of water. Bring to a boil over medium heat, and stir occasionally for 15 to 20 minutes. Once the cranberries burst, add the remaining water and sugar, raisins and remaining spices. Reduce heat and boil gently, stirring occasionally for 15 minutes. The mixture will seem runny, but will thicken as it cools.

Place in jars and process for 10 minutes in a water bath.

Makes approximately 6 to 8 8-ounce jars.

Debora Plunket

Hit and Miss

One more year of COUNTRYSIDE. Your March/April issue was the best so far — I was disappointed with May/June. I agree with Deane Hill of Vermont. March/April was the best issue, and so full of great stuff.

Virginia Javenkoski
Wisconsin

Virginia, thanks for the note. We hope you like this issue! Fingers crossed...

Old Topsy and My Sister Joyce

You may not be interested in an old farm story that happened in the spring of 1946, but you might be interested in a story about a big, old gelding named Topsy, and a sprightly little girl named Joyce. Only a teenager in '46, Joyce was already a proven horse whisperer in our family. She and her younger sister had already seen several teams come and go over their young lives. Topsy and his younger sister, Daisy, were two big Percherons and the last team Dad would own be-

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Clockwise, from above: Mom, Dad, Joyce and Sylvia, in Marion, Oregon; Joyce and Sylvia in Gilmore City, Iowa; Mom, me and Davy in the late fall; Me and Davy and the family's first tractor; My sister, Joyce. Her homemade dress was made from a flour sack. Photos courtesy Ken Johnson

fore he finally bought his first tractor.

Let me explain this a little better for you. How Mom and Dad met in North Dakota, married, eloped actually, and spent their honeymoon on the road to Oregon is another story, but it happened just after the economic crash in 1928. So many people of the time migrated toward the West, and ended up picking fruit in orchards all along the seaboard states.

Mom and Dad had three children in Oregon: my two older sisters, Joyce and Sylvia, and a brother named Virgil, who was stillborn. Mom was home alone with two little girls, and help came too late. Such was the sadness of so many of the time.

Times were hard during the Great Depression and World War II. After working as a farm laborer during the late 1930s and early 1940s, Dad and Mom acquired enough money to buy a team of horses and enough machinery to make them eligible to rent their own farm. Dad had also acquired a reputation for being dependable and hard working. He was not a large man, about 5-foot-2 or 3. He literally ran everywhere he went. As a hired

man, he was expected to be on the job and time spent getting there was not held in high regard. I swear he reminded me of a bantam rooster. He also had the same temper. He was fearless. The only time I ever saw him back down from anything or anyone was if Mom was standing in his way. When Mom had your back, all was well! All kidding aside, my little brother and I followed Dad around a lot, and he seemed to enjoy it.

During the late-1930s, Mom and Dad lost another child, a beautiful baby girl named Karen, to whooping cough. I have a picture of Karen, and she was indeed beautiful. After Karen, I came along in 1943. My younger brother, David, came in 1946. The year I was born was the year Mom and Dad rented a very fertile 100-acre farm with all the necessary buildings to earn a living. I'm not sure how they managed to buy the livestock, but we had cows for milking, hogs and lots of chickens. We did not have electricity or indoor plumbing. I remember when Dad asked the landlady if she would have electricity brought in, "for Mom's sake," of course; she told him he didn't

need it because he already had enough live wires running around the house.

So here we are, the spring of 1946. All the Iowa roads I ever saw up to that time were dirt, with maybe a little gravel on top. The ditches were deep and the narrow roads were crowned so the spring rains would run off the road and into the ditch. That was the theory, anyway. A spring rain could end field work for days. One day, our driveway was so saturated, the cream truck men (there were two) decided to walk our produce out to the road and not chance it. Having accomplished that task, the next task was to go to the farm about a half-mile down the road, but on the opposite side. That farmer was my dad's brother, Uncle Les.

I can still hear the whining and grinding of the transmission of the cream truck as it tried to maneuver its way to the next farm. It was going nowhere and Dad was not home. He went to West Bend, Wisconsin, earlier in the day, the opposite direction. We didn't have electricity, but we did have a phone. To call someone on a different line required a call to the switchboard in town.

About 20 minutes later, we see Uncle Les walking behind his team of beautiful, big, black Percherons. Uncle Les brought the team around, dragging two single trees. He maneuvered the horses around so they

lined up in front of the truck. He then attached two chains around the steel bumper, near where it was attached to the frame. The other ends of the two chains were hooked together, and a clevis coupled them to the center of the doubletree. Standing off to one side, Uncle Les clucked the team and shook the reins. The team clearly knew what was expected and started to pull.

There was just too much mud in the way. The trucks' duals spun, but to little avail. The men would have to dig. The horses were already breathing hard as Uncle Les tried to calm them down. Time for another try.

Les got on the other side this time, and coaxed his horses to settle into the harness for a steady pull. No kidding: draft horses love to pull if they can. That's what they are bred and born for. Once again, Uncles Les slapped and hollered at the team. The Blacks couldn't help the truck get to more solid ground. It was not pretty watching them try. Uncle Les unhitched the team and told the drivers he would call for a road grader, but that could take an hour or more. The block of ice in the back of the truck was melting, and dairy and eggs needed to be kept cool.

We thought the spectacle was over. Sylvia and I went back to the house. Where did Joyce go, we wondered. Sure enough, we looked out the window and spotted a big, white horse nearing the end of the driveway and casually walking toward the stuck truck. I heard Mom quietly say, "Oh no," as I ran out the door.

The two drivers were watching too. They both were grinning, but they didn't say anything. Joyce calmly turned Topsy and backed him up close to the front bumper. Bumpers, in those days, were real bumpers meant to push and to protect. Joyce hooked one end of the short tow chain to the center of the bumper and the chain's other end to the center ring on a stout-looking single tree.

The two men got in the truck. The driver started the engine and waved at Joyce. She stood on Topsy's left side, holding onto his bridle. She was barefoot in the mud and had to push herself up on her toes to reach his massive face to give him a kiss, before she gently tugged her signal. I saw Topsy lean forward, stretching his harness traces. He relaxed, replanted his massive hooves, and stretched the traces again. His hooves sank. His back legs did a little dance as he swayed. The

driver was trying to rock the truck by working the clutch. Topsy tossed his head and Joyce had to let go. She almost fell into the ditch! I never, ever saw a horse lean into the pads and traces as I did on that day. I thought they would break for sure! I thought the single tree would bust in half!

The truck didn't have a chance. It moved and Topsy literally jumped forward, and then walked out of the mud, with the truck huffing and puffing and spinning behind. All of a sudden, there were cheers and expressions of disbelief from the drivers and from me! Joyce calmly unhooked the chain from a very bent bumper, and walked Topsy back to the stock tank to clean up, and then to the barn for a well-deserved rub down and two scoops of oats. The truck went on its way.

Dad was not happy about the event. He chastised Joyce for putting Old Topsy through the ordeal. He said, "You know that old horse will do anything for you. He would rather die than let you down. Don't you know that?" He continued: "He could have broken a leg in all that mud!" He went on about the harness, etc. We were all scared. Mom finally put a stop to Dad's rant and told him enough was enough. Joyce was sick and I know she cried herself to sleep that night.

At next daybreak, she was out in the barn looking after Topsy. She rubbed his legs and felt for telltale signs of heat. She said he seemed okay, and that he was munching on his oats. That was a good sign. I know for a fact that Topsy loved the extra attention. Joyce's red eyes didn't disappear for a while. Dad did use his team of Percherons, but that was the last year they spent on our farm. In the spring of 1947, he traded his grey-tinted, white Percherons for his first tractor, and we all had red eyes for a long time after that.

Memories from our past may seem so long gone, but their moments of joy and sadness linger.

Ken Johnson
Wisconsin

Thanks for the story, Ken. These memories are priceless, and we're proud to capture them in these pages. If others feel inspired to write stories or share pictures that capture their families' homesteading roots, please send them to editor Ryan Slabaugh at rslabaugh@countysidemag.com, or through snail mail to Countryside Conversation, 145 Industrial Drive, Medford, WI 54451. We'll publish as many as we can every issue. ☺

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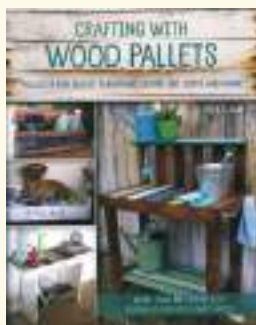
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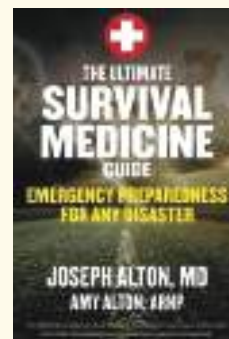
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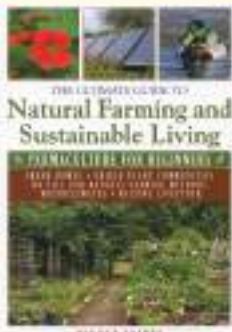


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The Importance of Crop Rotation

Could this agricultural practice have saved one million people between 1845 and 1852?

BY MARISSA AMES

SEVERAL FACTORS CONTRIBUTED TO the Great Famine. Irish families lived on small tracts of land owned by the ascendancy class. A third of small holdings could not support families after paying rent. Farmers lived at subsistence level. They grew two heavy-yielding types of potatoes, which thrived in poor soil, and half of Ireland's population depended on this crop for survival.

Then, late blight struck. It came accidentally from North America, unrecorded in Europe prior to 1844. Fed by unusually damp conditions, it ravaged the fields. Crop loss in 1845 ranged from a third to a half of cultivated acreage. In 1846, more than three-quarters of the harvest perished, including many seed potatoes that would have started a new crop. The first starvation deaths were recorded that year.

Modern farmers recognize the dangers of blight and know crop rotation is crucial for protecting a harvest. If the Irish had a secondary crop, unrelated to potatoes, and rotated it through the fields, could deaths have been prevented?

AN ANCIENT CONCEPT

The earliest examples of crop rotation were used in the Middle East. They didn't understand why alternating legumes with cereals resulted in better yields, but they knew it worked. Early Europeans used the two-field system, where one allotment sprouted thick with wheat, rye or oats, while the other lay unplanted. Medieval fiefs added a third field, once again incorporating beans and peas into the rotation, but allowing one field to lay unused didn't make sense to feudal peasants. Livestock roamed the fallow field, consuming weeds and wheat stubble while fertilizing the ground with manure.

By the 17th century, Charles Townsend of Norfolk County, England, eliminated the fallow field and replaced it with cover crops such as clover and ryegrass, which provided livestock fodder while still replenishing the soil. These cover crops produced richer manure because animals were more nourished.

Other advocates encouraged the practice, such as George Washington Carver, who taught southern farmers to rotate other plants with the cotton, which when raised alone, quickly depleted the soil. Adding peanuts and sweet potatoes gave farmers alternative cash crops while increasing yields when cotton was replanted. Discovery of cover crops eliminated the need for fallow fields in most of the world.

The Green Revolution took hold and a majority of the modern world turned to chemical fertilizers, relieving some of the need for crop rotation. But organic gardeners still attest to why it works.

THE SCIENCE BEHIND IT ALL

If you planted tomatoes in a raised bed last year and they performed delightfully, sprouting high and dark green while hanging

heavy with fruit, should they perform as well this year? Planting tomatoes in the same location, year after year, is a bad idea.

Crop rotation reduces soil erosion, replenishes nutrients, and mitigates pathogens and pests, which attack certain species of plants.

Along with the Great Depression came agricultural tragedy. The Great Plains seemed perfect for growing cereal grains, but farmers didn't understand the specific ecology. They dug deep with their plows, ripping out native grasses and churning up virgin topsoil. Cotton stripped away nutrients and farmers burned stubble, removing organic vegetation. Soil was left bare during the winter. During fruitful years, wheat and cotton sprouted to hold the soil in place. But drought struck in three waves. The unanchored soil turned to dust, blowing in

immense clouds depicted in the windswept sepia photographs.

A happier story depicts how crop rotation builds topsoil and prevents erosion. In 1988, a study compared two adjacent farms within Washington state. The organic farm had six inches more topsoil than the conventional operation next door. Both farms had been established 80 years earlier. The organic farm had remained organic, using crop rotation, while the conventional land began administering fertilizers and pesticides. The additional topsoil was attributed to the usage of green manure crops rather than relying on chemicals.

But what about nutrient replacement? High school chemistry explains that. By studying the periodic table, we learn that vitamins and proteins may be created or consumed, but elements cannot. Iron has always been, and will always be, iron. Conventional fertilizers contain nitrogen, phosphorus and potassium, the three most important nutrients to plant growth. But healthy food crops need more than NPK. Tomatoes get blossom end rot without enough calcium. Magnesium helps flowers



OPPOSITE PAGE:
A harvest of red
potatoes.

ABOVE:
Cover crops
like clover
help reduce
soil erosion
and replenish
nutrients.

RIGHT:
Russet potatoes,
ready for the
kitchen.

Photos by
Shelley DeDauw

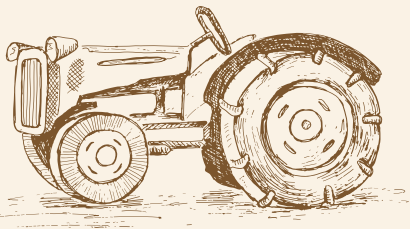


Rotation and Fertilization

Crop rotation is a strategic planting to control which nutrients are pulled from the soil. Most plants do not return nutrients. Adding in compost, manure, and short pasturing cycles puts material back to keep soil from compacting and crusting. Compost brings back depleted elements. Manure contains cellulose-decomposing bacteria and active enzymes, which accelerate breakdown of organic materials by microorganisms. Pasturing allows animals to loosen soil, consume weeds, use leftover plant material and fertilize.

Use these cycles between plantings. Though compost tea and rabbit manure can be sprinkled on growing plants, most other manures are too high in nitrogen to be used within the growing season. Dig compostable material into a garden after harvest, letting it break down through the freezes and thaws prior to spring, or sprinkle finished compost around new seeds. Till horse or cow manure into the soil a month or so prior to planting. Pasturing can be done on rural property by opening a garden gate in the fall to let goats consume remaining crops or by allowing chickens to roam small city gardens during the winter.

— Missy Ames



More from the potato harvest. Rotating sweet potatoes, in the morning glory family, with Russets (pictured), from the nightshade family, will help reduce the odds of disease affecting your crop. Photo by Shelley DeDauw

develop and seeds germinate. Spinach is high in manganese, iron, copper, and zinc, and all elements must come from the soil. If a “heavy feeder,” such as cotton, grows year after year in the same spot, eventually those elements will no longer be available.

Late blight was a problem for Ireland. But it would not have been a problem if the tenants had grown sweet potatoes instead. Why? Because potatoes are a nightshade while sweet potatoes belong to the morning glory family. Blight-infested soil is not hazardous to the family *Convolvulaceae*.

Many other diseases are plant-specific. Sweet potato feathery mottle virus only affects sweet potatoes. Gummy stem blight attacks cucurbits, but not tomatoes or peppers.

Insects and other pests have their favorite foods. Squash bugs also attack cucumbers and melons, though they prefer squash itself. Other pests that love the *Cucurbita* family include cucumber beetles, spider mites and melon aphids. They overwinter in garden soil or beneath mulch or rocks. In the spring they

emerge to feed again. Though treatment methods range from smashing the bugs to pesticides, the best way to keep these bugs away from crops is to make sure their favorite food isn't planted in the place they found shelter.

KEEP IT ALL IN THE FAMILY

Do you practice the two-field system or use four fields? Incorporate green manure or legumes? And just when should clover be established?

It's quite confusing.

But it doesn't have to be so scientific for home gardeners. Just remember: keep families moving and don't split them up.

A simple crop rotation plan for home gardeners involves the Three Families method. Each bed will have one of three families: *Solanaceae* (nightshades), *Fabaceae* (peas and beans), and a third family. This family can include *Brassicaceae* (mustards and broccoli), *Apiaceae* (carrots and parsley), *Alliaceae* (onions and garlic), or *Cucurbitaceae* (squash and melons). Or throw in the family of beets, Swiss chard, and spinach. Perhaps sweet

Planting tomatoes in the same location, year after year, is a bad idea.

Crop rotation reduces soil erosion, replenishes nutrients, and mitigates pathogens and pests, which attack certain species of plants.

potatoes. Maybe corn. Choose your third family based on what your family will eat, what grows well, and pests or diseases that may have been a problem in previous years.

The nightshade family includes tomatoes, tomatillos and ground cherries, both sweet and hot peppers, eggplant and potatoes. This is probably the most popular family for home gardeners who can't live without their tomatoes or salsa. But nightshades can be susceptible to a spectrum of diseases such as blight, Fusarium and Verticilium wilt, and leaf curl virus. Some strains are more resistant than others but it's safest to move all nightshades to a new spot each year. Never use soil from last year's nightshade location for this year's seedlings, because this can bring diseases right to a new spot. For this same reason, if you don't start your own seeds, only accept plants from a reputable nursery or a gardener who purchases new, sterile soil for each year's seedlings.

Beans, peas and lentils are nourishing to both humans and the soil. Their most valuable asset to crop rotation is the nitrogen-

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Light and Heavy Feeders

Do your crops add to the soil or take away? Knowing which plants are light feeders, heavy feeders, or soil builders can help you plan your rotation schedule.

Heavy Feeders: Crops that deplete the soil and require the most nutrients are best if planted after beans. These are also good choices if you're worried about soil that might be too fertile for other vegetables. Heavy feeders include corn, brassicas such as broccoli and cauliflower, cantaloupe and honeydew, and alliums such as onions and shallots and large peppers.

Medium Feeders: Though these are mid-range in the garden, they are still considered soil-depleting crops on an agricultural scale. They include squash and cucumbers, most melons, nightshades and radishes.

Light Feeders: The vegetables, which take the least nutrients from gardens, still consume more than cereal grains. Root vegetables such as beets and carrots, leafy greens like Swiss chard, collards, arugula and most herbs are light feeders.

Soil Builders: Also known as pulses, legumes include alfalfa, clover, lentils, beans and soybeans, peas, lupins, peanuts, carob and tamarind. Other soil builders include natural prairie and meadow grass.

— Missy Ames



Healthy soil depends on rotating heavy users behind soil builders. For example, it's common practice today to rotate corn (heavy user) and soybeans (soil builder). Photo by Shelley DeDauw

fixing properties. Rhizobia bacteria invade the roots and form nodules, which swell and grow then release the nitrogen when bacteria die. Though most nitrogen produced is used by the legume itself, some leaks out into the soil for use by other plants. Perennial legumes such as clover and alfalfa fix nitrogen through the entire growing season. Most nitrogen is released when roots decompose. Grow legumes for your family, but at the end of the year, do not pull plants up. Clip them off at ground level. The roots will decompose and leave the soil better for next year's crops.

The third family is your opportunity to make a nutritional trifecta, try new varieties or avoid horticultural disaster. If squash bugs were a problem last year and your garden area is small, choose carrots and parsnips instead. Perhaps you've composted well over the past couple years, just finished up a round of beans, and your soil is ready for a heavy feeder such as corn. Or this is the year just before beans make their round and you need soil that isn't quite as nitrogen-rich for root crops like sweet potatoes or turnips.

Incorporate companion planting, but remember what family went

where. For instance, onions should not be planted with beans but they help peppers and tomatoes. Rotate the onions with the tomatoes, taking advantage of two crops within the same area, and choose carrots as your third family. Group beans with chard, both of which should not be planted beside leeks. Or try a Three Sisters formation, keeping the beans, squash and corn together while cultivating the nightshades in the second location and cabbage in the third.

Short-season beans, such as bush or pole snap varieties, mature within 60 days. This gives gardeners an opportunity to add another crop within the rotation. Plant snow peas beside the poles or fencing, which will later support beans, snipping old pea plants off at ground level and loosening the soil right next to them for bean seeds. Or grow either lettuce or radishes, which harvest within 30 to 60 days, then till soil again and plant beans with enough time for them to mature before the first frost. ©

Marissa Ames writes from Reno, Nevada, where she maintains Ames Family Farm on 1/8 of an urban acre. You can read more of her stories, how-tos and gardening tips at www.countrysidenetwork.com.

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When Shady is a Good Thing

Help your garden survive the ups and downs of summer weather



BY MARISSA AMES

WHEN YOU STARTED YOUR FIRST garden, did anyone tell you that Mother Nature might rake her nasty claws through your chard and hurl your cabbages through chain link? Probably not. Tutorials and advice draw a rosy picture of peppers sitting beneath a gentle, smiling sun, not a rabid heat-monster that shrivels pumpkins and flicks tomato blossoms off before they can set.

No, you usually find that out right when it happens. When you're running out with a bucket, attempting to catch hail before it can puncture through leaves. Summer weather is unpredictable and extreme. From intense sun, torrid heat, windstorms and flash floods, it can wreak havoc with your vegetables.

What can you do to save your crops?

SUN AND HEAT

By this time, it's probably too late to choose drought-tolerant plants or amend your soil with organic material so it retains more moisture and helps plants recover from stress. Yeah...that would have been nice right

around March. Now your tomatoes are permanently in the ground and probably several feet high. Assuming summer is the best time for gardening, you sit back and wait for ripe, round fruit. But it never comes. And you go outside and check the blossoms to discover that they break off at the joint, falling to the ground, when they should be pollinating and producing groceries.

The hard truth is that most plants do not like the summer heat. Even "warm weather" crops wilt or refuse to set fruit above 95°F.

It's not too late to mitigate heat and sun.

First of all, consider the term "full sun." If you spend enough time in a desert climate, such as where I live, it's easy to assume that "full sun" means a day of the same sunlight that lets you fry eggs on rooftops. "Full sun" is actually six hours.

And it's usually sunlight within a climate that regularly sees clouds. If you live in high elevations and don't have regular cloud cover, you may need to provide shade.

Sun scald kills patches on leaves, trunks and fruit, and can be identified by a white area on the most exposed area of the plant. That area will die. If the scald is small enough, the rest of the plant will recover but the scald will not heal. The best way to protect against sun scald is to harden plants off before setting them out permanently. Crops grown within a greenhouse have never experienced the full, brutal wrath of pure sunlight. Introduce them gently. Set out for an hour the first day, two hours the second, increasing until they can spend all day outside. If you prune crops such as tomatoes, don't expose areas that have previously been shaded. Beautiful fruit, sheltered by a wide leaf, turns rough and ugly from sun scald.

The second-best way to avoid sun scald is with shade. Remember how I said "full sun" was six hours in an area that has clouds? Filtering out harsh sun does wonders for garden health. Expensive tarps

promise to reduce UV damage by 60 percent. Commercial shade cloth allows 80 percent of light to shine through. And threadbare white sheets, purchased at garage sales, can provide the same protection for much less money. Even planting your tomatoes where a tree shades them from noon to 3 p.m. helps. Use grow tunnels for smaller crops or clip shade cloth to tomato cages.

Mitigate heat down below as well. A light-colored mulch such as straw retains moisture in the soil as well as reflecting the sun in the same way that white clothing is cooler than a dark sweater.

DROUGHT

Some states are still recovering from one of the worst droughts in history, settling hard on a large agricultural area. Others live in a constant state of drought.

Before dry weather hits, avoid problems by choosing plants that are hardier, use less water, have tougher foliage, and can go without moisture a little longer before sacrificing quality. Amend soil as well. The sweet soil balance is "loam," a balanced percentage of sand, silt and clay. If you don't have loam, add compost, aged manure, and other plant-based material. A high percentage of organic material holds more water. It also feeds more nutrients to plants, allowing them to withstand stress. Poorly nourished vegetables are among the first to succumb to Mother Nature's wrath.

Mulch is a gardener's most important tool against long, dry spells. It shields dirt from sun, which may kill microbes, wind which may strip away topsoil, and allows plant roots to stay cool. Mulch also holds moisture in the ground, reducing the amount of watering needed. It regulates moisture so the best fruit can develop. Do not leave soil bare to the elements.



It's important to use water wisely around the garden, no matter where you live. Soaker hoses and drip irrigation with mulch keeps water channeled around the plants and away from areas you don't need water. Photos by Shelley DeDauw



Stay Cool Yourself

Check out our story on page 64 that is loaded with tips and advice to help you stay cool as you work outdoors this summer.

Water wisely during drought, using driplines if possible. Soaker hoses, pointed downward, are another good option. Combine drip irrigation with mulch to keep each drop where it belongs. Water at night or in the morning, when water is least likely to evaporate before it can sink in. Areas that experience powdery mildew benefit from morning watering so moisture does not remain on leaves for long periods of time.

WATER, WATER EVERYWHERE

Last summer, I experienced stale chips for the first time while visiting coastal California. I live in a climate where corn chips sit for three months in an open bowl and are just as crisp as day one. It also rains so rarely that new gardeners call me in panic, asking, "It's raining! Do I need to cover my plants?"

Relax. Rain is a good thing. Usually. Wetter states experience frequent

rainfall and have soil ready to handle it. Flash flooding is more of a Western desert thing. And it can be devastating.

Most plants can handle rainfall as long as it doesn't contain hail or isn't driven by hurricane-force winds. Leaves may bow down from the moisture but they rarely receive more than a few rips. It's the soil that suffers. If dirt is heavy with clay, water doesn't sink in. It runs off, taking topsoil with it, or sits around roots to drown the plants.

Construct your garden with drainage. Digging trenches between rows allows excess moisture to roll off and collect away from the roots. Dig in a bit of a slope so flooding runs downhill and out of the garden bed. By the time those trenches fill with water, your plants have had more than enough anyway.

If you haven't thought that far ahead and you watch in panic as water pools beneath your pumpkins, don't



Shade cloth can help prevent plants from getting sun scald or hail damage, as well as helping decrease evaporation. Photos by Shelley DeDauw

raincoat and arm yourself with a shovel or hoe. Scrape trenches into the soil, drawing a path from the pond to the edges of your garden. The same emergency technique can be used in chicken runs or animal stalls to divert water elsewhere.

And speaking of flooding: If you're experiencing a level of natural disaster, and your garden sits in water washed in from who-knows-where, do not eat the produce. Food pulled from flood waters may be covered in harmful bacteria. Don't cook them, can them, or even compost them. Disinfect any boots or gloves you used while working in a flooded area.

HAIL

Foresight can save your garden when the angels hurl ice cubes from the heavens.

Though pea-sized pellets won't do worse than puncture leaves during a short storm, prolonged exposure strips foliage and breaks branches. The larger hail gets, the more damaging it is. And the time to think about preventing damage isn't when golf balls fall from the sky.

Protection is simple: cover your plants. It doesn't have to be fancy. Overhead structures such as trellises or pergolas either block the hail altogether or slow its descent. Ice

bounces from the surfaces and rolls to the ground. Previously constructed grow tunnels can stop hail as well as harsh sunlight, though the pellets may puncture thinner fabrics.

Keep a stash of emergency covers in a shed: Old five-gallon buckets, empty planters, or milk jugs with the tops cut off. If the hail isn't dangerous to you, run out with a hat on. Upturn containers over the plants and let them stay on until the storm is over.

If the hail has damaged your plants, do not remove leaves that are only a little punctured and torn. These may be ugly but they can still photosynthesize for the plant. Remove broken stems and branches, sterilizing pruners before and between cuts so disease doesn't spread to an already-stressed plant.

Ragged greens and herbs can still be used if harvested before bacteria can sit in the leaves' wounds. Dice greens then boil them into soups. Dehydrate herbs or use them fresh to make culinary oils.

HIGH WINDS

Back east, hail is often a precursor to a tornado. This changes the rules when you think about protecting plants, because objects like pots and buckets can fly around in harsh winds, doing more damage than the wind itself.

A little wind is good. It's what pollinates corn. But too much can plow through a small homestead and leave swaths of destruction. If your area is prone to high winds, you probably already know it. And if you just moved in, ask local gardeners if you need to worry about dangerous gusts. Whether they're tornados, hurricanes, or seasonal gales, they can shred leaves and blow cornstalks to the ground.

Before the storms can hit, construct wind breaks such as hedges on the outskirts of gardens. Or plant crops beside buildings or walls. Stake tall plants such as tomatoes at least a foot into the ground. Anchor slender fruit trees with guywires or poles. Keep your garden tidy, stashing loose items in sheds, so they don't become wrecking balls hurled by the wind's cruel hand.

Watch the weather reports. As the warm air mixes with cold and the gusts build, run outside and harvest all the fruits and vegetables you can. Tomatoes and peppers with just a hint of color will still ripen indoors. Then hold on and hope for the best.

You can't choose whether tornados or hurricanes devastate your crops. And if they do, salvage what you can. Rinse plants and soil with clean water if you live near coastal areas; they may have salt left from seawater that blew in. Dig out the soil to drain any standing water. Compost debris if it has not come in contact with flooding.

RECOVERING FROM DISASTER

The rain and hail stopped, the wind cleared, and the water drained. Now the sun shines relentlessly once again. Take a deep breath and don your gloves. You have work to do.

Don't leave debris lying around the garden. Trim away broken stems and branches with sterilized shears. Right now you need to help surviving plants recover, which means avoiding disease from dirty tools. Don't cut off leaves that are minimally damaged because the plant needs these to build strength and produce more foliage. Unless you need to wash away salt or contamination, let the soil dry before watering again.

If you survived a natural disaster, your dirt may not have. Erosion can wash away fertile topsoil. Replace both nutrients and lost topsoil with compost and a prepared soil mixture. Depending on the damage and the time of year, you may need to replant. And if it's already late in the summer, you can still get a fall crop in.

Whenever Mother Nature cackles and rubs her hands together, preparing to play ping-pong with your eggplant, you're going to fret and worry no matter what. But if you know how to survive weather disasters within your garden, you can minimize damage and often come out with a full harvest. ©

Marissa Ames writes from Reno, Nevada, where she maintains Ames Family Farm on one-eighth of an urban acre.

Mitigate heat down below as well. A light-colored mulch such as straw retains moisture in the soil as well as reflecting the sun in the same way that white clothing is cooler than a dark sweater.

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12 Ways To Improve Plant Sales

The competition grows every year, so make sure you are following best practices when selling your plants

BY KENNY COOGAN
FLORIDA

I PURCHASED MY one-acre homestead for its location, mature trees and potential to grow rows and rows of vegetables. It was an added benefit when I discovered that my backyard neighbors, who had 40 years of experience growing edibles and ornamentals, were so generous in their sharing of knowledge. They have shared advice from growing seedlings to improving sales of produce, plants and eggs.

For a little more than a decade, Demi Stearns has had two plant sales a year. I offered to help her post her events on Craigslist and Facebook, which helped skyrocket her already profitable sales. Selling plants between \$0.50 and \$4.50, Stearns has been able to make more than a \$1,000 in a weekend due to her marketing skills.

Following her example, here are her dozen tips to improving your plant sales:

IMPROVEMENT #1: BE PREPARED

Preparation begins a few months before a plant sale, and this also means organizing your sales space. You will want to have everything ready so that you can talk to your customers.

Keeping a table and chairs by your entrance invites customers in. Keep a master list (alphabetical) of your plants and prices. You won't remember everything, especially if you have a few dozen species with unique prices.

IMPROVEMENT #2: BE COLORFUL

Color coordinate your plant sale signs for posting around your neighborhood. Stearns uses neon pink and green. They are visible even on cloudy days. The signs are posted one and two blocks away from the sale in all four directions. Avoid using cardboard for a backing as it will absorb water if it gets rained on. Use some kind of plastic such as old election signs. Paint the background hot pink and letter as large as possible. Black acrylic paint and black sharpie markers hold up for years.

In your yard, use a lot of colored signs for your plant groups. Have Orange Justicia signs read in highlighter orange and Pink Jacobinia in hot pink. Use a plastic backing here as well. Do a good job the first time and your signs will pay for themselves over time. Your prices can be adjusted on these signs from year to year to adjust for inflation.

IMPROVEMENT #3: DO YOUR RESEARCH

Research plants you grow on the internet, or visit your library. Have a printer make colored copies of information on all the plants you'll be selling. Cover them all in plastic sheets and tape them so that moisture cannot get in. By being able to answer all questions (light, space, water requirements) customers will be more likely to purchase plants for specific locations in their yard.

IMPROVEMENT #4: LABEL ALL OF YOUR PLANTS

Use a sharpie pen on a popsicle stick. Cheap convenience stores carry the packages of 100 to 150 for around a dollar. Yes, it can get tedious. Turn on some music or a baseball game on the radio. People will be bringing home your plants and may not be familiar with them. They will appreciate the convenience of being able to purchase a specimen and remember it the future.

IMPROVEMENT #5: BE PASSIONATE

Sell plants that you are passionate about and that fill a specific niche. Stearns grows a variety of flowering perennials. Pentas (red, pink and rose) are a favorite as well as Pink Jacobinia and Thryallis. People like both sun and shade plants. Stearns grows both nectar and host plants for butterflies. Since she also plants vegetable and flower seeds for her vegetable garden, she will occasionally sell any extra flower or vegetable plants like tomatoes, kale, collards and marigolds.

IMPROVEMENT #6: START THEM YOURSELF

Cutting beds are important for propagation. Stearns' beds are easily accessible but still have to be fenced off from her chickens. Label your cuttings and look after them. There are some plants like Thryallis, Bahama Cassia and milkweed that grow best from seeds. A greenhouse,



Labeling every plant and providing easy-to-read signs, with price and plant details, will make your customers feel more comfortable with the purchase. Photos by Kenny Coogan

however simple, is great to have. Your profits go up when you can propagate your own plants

IMPROVEMENT #7: DON'T MIND ASKING

For 11 years, Stearns has had two plants sales per year — a weekend in late May to early June and a weekend around the beginning of November. During the sales she leaves a sign by the entrance gate indicating that she would appreciate any size pots that people have. People are generous and leave her large plastic bags of all assorted sizes of plastic pots, which she uses for the plant sales. By not having to purchase pots, your margin of profit goes up.

IMPROVEMENT #8: GENERATE SOIL

Mulching your yard will eventually give you free garden soil. Stearns has had tree trimmers leave many piles of chipped leaves and branches over the years. She also collects bags of raked oak leaves from the neighborhood. These all decompose and leave a beautiful dark soil. Several relatives have cows, so she also has access to cow manure to mix with her yard soil. The plants benefit from this mixture, and the process reduces your overhead.

IMPROVEMENT #9: THINK CONVENIENCE

Plants in small pots are easier for people to see on a table. Stearns

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Plants that are on the ground are harder to see, so make sure your signs are vibrant and clear.



has reinvested some earnings and bought several pairs of sawhorses to make tables for the small plants. It's also good to leave a lot of small cardboard boxes under the table for people to put their smaller plants in. Providing a large pot of plastic shopping bags for people to put their gallon or larger-sized plants in will be appreciated by many customers.

IMPROVEMENT #10: ADVERTISE FREELY

Craigslist and seed savers in your area can help keep people posted on current plant sales. Stearns says she has

really appreciated this form of free advertising, as it is directed to the people who are truly interested.

IMPROVEMENT #11: HIRE HELP

Stearns has also hired her friend's teenagers or older children (nephews, granddaughters and neighbors) for the bigger spring sale. They get to use their muscles and math skills and the shy ones will get to test their public speaking skills to some very sweet "plant people."

IMPROVEMENT #12: ENJOY

"Have a good time," is Stearns' final tip. You will find that plant people are wonderful to be around. ©

Kenny Coogan, CPBT-KA, is a pet and garden columnist and grows mostly edibles on his one acre homestead due to the generous knowledge provided by his green-thumbed neighbors. His goal is to be self-sustainable through his permaculture landscape. Please search "Critter Companions by Kenny Coogan" on Facebook to learn more about gardening with children.

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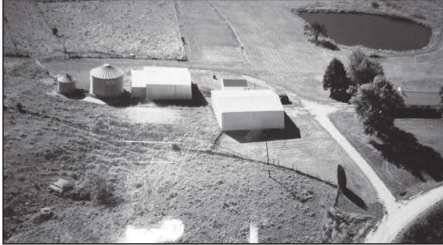
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Mulch!

It's got your garden covered

BY MARISSA AMES

ALL PHOTOS BY SHELLEY DEDAUV

WHAT IS THE MOST IMPORTANT factor for a successful garden? I asked this to my friend Kathy, a master gardener through the local university in Reno around the time I was planning my first Nevada garden. I'd grown food under my mother's tutelage before I turned 18, but this was the first time I depended on the soil to feed my own children.

Her answer was one simple, strong word: "Mulch."

She didn't tell me to wait until last frost or to avoid beefsteak tomatoes within our erratic growing seasons. Nor did she tell me to amend my soil yearly, adding copious amounts of organic material. These are also crucial factors. But her knowledge, gleaned

CLOCKWISE, FROM TOP-LEFT: Leaf mulch, wood mulch, red mulch and straw bales are all options for your garden.

through the Cooperative Extension and her own experience, told me to cover my dirt.

Mulching, for the uninitiated, is the simple act of covering soil with a protective layer. Materials can be organic or manmade, compostable or semi-permanent. Whether it's applied to avoid drought, discourage weeds, or keep bulbs warm, the focus is on what lies beneath.

If you need more convincing, the U.S. Department of Agriculture's Natural Resources Conservation Service says mulching is one of the easiest and most beneficial things you can do for your soil, and the Arbor Day Foundation says mulching is a newly planted tree's "best friend."

MULCHING LESSONS LEARNED

Even after Kathy's admonition, it didn't immediately sink in. I didn't mulch in Mom's garden. We pulled weeds both morning and early evening, and then rested when midday sweltered. Perhaps that was Mom's way of keeping three teenagers busy during summer vacation. Mulching could have reduced that weeding tenfold. And mom didn't worry about watering; Mom had a well, weren't in a drought, and she had trained her kids how to efficiently move a sprinkler.

That year I grew jack-o-lantern pumpkins. Did I mention this was my first year cultivating in Nevada? Jack-o-lanterns are fun to grow, but they don't have much culinary value. And I can purchase three jack-o-lanterns at the supermarket for how much I would pay the water authority to grow a single plant.

Pumpkin leaves spread out full and green within June, fed by an intermittent sprinkler beneath the vines. But July was cruel. Plump and smooth in the morning, the leaves shriveled by midday.

I'm not proud of what I did. I watered more. That's not the right answer when you garden

in a desert. Sure, it plumps those leaves back up super-fast. But then you receive the water bill.

Kathy's single word came back to me during the second week of wilting-and-watering. Dipping deep into the mower bin, I retrieved grass clippings, and then laid them on a tarp overnight. In the morning, I packed them tight around the stems. Leaves didn't shrivel that afternoon and I didn't turn the hose on until the next day. I could go two to three days between watering sessions instead of running out in panic to feed my failing pumpkins.

WHY WE MULCH THE WAY WE DO

Moisture retention keeps plants alive, allows you to work elsewhere instead of answering to your garden's every need, and promotes healthy fruit.

Did you know two factors for tasty tomatoes are variety and water control? The first is simple: some tomato varieties just taste better than others. But a second and newly discovered factor is how much water the plant receives when fruit forms. Well-irrigated tomato plants result in watery fruit. That's why hydroponically grown produce is so tasteless. The secret is to give the tomato only the water it needs and not a drop more. But if you're unsure of the amount, or have a busy lifestyle, "just enough" can easily become "holy cow, my plants are dying!" And compensating by overwatering after a dry stretch causes cracking.

"Just enough" water is made simpler by using driplines and mulch. Run the dripline along the soil with emitters near each plant. Cover soil and hose with mulch. Then watch your plants for a few days to see how they fare. If they wilt in the heat, it's more effective to add more mulch than increase water flow.

Summer heat upsets crops like carrots, which like warm tops and cool roots. Winter frost kills bulbs

Lazy Desert Mulching

After reading article after article and trying product after product, I learned to keep it simple. I work hard on my garden to attain maximum yield, but I don't have time to waste. I don't need to create more work.

Seeds sown into bare ground grow a couple inches before they meet the mulch. Grass clippings land around tiny carrots while leaves pack against tall, slender onion greens. Transplants sink into the soil and within minutes, and straw is packed against the stems. Potatoes grow six inches, are hilled up and grow again. When I cannot hill any more, I apply straw to reduce watering and allow even more growth. And it doesn't end there. When summer reaches the triple digits, soaker hoses point downward, and more straw lays atop to keep every precious drop where it belongs.

By harvest, I'm exhausted. I've spent hours each day cultivating, weeding, watering and preserving the vegetables. With sagging shoulders, I scan the tired and frost-damaged plot while chickens pace behind me, eager to reach fallen tomatoes. Autumn cleanup is simple: Remove the plants the chickens can't eat. And open the gate. Poultry claws dig deep into that organic layer, separating it so my hens can find pests hoping to overwinter.

Then cold weather hits. I'm not worried. I used to be embarrassed by my lazy cleanup techniques until I read an article about how keeping a cover is crucial for soil health. The entire land gets a rest.

And in the spring, the shovel digs deep in, mixing chicken droppings with decomposed leaves, straw and grass. It all rests beneath the surface to feed beneficial microbes and create nitrogen for the next round of crops.

— Marissa Ames

or pushes them out of the ground. A thick layer of organic material regulates soil temperature.

Weed suppression is a third reason to mulch, especially in gardens that get enough moisture. More water means more weeds. And the reason mulching suppresses them follows the basics of photosynthesis: plants need sunlight for growth. The vegetables above the mulch already stretch tall in the light but recently germinated seeds have to fight their way through. If the layer is thick enough, the weeds don't stand a chance.

THE CHEAPEST METHODS

It's not necessary to purchase mulch unless you have aesthetic requirements. Home Owner Associations may require you surround perennials with attractive bark or rocks. Vegetable gardening is different, especially if you're growing food to save money.

Free materials that also benefit soil include compost, leaves, sawdust or wood chips, straw or grass clippings. Search online classifieds or get to know local farmers, offering to buy hay bales that have gotten wet. Collect leaves in the fall and store in plastic garbage bags to use in the next year's garden. Contact tree care companies about receiving the chipped results of their labors.

Never use herbicide-treated grass clippings. A good friend accepted lawn trimmings from her church and used them as garden mulch. When her vegetables died, she realized the church had applied a weeding/feeding solution to the lawn but had failed to tell her. Though she disposed of the clippings, some remained in her soil. Those herbicides mean she can only plant bladed grasses, such as corn, within those spots for a couple years.

If you're using straw, look for bales that don't have seed heads still attached...unless you want to grow wheat. I didn't mind so much when grains sprouted beside my garlic. I let them ripen then pulled



CLOCKWISE: A mulched raspberry bush, mulched garlic and mulched carrots.

them for the chickens. But the next year's bales had even more seeds and wheatgrass became the first crop of spring. Also, find organic bales if possible, because some wheat is sprayed with glyphosate herbicide right before harvest so spikelets mature at the same rate. Glyphosate will kill your broadleaf crops.

THOSE MANMADE MULCHES

Weed cloth, tomato plastic and rubber mulch promise weed suppression or increased growth, but do they really work?

I've used weed cloth once and was not happy with the results. If I'd spread it beneath perennials, out of walkways, I'd have been happier. But the black fabric heated up the soil in the summer and tore beneath my gardening shoes. I only used it once. But a tear-resistant weed cloth can help northern gardens with shorter growing seasons.

The same with paper weed layers. Advertising claims were promising: it would warm the soil to increase growth and could be tilled in after harvest. But it crackled and tore. Soon the soil heated up too much. Tilling was more of a hassle than just



ripping the paper up and throwing it away. I didn't purchase it again.

Layers made from recycled tires or plastics must be removed at the end of the season, or they can pollute the ground. To some gardeners, this is worth the work. Others would rather be organic with material that can eventually become more soil.

The only plastic mulch I've ever used is that red tomato film, which promises increased yield because it reflects the right kind of light onto the plants. And though I've used it for five years, I can't testify whether it truly increases yields. Other factors have come into play each year. Did I amend the dirt enough before transplanting? How high did temperatures rise and did I use the right cooling methods to ensure blossoms didn't drop? Some years I've applied blossom set spray and others I've let nature do its best. During other years I chose different

“Just enough” water is made simpler by using driplines and mulch. Run the dripline along the soil with emitters near each plant. Cover soil and hose with mulch. Then watch your plants for a few days to see how they fare. If they wilt in the heat, it’s more effective to add more mulch than increase water flow.

planting locations or cultivated new tomato varieties, making comparison difficult. Whether or not it actually works, I do like it for two reasons: It’s easy to unfold, pin into place, and plant the seedlings into holes cut within the film. And it suppresses weeds everywhere except where light shines through the holes. If you do use plastic mulch, poke holes in it so water can pass through.

THE GOOD, THE UGLY AND THE JUST PLAIN BAD

Every mulch material has its flaws. Straw can harbor insects that crawl into the little tubes. Grass clippings may mold and

compact. Peat moss may be unsustainable and wood chips may turn sour or attract termites.

Some gardeners use old carpet, leaving it in the garden year after year instead of removing it as it drops fibers. Carpet can disintegrate with frequent watering. Recycled paper may be used as a weed barrier but it’s necessary to use newsprint with soy-based black ink. Decomposing paper can raise soil acidity as well.

A highly debated form of mulch is cocoa shells. The theobromine in chocolate is toxic to pets and the shells of the cocoa beans retain a little. Some companies treat their cocoa shells, removing the

fat that carries the theobromine, which also diminishes the sweet smell. If you use cocoa mulch, be sure it’s treated so it’s nontoxic.

And though some gardeners will tell you to never use hay because it contains weed seeds, others prefer it because it adds more nutrients to the soil when it decomposes.

In my experience, the best garden mulches are those that improve soil after harvest. This includes compost, straw, and leaves. The worst are those that must be removed because it can be difficult to get every piece. Removing mulch after harvest adds unnecessary labor if compostable material can be used instead.

What you use for mulch depends on where you’re using it, your budget, if you intend to remove it or till it in, and whether you want organic or manmade products. Research the pros and cons to each type before choosing the right one for your garden. ©



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Taking Root

Adventures with Valerian in the Garden



BY JERRI L. COOK

EVERY GARDENER HAS RULES about what they will and will not plant in their garden. I know some folks with complicated rules about spacing and companion plants, and others with notions about keeping perennials separate from annuals. I'm not one of those gardeners. I only have one rule. If it's free, I'll take it. No matter what it is. Even if I've never heard of it. If you're offering, I'm accepting. All my neighbors, friends and relatives know this. I'm the go-to person if you need to get rid of something you have too many of or, if like my neighbor Ann, you're dividing some wicked-rooted perennials.

In mid-November, Ann showed up with a bag stuffed full of freshly dug roots from her garden. She had planted some valerian a few years before, and now the plants had become uncontrollable, propagating by seed and forming thick, horizontal roots and unwieldy ascending fibrous roots. While truly grateful for the abundance, I wasn't sure what I was going to do with 10 pounds of valerian root. Ann told me to wash it off and then slice it up for drying, but as I began that process, it became apparent that I didn't have near enough drying racks for the job. Since I can't stand

The flowered tips of valerian root plants. They like full-sun with some afternoon shade, and a soil pH of at least 5.5.

to see a resource go to waste, and I didn't know anyone else who would want more than one root, I decided to try something different.

I trimmed the small, fibrous roots off of each crown that Ann had placed in the bag, leaving the large root and crown intact. I washed the small roots well and then spread them on my kitchen drying rack. Then, with some help from my husband, I replanted the crowns and placed them under a small grow light we use for starting plants in the spring. We set the timer on the light for 18 hours of light and six hours of darkness. Less than a week after the replanting, the crowns were showing significant new growth. While it is a success, replanting the crowns does pose a couple of problems.

Because we did it in the winter using artificial lighting, we have committed ourselves to keeping these plants under the light until spring. We usually don't keep the lights on for more than a couple of months. The replanted roots also take up more space than seedlings, so we will have a space issue come spring. However, we have an upper room with an excellent southern exposure, so we're hoping that when it comes time to start our regular seedlings, the valerian will be established enough to be moved from the artificial light to the natural light before moving it somewhere outside.

To thrive, valerian likes full sun with some afternoon shade. It's not going to do well planted among shade-loving perennials like ferns. Likewise, planting it in full sun will also cause the plant to be stressed. The good news is that valerian isn't all that particular about what kind of soil it grows in. As long as the pH is at least 5.5, you're good to grow. Most people don't have any problems at all growing valerian, it's controlling it that gives

gardeners the most headaches.

Valerian seeds are as hardy as they come, and valerian flowers produce prolific amounts of seeds. If you don't cut the flowers on a regular basis, it won't be long before you're dropping off bags of roots at your neighbor's house like Ann. The more seeds that fall to the ground and germinate, the more roots you're going to have to thin down the line.

You might also want to avoid porches, decks and other places where people are likely to gather when considering where to plant valerian. Don't let the little pink flowers fool you. While they smell just fine, the leaves and root of this plant have a pungent smell. Some people don't mind it at all. To others, the scent is reminiscent of sweaty feet. Keep this in mind if you're thinking about planting valerian where you entertain. The last question anyone wants a guest to ask is, "What is that awful smell?"

Like most people, I use valerian root as a calming agent and sleep aid. It's been recognized by the scientific community as an effective aid for people who have trouble getting to sleep. While there is no concrete scientific evidence to show it is effective, people also use valerian root to relieve anxiety, an upset stomach, and other symptoms associated with high levels of stress. When I'm having trouble sleeping, I simply place a couple of the small dried roots in a cup with a little chamomile, and it's off to dreamland in no time.

If you don't want to dry your valerian root, you can make a tincture from the fresh root. To make a tincture, use the thick root. Wash the roots and cut them so they will fit into a Mason jar. Once the fresh roots are in the jar, fill it with the highest proof clear liquor you can get your hands on. Put the jar somewhere out of direct sunlight, and let it sit for at least two weeks,



To thrive, valerian likes full sun with some afternoon shade. It's not going to do well planted among shade-loving perennials like ferns.

a month is preferable. To make the tincture, remove the pieces of root from the jar, saving the remaining liquor for another batch of roots.

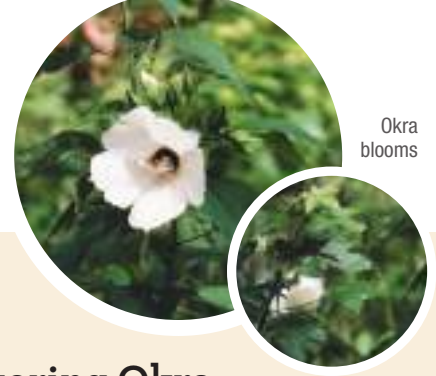
Place the liquor-soaked roots in a food processor until it's mashed. Use a cheesecloth to strain the liquid from the mashed root. This is your tincture. Store it in a small

container with a dropper. A few drops in a cup of warm water two-hours before bedtime will help you ease into a restful sleep.

Just because it's natural doesn't mean that valerian doesn't pose health risks. If taken with prescription drugs like Xanax, Valium or Seconal, it could cause severe adverse reactions. You shouldn't take valerian before talking with your doctor if you're being treated for certain sleep-disorders or have liver issues. If you're not sure about how valerian may interact with a specific drug, call your doctor's office and ask. Nearly all doctors have access to a *Physician's Desk Reference for Herbal Medicines* and can easily find information about adverse interactions caused by herbal medicines.

While valerian root acts as a sedative in humans, that's not the effect it has on cats. For cats, valerian is a stimulant. They love the stuff as much as catnip, maybe more. The bag of crowns Ann brought over sat in the mudroom for a couple of days before I got around to trimming the fine roots. In that time, our kitten rarely left its side. She played with it, purred around it, tried to pull the crown out of the bag. It turns out that if you have an obese cat that could stand a little exercise, you should let them gnaw on some fresh roots. They like to eat it, and it will make them more active. Just don't let them eat it at night unless you enjoy the sound of kitty feet tearing up and down the stairs at three in the morning.

Because of its thick root system, we've decided to plant our free valerian plants near a natural ditch that has recently began to erode. The roots will help keep the soil in place, and it's far enough away from the house that the smell won't be an issue. When it's time, we'll dig some up and look for a neighbor to give some to, maybe a neighbor with some lazy barn cats. ©



Okra blooms

Storing Okra

When canning tomatoes with okra, I cook the jars for about 30 minutes in my pressure canner. Okra soup needs to cook for about 40 minutes in the pressure canner.

I freeze okra in several ways. For fried okra, or stir-fried okra, I cook it until it's nearly done. I place it into a shallow bowl and lay zipped bags of ice cubes on top to cool the product. Then I pack it into containers and stack in the freezer.

I also freeze okra raw. Small pods, I remove caps carefully, pack into containers, and freeze. Mature pods, I cut and spread the slices on a wax-paper lined jelly roll pan. I set the pan into the freezer; in about 20 minutes, I stir gently to break apart any clumps. After the pieces freeze hard, I pack into containers and store in the freezer. Through the year, I can remove as much as I need for a soup or stew.

— Nancy Pierson Farris

Okra Stars in My Garden

BY
NANCY
PIERSON
FARRIS

WE PLANT OKRA AFTER WE harvest earlier crops. When green peas wilt, the soil has warmed enough for okra seeds to germinate. We plant okra alongside the spent pea vines.

Okra seeds are fairly large, and I sometimes plant them between early colds. As I harvest heads of Pak Choy, I use my trowel to loosen the dirt, dump in a handful of compost and plant an okra seed between the remaining Pak Choy.

After we dig potatoes, and finish harvesting early bush beans, we work the soil and plant okra and black-eyed peas. Southern peas grow well in warm soil, and like all legumes, they pull nitrogen from the air to feed the large stalks and leaves of okra. A soaker hose between the two rows irrigates both if summer rains fail.

Okra produces well on a wide range of soil types as long as the site is well drained. Soil that contains a high proportion of clay or has become compacted has fewer or smaller pores; precipitation fails to percolate through, and plant roots cannot obtain enough oxygen. Adding organic

By summer's end, okra is taller than I am.

matter can improve the soil's condition. Fifty years ago, our garden was mostly clay; over the years, we added organic matter to improve soil. All our crops grow better now, and okra especially enjoys the better drainage.

About eight weeks after planting, okra begins to bloom. Within a day or two, pods appear. To keep plants producing, we cut all the pods every two or three days. Okra becomes tough if left too long.

Okra continues to grow as it produces through the summer months. By October, stalks are over six-feet tall, and we bend them down to harvest pods.

I must wear a long sleeved shirt and gloves since my skin becomes irritated if it comes in contact with the spines on okra stalks and leaves. In early morning or after a rain, spines become turgid and are especially vicious. My husband's skin does not react the same; he usually harvests the okra for me.

Over the years, I have grown several varieties of okra. The heirloom variety Cow Horn needs 90 days to mature. Red Burgundy needs only 60 days to produce gorgeous blooms that are creamy yellow with a burgundy throat. The attractive red pods remain tender to a large size.

Clemson Spineless, which matures in just over 60 days, was developed at Clemson University in 1939, and has remained a favorite all over the world. Even large pods remain tender and have good flavor.

Okra has a few pests. Corn earworms may eat into pods, stinkbugs sting the pods, and Japanese beetles eat just about anything in the garden. Aphids can come to dine and ants may follow to feed on aphid offal. Healthy, vigorous plants can withstand a bit of damage, and we prefer to share rather than introduce toxins into our food crops.

We keep “zappers” lit throughout the summer to attract and destroy moths that lay the eggs that develop into marauding worms. We also use *bacillus thurengiensis* all over our garden to eliminate worms. Because we do not apply poisons, beneficial insects like ladybugs thrive in our garden, they consume gobs of insect eggs and hordes of aphids.

Nematodes are sneaky little devils that grow in the soil and attack plant roots, including okra. Barely visible, these parasitic threadworms attach to plant roots and live on the nutrients collected by root hairs; thus the plants become stunted, leaves yellow and drop, production ceases. The roots of an affected plant will have tiny white threads or galls containing pearly white specks, which are nematode eggs.

The Connecticut Experimental Station studied the effects of marigolds and found that the odorous plants produce a chemical that kills nematodes. I always interplant marigolds with my beans, tomatoes, squash and okra. Varieties of marigolds have been developed for the purpose of cleansing soil of nematode infestations. One year, I planted nothing but Golden Guardian marigolds in one section where okra had shown signs of nematode damage. Tomatoes, squash and okra performed well in the plot the following season.

Professors at Cornell recommended a three-year rotation using non-susceptible crops such as sweet corn in the plot one year, allowing chickens to enjoy the plot for one year, then planting vegetables like tomato, cucumber and okra the following year. I have my garden divided into sections, each of which can be opened to my flock of laying hens for a season. The chickens do a great job of cleaning the garden, including digging nematodes out of the top few inches of soil.

Neither summer heat, nor drought, nor humidity deter okra from completing its assigned task. When many other garden vegetables have succumbed, I can still harvest a few okra pods every other day. ☺



For Southern fried okra, cut pods and drop slices directly into breading mix.

Cooking with Okra

Since okra can be cooked in several delicious ways, we enjoy it nearly every day through the late summer.

The smallest pods are good cooked whole. I remove the cap from the top carefully, leaving the pod itself intact, with the juice inside. Sometimes I boil these tiny pods with a minimum of water and a dab of butter.

I have heard a rumor that some people do not appreciate the mucilagenous juice—the gumbo factor of okra. It is simple to reduce that with a bit of acid such as vinegar or tomato. I like to flavor okra with a spoonful of vinegar in which I have soaked Tabasco peppers, or I use Cajun hot sauce.

Large pods, I slice to produce eight-sided stars, which I like to cook with stewed tomatoes. I add a generous handful of chopped onion and diced peppers to the pot—hot peppers and celery are optional. In mid-summer this side dish consists of a little okra with a lot of tomatoes. By late summer, the bowl contains a lot of okra with a little bit of chopped tomato.

Another Southern tradition, okra soup, begins with the

tomato-okra base along with whole kernel corn and baby lima beans.

We also enjoy stir-fried okra. In a little oil, I cook chopped onion and diced red and/or yellow pepper until it is soft. I then dump in sliced okra and a spoonful of soy sauce. Cover and cook until the okra becomes very tender.

I sometimes make fritters. I mix a standard fritter batter, add small pods or cut-up pods and drop by spoonfuls into hot oil. When they are puffy and browned on one side, I flip them over. When browned on the other side, I remove with a slotted spoon and drain on paper towels.

For my husband's favorite, I prepare breading mix: 1/3 cup of flour, 2/3 cup of cornmeal, 1 1/2 teaspoons of baking powder. (Before he had blood pressure issues, I added salt.)

I lay three okra pods parallel on a cutting board, cut off the cap and the tip end, then cut across all three pods. I push the okra slices into the bowl of breading mix. I toss the okra gently so all pieces are coated. I leave for 15 minutes to allow breading to adhere to the okra.

Meanwhile, I heat about two inches of canola oil in a deep, cast-iron skillet. I carefully toss a drop of water into the oil—if it sizzles, the oil is ready. I carefully spoon the okra into the hot oil, and stir gently as it cooks for about 10 minutes. The golden nuggets will rise to the top when they are done.

I immediately remove to a metal colander or pottery bowl lined with paper towels.

Since okra continues to bear until frost kills the plants, I store away a good supply for use through the winter and spring.

— Nancy Pierson Farris

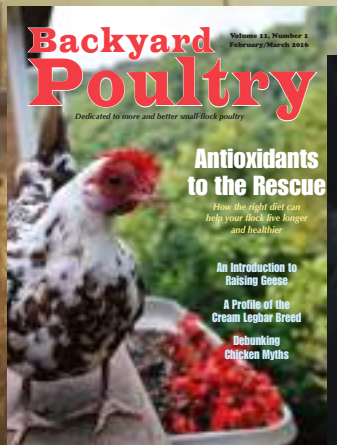
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Recipes



Chicken Gnocchi Soup

In case you need any soup recipes for your magazine, this one is awesome. I had it at the church soup supper last night, and thought I would share it with you. This makes eight bowls.

- 3 tablespoons butter
- 2 tablespoons olive oil
- ¾ cup diced onions
- ½ cup diced carrots
- ½ cup diced celery
- 4 cloves minced garlic
- Salt and pepper
- ⅓ cup flour
- 4 cups chicken broth
- 1 ½ cups half & half
- 2 cups chicken (cooked and cut into small chunks)
- 1 pound potato gnocchi
- 3 cups fresh baby spinach (remove stems)
- 1 tablespoon fresh chopped basil (dried is OK too)
- Fresh parmesan for serving (optional)

In large pot, heat butter and oil. Add onions, carrots, celery and garlic. Season with salt and pepper and cook over medium heat until vegetables are tender. Stir often.

Sprinkle the flour into the pot and stir into the vegetables. Cook 3 minutes, stirring often. Stir in chicken

broth 1 cup at a time followed by half & half.

Add cooked chicken. Bring to a simmer and maintain for 20 minutes. Stir often. Season with salt and pepper to taste.

Cook gnocchi separately to package directions. Add to soup along with spinach. Simmer until spinach is wilted. Stir in basil. Serve with grated parmesan cheese.

— Kelly Weiler



The Best Summer Salad

- Dandelion greens
- 1 clove garlic
- Olive oil
- Balsamic vinegar
- Salt and pepper

Cut up garlic. Mix with greens, olive oil, vinegar and serve. Salt and pepper to taste.

— Scott Fernhaber



Grandma's Crusty Cottage Cheese Bread

Grandma Jones lived in Medford and gave me this recipe back in 1974. It was her Cottage Cheese Bread, so likely it goes back a lot further than that! It actually was a great recipe.

- ½ cup sugar
- ¼ cup salad oil
- ¾ cup cottage cheese (large curd is best)
- 2 teaspoons salt
- 3 ½ cups flour

Dissolve one yeast cake or one package of dry yeast in 2 cups warm water in large mixing bowl.

Combine sugar, salad oil, cottage cheese and salt in a saucepan. Stir on low heat until just warm. Add sugar mixture to yeast and water, and then add flour.

Beat with electric mixer for 3 minutes until it begins to form a firm, non-sticky dough. (Add more flour if it's sticky.)

Turn out on floured board and knead until firm. Put in a oiled bowl and set in a warm place to rise until double in size.

Then, form into loaves and let rise until double.

Bake for about 45 minutes at 350°F.

Mix butter and garlic salt (or regular salt) and apply thinly over top of loaves.

— Linda D.



Miami: Where the People Play

BY HABEEB
SALLOUM
A TASTE OF
HOMESTEADING
AROUND
THE WORLD

AS A CHILD, ROAMING ACROSS the fields of Saskatchewan around our homestead, I hardly ever saw a puddle of water larger than a small pond. However, in our small library in the one-room schoolhouse that shelved some 200 works, I found a book that described the southern United States, and emphasized Florida's Miami with its ocean waves, palms, and sandy beaches. On that cold, winter, sub-zero day, for, this little farm boy, I realized there was a whole new world out there.

As a young adult, I left the cold, flat prairies and headed to Toronto, escaping the cold of Saskatchewan. But this still was not Miami.

One cold winter day, my dream of visiting Florida came to fruition. Seafood and sun were on my mind as I booked my trip to Miami. The Florida I learned about from tourist literature now lay before me.

Along with its beaches and its ocean shores, I wanted to feast on the creatures of the sea. Growing up in Saskatchewan, seafood was simply not available. Shellfish was virtually unheard of, but we did have access, once in a while, to fresh-water fish. As the plane hovered over Miami, I realized that books at times do indeed tell the truth. Miami looked before me like a picture-postcard of beauty.

Sprawling across 2,054 square miles of land, Miami, a metropolis of some 420,000, is actually two different cities: Miami, the mainland city, and, to the east, connected by causeways to Miami Beach, a city of beaches. Truly cosmopolitan, Miami is the mainland city, with a mixture of ethnic groups, dominated by an overwhelmingly Latin American flavor. Much different is Miami Beach, almost exclusively tourist-orientated, saturated with hotels and other visitor abodes, as well as restaurants of all types. The two cities complement each other and travelers usually refer to them as simply, "Miami."

This two-in-one city is one of the world's most renowned vacation spots. A large world-class metropolis, it is one of the most renowned cities visited by tourists from the four corners of the globe. Most arrive at Miami International Airport, one of the busiest airports in the country. The city is also known as the cruise capital of the world, with ships sailing to and from ports around the world. Millions travel from the cold parts of North America by car to enjoy their winter vacation under the Miami sun. All in all some 15 million tourists visit the Greater Miami area annually.

Most of these tourists usually come to revel in the warm all-year-round Miami weather. However, there is much more to lure the visitor. Besides the beaches and all their activities, including great boat tours and deep-sea fishing,

After spending the day exploring a few of the hundreds of sites, one is more than likely ready for a good meal. And Miami has plenty to offer. The food of the city due to the large influx of Cubans after the Cuban Revolution is saturated with Cuban influence.

golf courses, some of which have been rated in the top 10, the city is filled with an endless variety of restaurants, high-end plush hotels to budget motels, boutique shops, as well as crowded bars and nightclubs. The lively nightlife is one of the trendiest in the world's tourist resorts.

For those enamored with shopping, the city appears to be sprawling with large malls. Collins Avenue, Washington Avenue, Lincoln Road and South Beach are the best places to feel the throb of the shopping experience. Biscayne Boulevard is another prime spot for shopping, and in addition there are other areas for tourists to thin out their wallets.

When people hear the name Miami, beaches come to mind. There are 16 beaches visitors frequent, each offering their own specialties.

South Beach, located on the southernmost part of Miami Beach, where visitors head for when they first reach Miami, is noted for its topless sunbathing beauties, which draw the crowds—topless dress is permitted only on South Beach.

Other tourists make their way to the Art Deco Historic District of South Beach, set on a one-square mile area. A showcase for early 20th century art, it incorporates a series of restored structures with the architecture from that era.

All through the area trendy boutiques, hotels, restaurants, bars and art galleries are found. Depending upon one's taste, be it shopping or partying, South Beach is well known for being a trendy spot frequented by artists, celebrities and international supermodels.

South Beach boasts that it caters to some of the most beautiful people in the world—a good number of Hollywood screen stars have made this city home.

After partying all night in one of South Beach's world famous nightclubs, it is easy to

understand why a good number of travelers say that no visit to Miami would be complete without at least a stop at South Beach.

For visitors who like the exotic and colorful, a tour of the "District of Little Havana" and the other Latin-American spots in Miami would be an excellent excursion. The countless Hispanic immigrants from Cuba, Central America, Puerto Rico, and South America have made Miami home. Spanish is used in almost every part of the city. Signs are in both English and Spanish especially in Little Havana.

Should one have time to spare there are many more choices on what to see and do, most available by organized tours. Miami Seaquarium Museum—a great stop where one can witness an outdoor aquarium; Miami Zoo—some 1,200 animals living in free-range environments; Coral Castle—a bizarre monument consisting of coral sculptures; Everglades National Park—an unusual park, it is home to 14 rare and endangered species; Jungle Island—offers an up-close look at tropical birds in their natural habitats; Miami Museum of Science—a learning adventure for the whole family; Monkey Jungle—where humans are caged and the monkeys run wild; and Vizcaya Mansion—a glimpse of the U.S.'s top resort where high

society flourishes, are all worth a stopover on a visitor's itinerary.

After spending the day exploring a few of the hundreds of sites, one is more than likely ready for a good meal. And Miami has plenty to offer. The food of the city, due to the large influx of Cubans after the Cuban Revolution, is saturated with Cuban influence.

In the small inexpensive cantinas, especially in Old Havana, rice and beans, chicken stew and salsa are almost always a lunch special. The Sandwich Cubano, sliced pork and mild cheese, is sold in almost every cantina. No one can say that they've eaten in Miami without having tried one of the city's Cuban sandwiches. As for drinks, espresso coffee seems to be a required morning and afternoon drink for most adults—a very popular morning beverage for the working masses.

In this culturally diverse city, other immigrants have, to a lesser extent, added to the culinary tastes of the city. The traditional African dish Gumbo (seafood soup or stew) served with rice, and Sangria, a Spanish drink that is a mixture of wine and fruit juices, enhance the Miami kitchen.

Miami also has excellent restaurants of every kind, from Italian to various types of Asian. This collection of influences has

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 Mexico, and then he travels on to Cuba.



given the city a rich culinary landscape and reflects the blend of cultures in its gastronomy.

There are some 3,500 restaurants in Miami and a good number are outstanding in what they offer. Besides Cuban food that appears to be everywhere and the ethnic food outlets, there are restaurants that cater to every taste and whim.

Joe's Stone Crab, a Miami eating place which specializes in preparing stone crabs in its own way, has been in business for over a 100 years, and is so successful that there are always long lines of hungry patrons waiting.

For romance, Miami is the place. Restaurants abound for those seeking fine dining in an atmosphere of romance, and the ideal spot is the Casa Tua. Most patrons are dazzled by its romantic atmosphere and pleasantly surprised by the fine European-style dishes. One very satisfied customer who stayed in this lover's nook once wrote: "All that you can envision about paradise and more are to be found here."

On the other hand, for those wishing to dine in style on American food, the Capital Grille is the place. This steakhouse is frequented by many tourists arriving to relish the excellent steaks and fresh seafood offered there.

However, a good number, especially first time visitors, venture to the Garcia Seafood Grille to try its Gumbo—an iconic dish in Miami's cuisine. It is a pleasant culinary experience that one does not quickly forget.

As I relished my Sandwich Cubano, I thought of the immigrant food we ate on our Saskatchewan homestead—wholesome, healthy and fresh. Here, I was enjoying Cuban immigrant foods, a little different, but in sunny Florida.

Here is a sample of a few recipes any tourist can enjoy in Miami, the second homeland for many Cubans.



Ensalada de Aguacate y Piña — Avocado and Pineapple Salad

SERVES 8

Here is a great bright and fresh salad that offers a creamy and sweet addition to any dinner table.

- 4 tablespoons olive oil
- 4 tablespoons lemon juice
- ½ teaspoon salt
- ½ teaspoon black pepper
- ½ small red onion, thinly sliced
- 1 teaspoon seeded finely chopped hot pepper
- 1 large avocado, peeled and thinly sliced
- 1 small pineapple, peeled, cored, quartered then thinly sliced

To make the dressing, in a bowl, mix together the oil, lemon juice, salt, pepper, onion, and hot pepper. Set aside for 1/2 hour.

Place avocado and pineapple in a bowl. Gently stir in dressing then serve immediately.



White Gazpacho Soup

SERVES 8

- 4 medium cucumbers, each about 6-inches long, peeled and chopped
- 4 garlic cloves, crushed

- 3 cups sour cream
- 1 cup plain yogurt
- 1 teaspoon salt
- ½ teaspoon black pepper
- 1 cup water
- ⅛ teaspoon cayenne
- 2 tablespoons finely chopped green onion
- 2 tablespoons finely chopped parsley
- 4 tablespoons toasted slivered almonds

Place all ingredients except the green onion, parsley and almonds, in a food processor and process until smooth, about 2 minutes. Transfer to serving bowl, cover with plastic and refrigerate overnight.

When ready to serve, garnish with remaining ingredients.



Moros y Christianos — Cuban Style Black Beans and Rice

SERVES 8 TO 10

Somewhat different than the same dish served in Spain, it is as its name indicates: (Moors and Christians), the beans the Moors and the rice, the Christians.

Cubans enjoy this dish with fried eggs on the side and fried plantain (maduros). To fry them, slice the plantains lengthwise and fry in hot oil, turning them over occasionally, until golden, about 2 to 4 minutes then sprinkle with a little salt.

- 2 cups dried black beans, rinsed
- 4 tablespoons olive oil
- 2 medium onions, finely chopped
- 4 cloves garlic, crushed
- 2 medium bell peppers, seeded and finely chopped
- 2 tablespoons finely chopped fresh coriander leaves
- 3 medium tomatoes, finely chopped
- 2 tablespoons white vinegar

1 teaspoon salt
 1 teaspoon oregano
 1 teaspoon black pepper
 1 teaspoon cumin
 ½ teaspoon allspice
 1 cup white rice, rinsed
 3 cups chicken stock

In a saucepan, place water to about 3 inches over the beans and bring to boil. Cover and cook over medium heat for 2 hours or until beans are tender but still whole, adding more water if necessary. Drain and set aside.

Heat the oil in a saucepan then sauté onions, garlic, bell pepper and coriander leaves over medium heat for 10 minutes. Add tomatoes and stir-fry for a further 5 minutes. Stir in the beans and remaining ingredients then bring to boil. Cover and cook over low heat for 15 minutes. Turn off the heat, stir, re-cover and allow to cook in own steam for 30 minutes.

Note: Substitute red kidney beans for the black beans and you have a type of conгри.



Fricasé de Pollo — Cuban Chicken Stew

SERVES ABOUT 8-10

Quite simple to prepare, it is important to note that the chicken needs to be marinated the night before preparation.

6 cloves garlic, minced
 ¼ cup lime juice

1 teaspoon salt
 1 teaspoon black pepper
 2 teaspoons paprika
 2 teaspoons cumin
 6 tablespoons olive oil for paste
 1 whole chicken, 3 ½ to 4 pounds, skin on and cut up into pieces
 1 large onion, finely chopped
 2 red bell peppers, seeded and julienned
 ½ cup white wine
 10 cups water
 4 medium potatoes, peeled and cut into 1-inch cubes
 2 cups frozen green peas
 ¼ cup capers
 ½ cup finely chopped green onion
 ½ cup sliced pimento-stuffed olives

To make the marinade:

The night before, in a bowl, mix together the garlic, lime juice, salt, black pepper, paprika, cumin, and 2 tablespoons of the olive oil to form a thick paste. Rub the paste onto the chicken pieces. Place chicken in a bowl, cover with plastic wrap, and refrigerate overnight.

Preparing the chicken stew:

In a frying pan, heat the remaining oil over medium heat. Add the onion and bell pepper and sauté for 10 minutes, until the vegetables are soft. Remove the vegetables and place in a large saucepan and set aside.

Add the chicken pieces to the hot oil with its marinade in the frying pan and sauté over medium heat until golden on both sides about 10 to 15 minutes.

Remove chicken from hot oil and add to saucepan. Add wine and water making sure that there is enough water to cover the chicken. Bring to a boil, and then reduce heat to medium-low, and cook covered for 1 hour, adding more water if necessary.

Add the potatoes and peas, cover, bring to boil then cook over medium heat until the potatoes are soft, about 30 minutes, stirring occasionally, adding more water if necessary.

Just before serving, stir in the remaining ingredients.



Easy to Make Seafood Gumbo

SERVES 8

There are many different ingredients and endless ways to prepare this dish. This is my version. If served with cooked rice, it makes a perfect delicious meal for the whole family.

4 tablespoons butter
 1 large red bell pepper, seeded and finely chopped
 1 large onion, finely chopped
 4 cloves garlic, crushed
 1 small hot pepper, seeded and finely chopped
 1 medium potato, grated
 2 ½ cups chicken broth
 3 tablespoons tomato paste, dissolved in 1 cup water
 1 ½ teaspoons salt
 1 teaspoon pepper
 1 teaspoon fish spices
 ½ teaspoon turmeric
 1 pound uncooked shrimp
 ½ pound scallops, fresh or frozen
 ½ pound crab meat
 ½ pound frozen or fresh okra, chopped (if not tiny in size)
 2 tablespoons chopped fresh coriander

Melt the butter in a large saucepan, and then sauté over medium heat the red pepper, onion, garlic, hot pepper and potato for 10 minutes, stirring occasionally. Add chicken broth, tomato paste, salt and the spices and bring to boil. Cover and cook over medium/low heat for 30 minutes. Stir in remaining ingredients, except the coriander leaves, bring to a boil, cover and cook then cover and cook over medium/low heat for 10 minutes. Transfer to a serving bowl, garnish with the coriander leaves and serve hot along with cooked rice. ©

Summer Smoothies

Use those fresh garden fruits and vegetables to make a healthy drink

BY KENNY COOGAN

THE LAST YEAR OR SO OF HIGH SCHOOL through college, a close group of friends and I would go rollerblading or bike riding along the river. We would travel between three and 10 miles each trip and when we returned we would quench our thirst by preparing oversized, revitalizing smoothies. The smoothies acted as our vegetable, mineral, fruit and protein source. The blender masticated our drink, which allowed us to take in a large amount of nutrient-rich calories to feed and rebuild our muscles and aid in our digestion.

Today, I still enjoy a fruit- and vegetable-based smoothie multiple times a week after a hearty workout in the backyard. Smoothies can act as a meal replacement and are easy to consume on the go. The main difference between my smoothies today compared to my college years is that my smoothies presently change according to the season and what I am currently growing in my yard. Since I am blending produce that I have an overabundance of from my garden, I am saving money and reducing food waste.

One of my favorite tips for creating a smoothie is to prepare it in the container you are going to drink it from prior to putting it in the blender. This way you know exactly how much liquid and vegetables will fit. This method allows you to easily rinse out the blender before it gets hard to clean. Enjoy these spring and summer themed smoothies that you can make straight from your garden. Blend responsibly and stay healthy! 🌱



Kenny Coogan, CPBT-KA, is a pet and garden columnist and has authored an ecological themed children's book titled "A Tenrec Named Trey (And other odd lettered animals that like to play)." He enjoys cooking and blending produce from his yard. Please search "Critter Companions by Kenny Coogan" on Facebook to learn more.

InGREENients

These leafy greens are popular for smoothie recipes. They can be combined or used individually to form the leafy green portion of any recipe. The best way to decide what makes it in the final formula is to see what is growing best in the garden at the time of the smoothie.

- Arugula
- Beet greens
- Bok Choy
- Collard greens
- Dandelion greens
- Green and red leaf lettuce
- Kale
- Parsley
- Romaine lettuce
- Spinach
- Swiss chard
- Turnip green



Citrus Celebration

- 2 peeled citrus (lemon, orange, tangerine or grapefruit)
- 3 cups leafy greens
- 1 banana
- Half a cucumber
- A sprig of cilantro
- Chunk of peeled ginger
- 8 ounces of filtered water

After a year or so of fighting to keep my cucumber vines alive I have now found a few varieties that do well in my area—including the exotic, yet tiny, Gherkin. Now, I am happily being inundated with these juicy, high water content, fruits. The combination of cucumbers and freshly peeled citrus is a cause for a celebration. The piece of peeled ginger brings a spicy quality to the drink, as well as aiding in digestions, reducing nausea and fighting the common cold and flu.

Powerful Parsley

- 1 cup fresh parsley (Italian, Japanese or curly)
- 1 ripe mango, peeled and pitted (papaya or kiwi are great alternatives)
- 2 large ripe bananas, peeled
- 3 cups leafy greens
- 8 ounces of filtered water
- Blend until smooth

Parsley is not just a garnish. Parsley easily grows in my herb bed and I consider it a superfood. One cup of parsley contains around 22 calories, 2 grams of protein and 2 grams of fiber. It is also a complete protein containing all of the essential amino acids. One cup of parsley contains 3.7 milligrams of iron, making it the richest source of iron from any leafy green. Since papayas and bananas are easy to obtain from my Southern garden, this smoothie is a popular one to make. Peeling, cutting and freezing the bananas prior to making the smoothie will result in a refreshing frozen treat.



Mighty Mulberry

- ½ cup of mulberries (blackberries, raspberries as alternatives)
- 2 ripe pears or apples, chopped
- 1½ cup almond milk
- ½ teaspoon vanilla extract

Blackberries are great, but growing a mulberry tree that is thornless and does not take up a large footprint on your property seems like a better alternative. Mulberries support our immune system, provide antioxidants and can help maintain our blood sugar. Mulberry trees are generally hardy in Zones 4 to 8.

To make your own almond milk, soak almonds in water for 24 to 48 hours. Rinse the almonds and blend the soaked almonds with water until smooth.



PB & J Greens

- 2 cups leafy greens
- 1 cup strawberries
- ¼ cup creamy peanut butter
- 1 banana
- 8 ounces of filtered water
- Protein powder (optional)

If you are craving the comfort of your childhood, this healthy alternative to the classic PB & J will do your body good. Fresh strawberries, leafy greens and protein rich peanut butter will give you the taste of nostalgia without the empty calories of white bread. If you don't grow your own strawberries, you can visit a you-pick farm or purchase them in a flat for a fraction of the store cost.

Tomato Twister

- 4 medium carrots
- 6 medium tomatoes
- Pinch of salt and black pepper
- 1 stalk of celery
- 2 tablespoons of lemon juice
- Hot pepper to taste

Just as the carrots and celery are ending their season, tomatoes and peppers start coming in by the bushels. An added benefit of blending fresh tomatoes is that the small blemishes disappear in the whirlwind the blender creates. Raw tomato juice provide us with vitamin A, vitamin K, vitamins B₁, B₃, B₅, B₆, B₇, vitamin C, folate, iron, potassium, magnesium, chromium, choline, zinc, and phosphorus. ©

Apple Cider Vinegar on The Homestead

BY RHONDA CRANK

BELIEVE IT OR NOT, apple cider vinegar is not a new trend among homesteaders. Using raw apple cider vinegar has been around for thousands of years, and has been traced as far back as 3,000 B.C., to the Egyptians, the Babylonians, the Greeks and the Roman Empire.

They used it as a condiment, a preservative, for cleaning, as medicine and for personal hygiene, just to name a few. In 400 B.C., Hippocrates found that natural, undistilled (raw) apple cider vinegar is a powerful healing and cleansing agent because it has natural antibiotic and antiseptic properties. History records that Christopher Columbus was among the many sea captains who carried apple cider vinegar in barrels for prevention of scurvy among his crew. During the U.S. Civil War, it was used to disinfect and heal wounds.

WHAT IS APPLE CIDER VINEGAR?

Apple cider vinegar is made from crushed apples, peel and all, which are allowed to ferment. It has a natural rich brown color. The heavier mother enzyme is the brown particles you see settling on the bottom

of the bottle. All you have to do is shake it. You may still have pieces of it floating in the bottle, but that's okay, it's good for you.

Natural apple cider vinegar has a pungent odor that may make your eyes water. It never needs refrigeration and keeps indefinitely.

WHY USE RAW, ORGANIC, UNFILTERED?

Sadly, many of us buy food based on what it looks like and how it is advertised, not on its nutritional value. Vinegar producers began to take advantage of that by producing pasteurized, refined, distilled vinegars because they are more pleasing to the consumers' eyes than natural, unfiltered, raw vinegars, which have bits and pieces floating in them.

Top Uses of Apple Cider Vinegar

FOR HOME

1. If you have a problem with fruit flies or gnats, pour ¼ cup apple cider vinegar in a bowl. Put the bowl in a plastic bag or cover with plastic wrap. Poke a few holes in the top of the bag or wrap and leave sitting on the counter. These annoying little bugs can't resist the ACV and will be trapped inside and drown.

2. If you buy fruits and veggies, bring them home and wash them in a vinegar wash. The ratio is 1/3-cup vinegar to 2 or 3 cups of water. I use my apple cider vinegar for this, but many people



use white vinegar on fruits and veggies that are non-porous. This removes pesticides from the skin, germs from shipping and handling, and some say keeps them fresher a little longer.

3. If you run out of buttermilk or don't use it very often, don't worry, just make your own. Add 1 tablespoon of apple cider vinegar to 1 cup of milk and let it sit for 5 minutes. There ya go— buttermilk!

4. If you soak your propane lantern mantels in vinegar for several hours and allow them to air dry before using, they will last longer and burn brighter.

FOR HEALTH

1. Taking one to two teaspoons of apple cider vinegar before meals is proven to dramatically reduce insulin and glucose spikes in the blood. If you or anyone in your family suffers from diabetes, then you know these spikes can damage many health systems including the heart.

2. For recovery from fatigue, mix two heaping teaspoons of raw organic honey and two teaspoons of raw organic apple cider vinegar in 12 ounces of clean water and drink. You will revive in a matter of minutes. Many old-timers used this during the long days of harvest and planting.

3. Sore throat/laryngitis: Mix one teaspoon apple cider vinegar in four ounces of water, gargle, rinse, and spit. Repeat for a total of three times. Don't swallow the gargled mixture because apple cider vinegar will act like a sponge and draw toxins and germs from the throat and mouth into itself. Repeat every three hours.

4. First thing every morning, we drink apple cider vinegar tonic. We mix three teaspoons of apple cider vinegar in 8 to 12 ounces of cool water and drink. This




Valuable health benefits are lost during the process of pasteurization, refining and distilling of vinegar. When vinegar is distilled (turned to steam by heating), the mother enzymes are destroyed, which removes all the potassium, phosphorus, natural sodium, magnesium, sulfur, iron, copper, other trace minerals, essential amino acids and pectin. All of this to say the process removes the healthy part.

While white, dead vinegar is fine for cleaning projects, it's never to be consumed or used on the body. It is cheaper than raw, organic, unfiltered apple cider vinegar, so it is a better alternative than harsh chemicals, which pollute our homes, bodies and environment. For bigger cleaning projects, I use white vinegar for cost effectiveness, but never for our bodies or our animals.

Starting with organic, raw apples provides the healthy ingredients needed to produce the best natural apple cider vinegar. The fermentation process develops the mother—the bits and pieces that end up floating in it—along with all its health benefits, in a raw (uncooked)

state. This process preserves the vital minerals, acids and nutrients. Leaving the vinegar unfiltered ensures these same nutrients are readily available to you for use in your home, for your health, for your hygiene, and for your animals.

My grandfather was a believer in apple cider vinegar, while many of his counterparts weren't. I can't say it was the sole source of his success, but he never used a vet. His animals always were sold for top dollar at auction and were considered the healthiest around by many.

So what do you think? Do you use it already? Will you add it to your homestead arsenal? These are just a few of the thousands of uses for this marvelous master of miraculous results. We use it every day. Our goal is to make it ourselves. The ability to make your own and control the results is well worth the time and learning curve to us. I'll be sharing our journey with you. 

Rhonda Crank and The Pack wish you a happy and safe journey. Rhonda is almost finished with her book about apple cider vinegar, where she will share all the benefits, uses, and directions as her family uses it.

breaks the fast of the night by hydrating our bodies and restoring electrolyte balance.

FOR HYGIENE

1. Equal parts apple cider vinegar and (clean—unchlorinated, unflouridated) water mixed and onto skin in contact with poison ivy or poison oak will help stop the itching and pain. It will decrease the swelling as well. Keep this mixture in the refrigerator for best results.

2. Dabbing any minor cuts and abrasions with straight apple cider vinegar will help the blood to clot and disinfect the wound.

3. For dandruff, apply two to three tablespoons of apple cider vinegar to the scalp area affected. Let it sit for five minutes before shampooing.

4. Soak dentures overnight in vinegar, and then brush in the morning to remove any built-up food and stains. This is a safe, natural solution without the toxic residue many denture cleaners leave behind.

FOR FARM ANIMALS

We use apple cider vinegar for all of our farm animals. To us, it's just as important how we care for their health and well-being as how we care for ourselves. After all, we are in control of what our animals consume.

1. For dogs or cats, add one teaspoon of apple cider vinegar to their water bowl. This improves the health of their coat, aids in removing toxins from their digestive tract, regulates the digestion and helps improve the general health of the intestines. It also will help dissolve fats, which

helps maintain a healthy weight. The main reason I do this is to boost their immune systems. I do this at season changes and anytime they seem a little sluggish. Mine seem to enjoy it for one to three days then they aren't as thrilled about drinking the apple cider vinegar water.

2. Mix two to three teaspoons apple cider vinegar in a gallon of water for your poultry. This boosts their immune system. I do this at the change of seasons or any time my flock seems stressed or undergoes a stressful situation like a predator attack. Offer it for at least five days. I usually go for seven at change of seasons. The first few days they seem to drink it up like candy. After that the consumption goes down.

3. In ruminant animals, those that eat grass and chew the cud,

apple cider vinegar can have many benefits. Since it's full of acetic acid, it's like giving them a dose of concentrated nutrition. It's been proven to help increase milk production. Just to mention a few of the benefits: relieves scours, helps with food assimilation, prevents and resolves kidney stones, and relieves foot rot (applied externally and taken internally). The usual dose is three teaspoons of apple cider vinegar for every five gallons of water. When applied externally, there's no need for dilution.

4. In horses, apple cider vinegar helps prevent intestinal stones. The improvement of the health of the hooves is remarkable. Apple cider vinegar is also an excellent insect repellent (for all livestock). Flies especially don't like it.

— Rhonda Crank



Choosing and Using Canning Lids

BY GAIL DAMEROW

ARTWORK BY BETHANY CASKEY



The underside of a metal lid has a plastic coating and a bonded plastic gasket. A metal band is needed to hold the lid in place during processing.

FOR CANNING FOOD IN JARS, only lids designed for the purpose will provide a safe seal. Lids for home canning come in one of two diameters, depending on whether they fit narrow mouth jars or wide mouth jars. Narrow mouth lids, known as regular or standard lids, are 2 3/8-inch in diameter. Wide mouth lids are three inches in diameter. Both sizes are available as either single-use or reusable.

SINGLE-USE LIDS

A single-use lid consists of a flat metal disk, plastic coated on the inside, with a plastic gasket bonded around the edge. The most common lids are plain metal, often with the manufacturer's name printed on them. Sometimes they come in solid colors, or painted with attractive designs, intended for gift-giving.

When you buy jars new in the manufacturer's box, they may come with a set of these lids, along with metal bands that screw onto the jars to hold the lids in place during processing. Once the original lids have been used, you will need to purchase new lids.

Both wide mouth and narrow mouth lids come in boxes of 12, with or without metal bands. While the lids are not intended for reuse, the bands may be washed, stored dry and used multiple times. Because this style of

lid consists of a disk and a separate band, it is sometimes referred to as a two-piece canning lid.

All brands made in the United States, including Ball and Kerr, come from one company — Jarden (jardenshomebrands.com) — and are BPA free. Unused lids supposedly remain usable for about five years, after which the gasket may deteriorate, causing the seal to fail.

To apply single-use lids, follow these steps:

1. Wash and rinse the lids, and set them aside on a clean towel.
2. After properly filling each jar, wipe the rim with a clean, damp paper towel.
3. Place the lid, gasket side down, on the cleaned rim.
4. Place a metal band over the lid and screw it down (see "How Tight Is Tight Enough?" on page 55).
5. Using a jar lifter, place the jar in the canner for processing.

During processing, two things happen: air escapes from the jar, and heat causes the gasket to soften. As the jar cools and its contents contract, a vacuum forms and pulls the lid down and the gasket seals air-tight against the jar's rim. When the seal is properly formed, the lid pulls down with a satisfying, "Pop!" Those of us who enjoy canning listen for the sound. It may occur as the jars are being removed from the canner, or it may not occur until the jars have been cooling awhile.

When a lid pops, the center becomes depressed. You therefore can tell a seal is tight if the lid is dished downward after the jar cools. The way food settles in the jar can be another clue, but one that takes experience to learn to recognize.

When a seal fails, it is most likely to occur as jars cool, giving you time to either reprocess the food or refrigerate it for immediate use. Occasionally a seal fails during storage, causing the food to spoil in the jar. Every canner needs to know the methods for testing a seal, as described under "Testing the Seal" on page 56.



REUSABLE LIDS

Reusable lids consist of three pieces: a plastic disk, a separate rubber gasket, or ring, and a metal screw-on band. These lids are made by S&S Innovations and sold under the Tattler brand (reusablecanninglids.com). Commonly called Tattler lids, they are made in the United States, are BPA free, and are dishwasher safe. The lids are reusable as long as they remain undamaged. The rubber gaskets also may be reused unless they get cut or become stretched out of shape.

Tattler lids may be purchased in boxes of a dozen, or in bulk. The disks are typically white but are sometimes offered in solid colors. They come with the rubber rings, but not with screw-on metal bands, which are identical to those used for metal lids. Metal bands and replacement rings may be purchased separately.

Although Tattler lids are initially more expensive than single-use lids, being a one-time purchase makes them considerably cheaper in the long run. Exceptions would be if you are canning foods to give as gifts or offer at a farmers market, where the lids become unavailable for reuse.

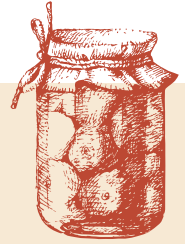
Tattler lids are applied slightly differently from two-piece metal lids. If you are already using two-piece lids, the Tattler process takes a bit of getting used to. To apply a Tattler lid, follow these steps:

1. Wash and rinse lids and rings.
2. Place lids and rings in simmering water until you are ready to use them.
3. After properly filling each jar, wipe the rim with a clean, damp paper towel.
4. Place a ring and lid combination on the cleaned jar.
5. Place a metal band over the lid and screw it down (see “How Tight Is Tight Enough?” on page 55).
6. Using a jar lifter, place the jar in the canner for processing.
7. When the processing time is up, turn off the burner and let the canner cool for 10 minutes.
8. After the jars are removed from the canner and food stops bubbling in the jars, firmly tighten the bands to ensure a good seal.

ABOVE: A single-use metal lid consists of a disk and a screw-on band. A reusable lid consists of a disk, a rubber gasket, and a screw-on band.

RIGHT: Warm Tattler lids and rings in simmering water until you are ready to use them. Remove each lid-ring assembly one at a time using tongs or a pickle pincher.

Canning Code



METAL BAND. A metal ring that screws down over the threads of a canning jar to hold the lid in place during processing.

HEADSPACE. Empty space between the top of canned food in a jar and the jar's rim.

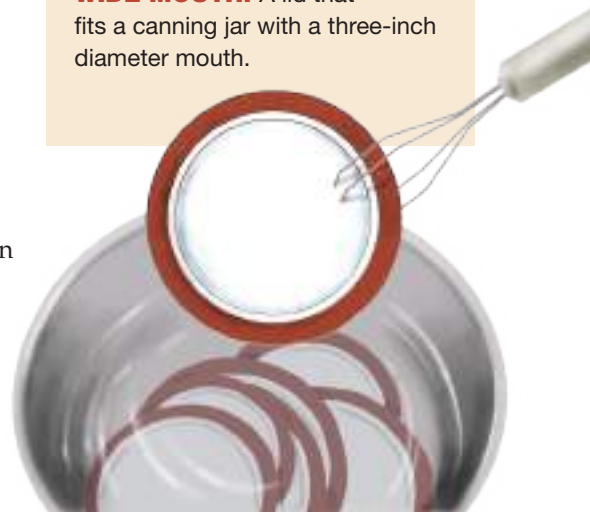
NARROW MOUTH. A lid that fits canning jars with a 2-3/8 inch diameter mouth; also called standard.

TATTLER LID. A three-piece canning lid consisting of a plastic disk and rubber ring, held in place with a metal screw-on band.

TWO-PIECE CANNING LID. A canning lid consisting of a metal disk bonded to a gasket and held with a metal screw-on band.

WECK JARS. Canning jars with rubber rings and glass lids, widely used in Europe.

WIDE MOUTH. A lid that fits a canning jar with a three-inch diameter mouth.



As with a metal lid, vacuum pressure pulls a plastic lid against the rubber gasket to form a tight seal. After the jars cool and the bands are removed, you can tell each seal is tight by lifting upward on the lid. If a seal fails, the lid will come off the jar.

I've seen claims that Tattler lids won't seal because the plastic disk lacks flexibility, which is nonsense — Weck canning jars, with their inflexible glass lids and reusable rubber gaskets — have been safely used in Europe since the late 1800s. Sealing jars with Tattler lids works much the same way as sealing Weck jars.

ONE-PIECE LIDS

One-piece metal lids were once widely sold for home canning and still may be found. They are the same as metal lids used by commercial food processors that process food in glass jars. For home use, they are more popular for food storage than for food processing, for these reasons: you must make sure the lids are designed specifically for food processing; using them is slightly more complex than using multiple-piece lids; and once sealed, these lids can be difficult to remove intact.

They are, however, handy for use on jars that have been opened but the contents not immediately used up. Without one-piece lids, you'd be left fiddling with a lid and a band



A single-use metal lid is usually removed with a bottle opener. To remove a Tattler lid, wedge a table knife between the gasket and the jar's rim.

every time you wanted to refrigerate a partial jar of home canned food.

On the other hand, for food storage, metal one-piece lids have two disadvantages: they come only in the narrow mouth size and eventually they corrode. Plastic one-piece lids are available in both wide mouth and standard sizes. They may not be as appealing, but they are more durable and may be tossed in the dishwasher without concern for corrosion. Plastic one-piece lids are for food storage only; they cannot be used for processing hot jars.

CARE OF LIDS AND BANDS

With both two-piece lids and Tattler lids, after jars have cooled for at least 12 hours, the metal band should be removed before the jars are washed and stored. If the bands are left on the jars, you might not notice if a seal has failed. Further, bands left on jars tend to rust and become difficult to remove

later. Washed, dried, and stored where they won't get rusty or bent, the bands may be reused any number of times.

The typical way to open a jar sealed with a single-use metal lid is with a bottle opener. To avoid damaging a reusable Tattler lid or its rubber gasket, wedge a table knife between the gasket and the jar's rim; do not use a sharp knife, or you risk cutting the gasket and rendering it no longer usable.

Before each canning session, examine your lids for damage, wash them in soapy water, and rinse them well. Check rubber gaskets to see that none is cut or stretched out of shape. Make sure screw-on bands are not rusty, bent, or warped. The bands need not be washed prior to reuse, provided they were stored clean. ☺

This is the third in Gail Damerow's series teaching you how to start canning. The series started in the March/April 2016 issue.

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How Tight Is Tight Enough?

A cause of anxiety for many home canners is learning to screw metal bands onto jars with just the right amount of tension. Whether you use two-piece lids or three-piece Tattler lids, tension is usually described as “fingertip tight.” A helpful way to learn correct tension is to practice with an empty jar.

Place the jar on the counter. Place a lid on the jar. With one finger in the center of the lid for stability, use the other hand to screw down the band just to the point of resistance, which is when the jar itself starts to turn. The band is now “fingertip tight.” If you do the same thing with water in the jar to within an inch of the top, then turn the jar sideways, a “fingertip tight” seal will prevent water from leaking out of the jar.

When tightening the band on a metal lid, turn the band until you feel resistance. Then, without using force to crank the band tight, slightly snug down the band by turning it one-quarter inch more. Some canners use Ball’s Sure Tight band tool—essentially a torque wrench for canning jars—that is designed to secure bands with precisely the right amount of torque. After the jars come out of the canner, do not retighten the bands or you will risk breaking the seal.

When tightening the band on a Tattler lid, turn the band just to the point of resistance, and then stop. After the jars come out of the canner, and food has stopped bubbling in the jars, retighten the bands to ensure a good seal. Some canners like to use a jar wrench to tighten hot bands and to loosen sticky bands after the jars cool.

— Gail Damerow





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To test any seal, lift up on the lid.
To test the seal of a metal lid, press down on the lid, tap the lid, or look for a depressed center.

Testing the Seal

Always test each jar for a sound seal after processed jars have cooled for at least 12 hours and the metal bands have been removed. For Tattler lids, use the first method; for two-piece lids, use any or all of the following methods.

- Grasp the edge of the lid and lift upward. If a seal fails, the lid will lift off the jar.
- Press the middle of the lid with your finger. A failed seal either pops down or

springs back up, and in doing so may make a popping sound.

- Tap the lid with the tip of your fingernail or the bottom of a spoon. A good seal makes a pleasant ringing sound; a failed seal makes a dull thud. (Note that food touching the bottom of the lid can also cause a thud.)
- With the top of the jar at eye level, check to see if the lid is flat or bulging upward. A good seal curves slightly downward.

A common cause of failed seals is food residue between the jar's rim and the lid.

Food residue may come from overfilling a jar (leaving too little headspace), or from not carefully wiping the jar's rim before applying the lid. It may also come from not screwing the band down tight enough, allowing liquid to leak out of the jar during processing. On the other hand, a ring that's screwed down too tight won't allow air to vent from the jar, which can also cause a failed seal and may cause the jar to break during processing. (See "How Tight Is Tight Enough?" on page 55.)

— Gail Damerow

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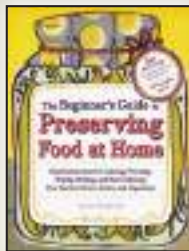
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The Beginner's Guide To Preserving Food At Home



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It's Time To Preserve Your Tomatoes

Every summer garden seems to have an abundance of the red, juicy fruit. Here's a guide to help you enjoy them all year long

BY
KAY WOLFE

TOMATOES ARE ONE OF THE easiest and most common plants grown in backyard gardens. Everyone loves fresh tomatoes picked from their own vine, but if you planted more than one plant, chances are you are drowning in them by now. The taste of homegrown vine ripened tomatoes is incomparable so don't waste them. Preserve them!

I grew up watching my mom can tomatoes, so canning comes naturally to me. If you didn't grow up in a household that preserved their own food, you may assume it is much harder than it really is. If you can raise it, you are no doubt capable of preserving it. All

you need to gain a rewarding skill and hobby is a little equipment and instruction.

WHY BOTHER?

Many people will tell you they do it to save money and I'm sure they do, but that's not why I do it. I do it because I enjoy it and because I want to provide the very best for my family. In just a few hours, I can stock my pantry with beautiful, healthy, organic tomatoes and tomato products to enjoy year round. Once you try it, you'll be hooked too! Home canned tomatoes have the advantage of being stored in glass as opposed to grocery store tomatoes in plastic-lined metal cans. Plus, I know my tomatoes have not been exposed to pesticides or herbicides.

BOILING-WATER CANNING

The most common method of canning tomatoes and probably the best way to learn is the hot



OPPOSITE PAGE, CLOCKWISE:
The tomatoes go through
the food strainer; what
the tomatoes look like
on the “Salsa” setting;
ladling hot spaghetti
sauce into the jars.

THIS PAGE: Jars in the
canner; the pressure
cooker doing its magic;
canned Creole sauce.

Photos by Kay Wolfe

water bath method. Basically, you place peeled tomatoes in a jar and then boil them under water until they are sterilized. Not everything can be preserved in this method because some bacteria require a higher temperature to kill. But, tomatoes are acidic and most bacteria can't survive in an acidic environment. That's why some recipes call for added lemon juice to raise the acidity so just to be sure, add 2 tablespoons of lemon juice per quart jar. I don't, but then I raise acidic tomatoes.

For this method, you'll need a few things. Of course you'll need jars, but make sure they are Ball or Mason jars, and not reused disposable jars like old pickle or mayonnaise jars. Many people look for jars at yard sales or thrift stores. As long as they are not cracked or chipped, go ahead and save some money.

You can find everything you need in the canning section of the hardware store or a well-stocked grocery store. The canner is simply a big metal pot with a wire rack in the bottom and a lid. Most hold seven one-quart jars and even more pint jars. It may also come with a

device used to lift the hot jars out of the water. You'll also need lids made to seal (these are not reusable but are sold separately) and reusable rings to screw down on the lids. A canning funnel comes in handy, too. It is made to fit the mouth of the jar so you don't drip tomato juice all over them as you fill the jars.

SELECT AND PREPARE THE TOMATOES

Any tomato can be canned but some have more flesh than others. Tomatoes are mostly water, so the roma paste tomatoes tend to be prettier and thicker once processed. If all you have are the big beefsteak varieties, go for it. (*Ed. note: You can always boil them down to decrease the amount of liquid in your sauce before canning.*) They will still turn out better than anything you can buy. What is more important than the variety though is the individual fruits you use. The final product is only as good as what goes in, so I like to pick them the day of canning and I only select

the fruits in their prime. I don't use green or overripe soft ones.

Before you begin, get your equipment ready. Make sure your jars are clean (I run mine through the dishwasher to sanitize) and you have new lids and clean rings. To peel the tomatoes, drop the washed tomato in boiling water for a few seconds until you see the skin start to curl. Then remove it and drop it in ice water. It should be easy at this point to just peel it off with your fingers. Cut away the stem and any blemish but never use a rotten tomato.

Now they are ready for the jar. You can drop them in whole or you can cut them into pieces; it's up to you. If they are big I will at least cut them in half. As you fill the jar, press down on them with your fingers so the juice replaces the air pockets between tomatoes. Add the lemon juice if you prefer. Use a knife to help remove air bubbles because the only place you want air is in the top one inch of the jar. This is called

Homegrown tomatoes are just too good to only enjoy during the summer. With a little bit of equipment and time, you can preserve them as a variety of wholesome products to be enjoyed year round.

“head space” and it allows the tomatoes to expand during heating. Without it, the tomatoes will boil over in the jar and ruin your seal. Once the jar is filled within one inch of the top and all air bubbles have been removed, wipe the top of the jar well with a paper towel and place a clean, new lid followed by a ring. Twist it down firmly but not tight since the air needs to escape during processing. Continue until you are out of tomatoes or you have enough jars to fill the canner.

Place the jars in the canner and fill with water until the jars are at least one inch below the surface (make it two to be safe). Turn the heat to high and put on the lid. It may take a while to reach boiling so now would be a good time to start another project in the kitchen as long as you can check it every 5 to 10 minutes. Once it reaches a rapid boil, set a timer for 40 minutes for quart jars and keep it boiling hard. When the time is up, turn off the heat and give it a few minutes to cool before removing the jars with the utensil made for removing hot

jars. I like to set mine on a dry towel on the counter and then don't touch them until they are completely cool. As they begin to cool, you will hear a pop. That means the lid just sealed and is your assurance the tomatoes are safe. Always check the seal before storing and again before using. If the seal is not still vacuum packed, don't eat it.

SAUCES

Now that you see how easy it is to can tomatoes, let's move on to the next level: sauces. There are so many salsas and sauces that use tomatoes combined with spices along with onions and peppers. As long as they are acidic, they too can be preserved using the water bath method. Serve them to your guests over cream cheese or with chips. These make great gifts and are so pretty to display in your kitchen. Once you start playing around with recipes you can make your own to suit your family's taste. Some like it hot so go crazy with the type of peppers you use, but I personally like to “sissy” them down for those of us who prefer mild.

FOOD STRAINER

Here in South Texas, there are few varieties of tomatoes that can stand the heat and those are small, so peeling by hand is too time consuming. They have a great taste though and do well in canning and cooking, so I bought a strainer to cut my preparation time from hours to minutes. I will never again be without one of these little gadgets. It comes with various size strainers to alter the texture of the tomatoes, but it can also be used with apples and many other fruits and vegetables. I prefer to use the “salsa”-sized strainer for the majority of my recipes.

One thing to keep in mind is, once the air hits a tomato, an enzyme begins to cause the water to separate from the pulp, so you want to heat the strained tomatoes as soon as possible to deactivate the

enzyme. I strain a batch at a time and pour it directly in a large pot and heat it up. All this takes place rather quickly, so I've not had a problem with them separating like I would if I peeled each individually.

PRESSURE CANNING

If you have enjoyed canning so far, it is time to kick it up a notch with a pressure cooker. Pressure cookers can safely process all fruits and vegetables along with meats and an endless variety of combined ingredients, limited only by your imagination. You'll want to buy a large one that holds at least seven quart jars. I just bought a new one for \$125. If that sounds like a lot, consider it an investment or better yet, put it on your wish list for your family's gift giving.

Many people are intimidated by pressure cookers due to the high heat under pressure, but the modern models are very safe. Unless you are filling it with explosives, you are not going to blow up a pressure cooker! The lid locks in place by design. When you turn the lid to close it, one metal plate slides under another, making it impossible for the lid to blow off. If you were to forget and leave it on the heat, the rubber safety valve would blow out letting the heat and steam escape long before the cooker would explode. The only way to hurt yourself is to get burned by the steam if you open the lid before it cools down, but now that you know, you won't do that.

Homegrown tomatoes are just too good to only enjoy during the summer. With a little bit of equipment and time, you can preserve them as a variety of wholesome products to be enjoyed year round. Now that you have mastered canning and have the equipment, try your hand at ketchup, barbeque sauce, tomato paste, juice, etc. Heck, don't stop at tomatoes. Go ahead and preserve all the great foods our bountiful homesteads provide. You'll be so glad you did! ☺

Spaghetti Sauce Recipe

MAKES 7 QUARTS

Here's a great recipe for spaghetti sauce requiring a pressure cooker due to the ingredients. Before you place it in the jars, take a little bite and adjust the spices to your liking, but this is my final recipe based on my preference. I have preserved enough to eat it at least every other week. It's great for when I come in hungry and in a hurry. I simply brown some ground beef, drain, add a jar of sauce and simmer a few minutes. I serve it over pasta or if I have more time I use it to make eggplant parmesan or lasagna. I don't have to worry about what's in it since I not only made it but I grew most of the ingredients. Your kids will love this recipe and you will love that it is safe and healthy.

14 pounds of tomatoes run through strainer (weigh them before straining)
1 cup of olive oil
½ garlic bulb chopped very fine
4 onions chopped fine
2 bell peppers chopped fine (remove seeds and membrane from inside)
2 jalapeño peppers chopped fine (remove seeds and membrane from inside)
¼ cup packed brown sugar
¼ cup sea salt
2 tablespoons of raw apple cider vinegar
½ cup of Italian seasoning (marjoram, basil, rosemary, thyme, oregano, savory and sage).
Buy mixed spice or grow your own.

You'll need a pot that holds about 2 gallons for this. If you have nothing else, use your pressure canner as the pot and then clean it before you need it as a canner.

Sauté the peppers, onions, and garlic in the oil until tender. Then stir in the

tomatoes, vinegar, sugar and salt and bring to a medium boil. Continue to stir occasionally for about an hour holding at a low to medium boil to reduce the liquid. Add your Italian spices the last 15 minutes of cooking. Once it is as thick as you want, it is ready to can.

Have seven clean quart jars ready with rings and new lids. Ladle the sauce in the jars, leaving 1-inch headspace. Wipe the top of the jars clean with a paper towel and top with the lid and ring. Tighten it, but don't crank it down.

To get your canner ready, fill the bottom with 3 quarts of water (check your instructions with your cooker in case it is a different size). Add the round rack that fits inside to hold the jars off the floor of the cooker. Since your sauce is going to be hot, go ahead and heat the water in the cooker to just below boiling. Place the filled closed jars inside, check the seal on the cooker lid (they can stretch out of shape over time) and close it up. Turn the heat on high and watch for the steam to start coming out of the vent pipe. Once it does, time it for 10 minutes (I use the timer on the microwave). This lets the air out which is important.

After the 10 minutes, place the weight/pressure regulator over the vent pipe. Now the pressure will start building and you should be able to hear the jars boiling inside. Watch the dial as the pressure starts to build. You want to let it rise to 11 pounds of pressure and then hold it there for 30 minutes by adjusting the heat. It is all right for it to go over some but don't let it go under. You'll be tempted to go do something else while it is boiling but don't. You need to watch the pressure closely.

Once your 30 minutes are up, turn off the heat and leave the cooker alone until it is completely cool. When it is, open it and remove your canned spaghetti sauce. Write the date and contents on the lid and store in the pantry. You're done!

Creole Sauce

Here's a fun and tasty recipe to get you started. I use nine 8-ounce jars for this. I like to get the pretty cut-glass jars and decorate the lids before giving as gifts. Once they are completely cool, simply remove the rings and place lovely squares of festive fabric over the lid and replace the ring to dress it up. If you are really crafty, you can cross stitch cute designs for each lid or add a tiny ribbon and they will never eat them because they are just too decorative. From *Ball—Complete Book of Home Preserving*

Tomatoes, coarsely chopped, cored and peeled (8 cups if strained)
Green bell pepper, seeded and chopped
1 cup chopped green onions
4 tablespoon red wine vinegar
3 cloves garlic finely chopped
2 tablespoon Worcestershire sauce
1 tablespoon dried oregano
2 teaspoon hot pepper sauce
1 teaspoon freshly ground black pepper
½ teaspoon salt
½ teaspoon cayenne pepper

Combine the ingredients in a large saucepan and bring to a boil over high heat stirring frequently. Reduce the heat and boil gently uncovered until thickened, about 40 minutes.

In the meantime, get your jars and canning equipment ready.

Since the sauce will be hot, go ahead and heat your canning water so the jars will not break when you place them in (just under boiling). Ladle the still hot sauce in the jars leaving ½-inch head space. Wipe the tops, and then add the lids and firmly screw on the rings and place them in the warm canner. Put the lid on the canner and bring to a rapid boil. Process them for 20 minutes and then remove and cool.





Foraging for Mushrooms

In search for the chicken-of-the-woods...

BY
CHRISTOPHER
NYERGES
CALIFORNIA

KNOWLEDGE OF EDIBLE wild mushrooms can really enhance your outdoor experience and give you a little bit of self-reliance. Yet, there is this mystique about mushroom hunting. A lot of folks are very wary about venturing into the field of mycology. And this is understandable, considering the fact that even “experts” occasionally die from eating the wrong mushroom. For example, in March of 2009, life-long mushroom hunter Angelo Crippa, collected some mushrooms in the hills above Santa Barbara, California. He sautéed them, and ate them, and told his wife they were delicious. Unfortunately, rather than an edible species, he collected a close-lookalike, *Amanita ocreata*,

Typically, the chicken-of-the-woods grows on tree stumps and burned trees. It can grow high on the stump, or right at ground level.

which is deadly. Even with hospital treatment, he died in seven days.

I often have told my students that they should avoid eating any wild mushrooms if they do not devote considerable time to studying mushrooms, and learning how to positively identify different genera and species. One of the biggest hurdles to studying mushrooms is that they appear, as if by magic, and then a few days later, most have decayed back to nothing. By contrast, most plants are available for inspection all throughout their growing season. You can leisurely study the leaf and floral structures, clip some for your herbarium, and casually take (or send) samples to a botanist to confirm your identification. Generally, you don’t have the luxury of time with mushrooms. Furthermore, there seem to be far fewer mushroom experts than plant experts, so even if you have a perfect specimen, there may not be anyone to take it to for identification.

Despite the obstacles, thousands of people collect wild mushrooms throughout the United States on a regular basis. Many—such as myself—began the pursuit of mycology by joining a local mushroom group, which conducts regular field trips.

Nearly everyone I’ve met who collects wild mushrooms for food collects only those few common mushrooms, which are easy to recognize. These very common, easy-to-recognize edible mushrooms include field mushrooms (*Agaricus* spp.), inky caps (*Coprinus* spp.), fairy rings (*Marasmius oreades*), chanterelles, *Boletus edulis*, chicken-of-the-woods, and a few others.

Today we’ll take a look at the chicken-of-the-woods, also known as the sulfur fungus (*Laetiporus sulphureus*, formerly known as *Polyporus sulphureus*).



LEFT: Chicken-of-the-woods up close.

BELOW: The ink cap mushroom is one of the more common species.



The sulfur fungus is a polypore, or shelf fungus. Instead of the more-familiar cap on a stem, this one grows in horizontal layers. It is bright yellow as the fungus begins its growth, and then, as multiple layers appear, you will also see orange and red. As it grows older, it fades to a very pale yellow or nearly white color.

Typically, the chicken-of-the-woods grows on tree stumps and burned trees. It can grow high on the stump, or right at ground level. Though it can appear on many types of trees, in my area (Southern California), it is most common on eucalyptus and carob trees, both imported from Australia and the Middle East respectively.

This fungus is very easy to positively identify. If you are uncertain, you can call around to the botany departments at local colleges, or nurseries, or check to see if there are mycology groups in your area. Most full-color wild mushroom books include this mushroom with color photos. Fortunately, you can collect a

sample of the chicken-of-the-woods and put it in your refrigerator or freezer until you can get it to someone for identification. This mushroom will keep well.

In fact, when I locate some of the fresh chicken-of-the-woods, I cut off as much of the bright yellow tender outer sections as I think I can store. I only cut back a few inches; if I have to work my knife, then I am into the tougher sections of the fungus, and those are not as good eating. Typically, I will simply wrap the chunks of this fungus and

freeze them until I am ready to use.

Once I am going to prepare some for eating, the process is the same whether I am using frozen or fresh mushrooms.

I put the chicken-of-the-woods into a pan and cover it with water, and bring it to a hard boil for at least five minutes. I pour off this water, and repeat the hard-boiling. Yes, I am aware that some people do not seem to need to do this. However, if I do not do this boiling, I am likely to vomit when I eat the mushrooms, however prepared. I find vomiting one of life's most unpleasant experiences, and I try to avoid it whenever possible. Thus, I always boil my chicken-of-the-woods mushrooms twice.

If you are experienced with this mushroom and you know you can eat it without all this boiling, that's fine. Just be sure to thoroughly cook it for your neophyte friends when you have them over for dinner.

Once boiled, I rinse the pieces, and cut them into small nuggets on a breadboard. I roll them in egg (whole eggs, whipped) and then in flour. In the old days, we would then deep-fry the breaded pieces. But since we now know all the bad things that deep-frying does to our arteries, we gently sauté the breaded chicken-of-the-woods in butter or olive oil, maybe with a little garlic, in a stainless steel or cast iron skillet at very low heat. When browned, we place them on a napkin and then serve them right away.

We have made these little McNuggets, packed them, and taken them on field trips for a delicious lunch. ☺

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 90401, or www.SchoolofSelf-Reliance.com.

Stay Cool as a Cucumber

Overheating is one of the real dangers of working outdoors. Here's how to avoid it



BY ALEXIS
GRIFFEE

WITH SUMMER FAST APPROACHING, we look forward to longer days, barbecues and more time to enjoy our family and farms. Despite our appreciation for summer, one thing that we often do not think about is how to safely homestead when the weather is dangerously hot. According to the Center for Disease Control, 3,500 people died from heat-related complications between 1999 and 2003. A misconception is that it is just the young and elderly who are at risk of problems with the heat. If you are going to be outside working frequently, it is vital to know the dangers of the heat, the warning signs of trouble but also how to protect yourself and those around you.

Certain conditions do make you more susceptible to heat-related illness. It is important to be aware of these predispositions so that you can be on the lookout for

the early warning signs of trouble. Needing time to get acclimated to the heat is not just an excuse to take it easier when working. It takes approximately 10 to 14 days for your body to acclimatize to work outside in hot conditions. During the acclimation period, you are more susceptible to heat. During this acclimation period, it is suggested to keep up on your recommended water intake. Starting work properly hydrated will aid in the acclimation process and is sound advice anytime that you work outside. Other issues that will affect the adjustment period to strenuous outdoor work is your current fitness level, if you are dealing with a minor illness (cold, low grade fever, sore throat), or if you are taking certain types of medicines known to cause photosensitivity.

DON'T BE THIRSTY

A common problem during the summer is dehydration. Simply, dehydration is when the loss of water from your body outweighs the amount that you are taking in. Sweating, while necessary and a natural part of our body's heat defenses, takes its toll of our hydration levels in our body. While mild dehydration can generally be remedied by proper hydration, it can also be a very serious problem. Signs of dehydration include dark colored urine, weakness, headaches, muscle cramps, dizziness, passing out and confusion. If caught early enough, simply cease your outside activities, go to a cool location and begin hydrating slowly. However, in the event of severe dehydration, you may need to go to a medical provider and be administered intravenous fluids.

Another more severe heat related threat is heat stroke. Heat stroke is actually a type of hyperthermia. Heat stroke is a medical emergency and needs to be treated as such. Symptoms include, confusion, agitation, disorientation and lack

It might sound like easy advice, but staying cool is important. If you see a friend or loved one overheating, check on them. If they don't look well, force them to find a cool place to rest and to slowly ingest fluids, or call for medical help.

of sweating. In the event that you or someone you are with begins to suffer the symptoms of heat stroke, then need to be moved to a cool or shady location as quickly as possible and emergency services notified, as this condition can be fatal. If conscious, the victim should be given cool water, and have tepid or cool (*not* cold) water applied to their skin particularly in areas of sweating and groin.

While drinking water is good, and a necessary requirement for working in certain temperatures, it should be done in reasonable amounts on a steady basis. Hourly fluid intake should not exceed 1 ½ quarts. While dehydration results in not drinking enough fluid, you can also drink too much. Often times, when dehydration begins, it is tempting to drink as much as you can in an attempt to quickly regain all of the fluid lost through sweat. However, water intoxication is a very real possibility in these situations. Steady, continual intake of fluids not exceeding the recommended hourly amount will prevent both dehydration and water intoxication.

Just as important as the amount of fluids you drink is the type of fluids that you drink. When working in warm climates, or anytime you are trying to remain hydrated, avoid alcohol, caffeine and sugar-filled drinks. If you are looking to spice up your drink a bit this summer, add lemon to water, certain sports drinks or flavored water additives.

There are many products that can help keep your water cool and accessible while you are working. There are wearable hydration packs, canteens and even personal drink coolers designed to keep beverages cool for hours on end despite being in extreme temperatures. Ensuring that you have water close by that is kept at a cooler temperature will encourage your water consumption.

Even though you may not feel like eating during the summer, it is recommended that you do not skip meals or snacks, especially

if you have been sweating a lot. While you do not have to eat heavy meals, eating will replenish your body with salts, calories and vitamins that were lost during your time of work. Some beneficial, yet light summer foods would be watermelon, bananas, tomato and cucumber salad, grapes, chicken wrap sandwiches, tuna, chicken or egg salads, and many more.

WEAR SMART CLOTHES

While we cannot control the weather, there are ways that we can stay safe and beat the heat. As much as we may dislike sweating, it is our body's natural method of cooling itself. Although putting on antiperspirant has become a part of our typical morning routine, it is best to skip it on days where hard work is planned outside and opt for deodorant instead. Antiperspirants work by clogging the sweat duct and not allowing, or at least drastically reducing, your ability to sweat. While this may be great in a social setting, it is inhibiting your body's natural cooling response. Unlike antiperspirants, deodorants are not designed to prevent the natural sweating process. Deodorant works by killing the bacteria that feed on sweat and cause odors. Using deodorant in place of antiperspirant will help keep you smelling better without affecting your ability to cool yourself while you work.

When choosing clothing for summer work, there are a few aspects to consider. In order to successfully beat the heat and stay protected, you need lightweight and breathable attire. Many sports companies make clothing from synthetic materials that will wick

sweat away yet also be light weight and breathable. Another place to look for summer-approved clothing is in the sporting goods store. Special lines of clothing have been designed for fisherman that will wick moisture away, provide full protection and yet still provide comfort and ease of maneuvering.

Some clothes, like cotton, simply absorb sweat and will hold it against your skin. Absorbent clothing will simply soak up the sweat and trap the heat against your body. There are new fabrics that are designed to wick the sweat from your skin to the outside of your clothing. By wicking the sweat away from your skin, it allows the sweat to evaporate instead of trap heat.

It is always recommended to avoid dark clothing when working in hot climates. Dark clothing absorbs heat more than light-colored clothing. Also, while it is tempting to shed or reduce clothing, it is vital to stay covered. Clothing like tank tops may seem like they would be a cooler option but they leave you exposed to the sun's direct rays. The less direct sun you are exposed to, the cooler you will feel. Additionally, staying covered will also help you to avoid painful sunburns.

Cowboy hats go far beyond style when it comes to surviving the elements. The cowboy hat as we know it today was invented in 1865 by J.B. Stetson. This design was made with cowboys in mind, as they had to endure some of the roughest work and harshest weather imaginable. The wide brim of the hat helps to keep the sun's direct rays off of you. While the iconic cowboy hat is usually made from

Starting work properly hydrated will aid in the acclimation process and is sound advice anytime that you work outside.

beaver pelt, there is a more modern and heat savvy hat used by many farmers in hot climates. Straw cowboy hats are a great aid when it comes to beating the heat. The straw allows the hat to be able to breath more and keep your head cooler while still providing the sun protection with their wide brim. Generally speaking, straw hats of this sort are an affordable, durable and readily available option for your summer survival gear.

Another great tool in your warm-weather clothing arsenal is the humble bandana. Bandanas are versatile, extremely useful and a must for all farmers. Bandanas can be tied to cover your head or to cover your neck to prevent sunburn. In times of extreme heat, bandanas can also be used to cool you off. A bandana that has been wet by cool water is always a welcome relief on a relentless summer day.

TAKE BREAKS

The well-known and popular Spanish word siesta is derived from the Latin hora sexta, which means "sixth hour." This "sixth hour" translates into midday when the day reaches its hottest point and the sun reaches its full intensity. While often joked about or misunderstood, for untold generations numerous cultures have partaken in siestas for good reasons. Sometimes as farmers and homesteaders you simply have no choice but to work through the day while there is light available. However, you do not have to take a nap to participate in the wisdom of resting during the harshest and hottest part of the day. With proper planning, breaks, lunches or even bookwork can be completed during this time. Altering your schedule around the time can still be productive and save you from the extra risk involved with pushing yourself too far in dangerous climate.



No stranger to hard work or extreme weather, the United States military has developed a guideline for working in temperature extremes. It takes into consideration the outside temperature, your work pace and provides you with a suggested work/rest time. For example, for a person partaking in moderate work in 82 to 84 degrees, the suggested pace is to work for 50 minutes and

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rest for 10. A more extreme example would be someone involved in moderate work at a temperature range of 90 degrees and up. In this "level 5" at a moderate work pace, it is suggested you work 20 minutes and rest for 40 minutes and consume one quart of water an hour.

The military breaks down activity levels into three distinct categories. These categories are easy work, moderate work and hard work. Although the examples that the military provides for these categories does not directly relate to farming activities, you can determine approximately where your work level would coincide. For example, easy work may translate to feeding livestock grain or collecting eggs. Slightly elevated, moderate work would translate to scrubbing water troughs, or even planting or harvesting on a tractor without climate control. On the most extreme end of the spectrum, hard work would include tasks like putting up fence, moving hay bales in from the field, and cleaning barns and stalls by hand. While these examples may not all be things that take place on your personal homestead, they will give you a general idea of your activity level and the care that you need to take while completing your tasks.

As farmers, the work must go on, even in the dog days of summer as others sit comfortably in their air-conditioned homes. Animals, crops and people alike all depend on the farmer and rancher for their food and all that they provide. While this responsibility does place us all under pressure to push ourselves for the good of others, it is also the exact reason why farmers really must make sure that they do all they can to take care of themselves, too. Through proper planning and tools your summer can be enjoyable and free of dangers. By making small modifications to your wardrobe and routine, while ensuring hydration and planning your work around the forecast, you can make summer productive and safe. ☺



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TINY HOME, BIG IDEA, HUGE AMBITION

Entrepreneurs are turning a personal passion into a thriving industry

BY JERRI L. COOK

Some folks embrace the idea of sustainability early in their childhood. Others come to embrace sustainability only after the rug is yanked out from under them, leaving them face down on the hard floor of reality. For these folks, sustainability, the practice of mindful resource management, is embraced as they struggle to get back on their feet. For these people, when they discover sustainability, they discover a purpose.

Before the economic collapse of 2008, Randy Jones was riding high on a wave of economic bliss. A successful builder for more than 25 years, he was also the owner of a resort on 450 scenic acres in the Great Smoky Mountains of Tennessee. With 80 upscale cabins, he was benefiting from the burgeoning economy. The well-heeled would bring their families for vacation and their colleagues for working weekends. But financial waves, like ocean waves, eventually collapse.

Randy rode the wave all the way to the rocky end. By 2009, he had nothing left but an old pickup truck. Everything else had been lost to the bank. For the better part of three years, he wandered from job to job, barely eking out a living. Then, in 2012 he was driving around town looking for odd jobs, when he found one that would change the trajectory of his life.

He drove by an unkempt salvage yard, where he noticed a dump truck and a forklift that he thought he could use. He didn't have any money to buy the equipment, but he could work. He traded his labor for the pair, as well as any usable lumber he found lying around. Working alone, it took him days, but when he was finished, he had a working dump truck and forklift, and loads of lumber that he wasn't quite sure what to do with. Initially, the plan was to sell it all and use the case to fund a building project, but that's when Randy Jones found out about the tiny house movement, a promising trend promoting sustainable housing and environmental practices. Neither he nor the tiny house movement would ever be the same.

In total, at an average of 101 BTUs per year per square foot, the total energy usage for larger homes is significantly higher than "tiny homes." There is some good news, though. While the average home today is 28 percent larger today than in 1973, it uses 31 percent less energy per square foot, according to the Pew Research Center.



ALL AMERICAN TINY HOUSES

During a period spanning the late 18th and early 20th centuries, the average size of a home in the United States was 450 square feet. In the decades following World War II, the average size of a home in the United States grew to a whopping 2,300 square feet. As the square footage grew, so did the cost of buying and maintaining these enormous properties, aptly dubbed McMansions due to their similarities in floor plans and appearance. Up until 2008, the cost of these large homes was covered by a booming economy that everyone seemed to think would continue indefinitely. The American homeowner was in the money. But when the wave collapsed, it left countless families mired in debt and on the brink of homelessness, struggling to find a place to rent. In the wake of the economic collapse, many former homeowners had given up on ever owning a home again in their lifetime, while those who had never owned a home became resigned to the fact that they never would.

But in late 2012, word started to get around on social media about a man named Jay Schafer in California who had designed and lived in a 96 square foot house on wheels.



Developers in Illinois resized a lot to include one small enough for a tiny home like this, roughly 400 square feet, roughly the average size of a house in America before World War II.

It wasn't long before Schafer began building tiny houses for others. Built on a standard trailer bed, the houses were inexpensive, self-contained and moveable. Unlike the tiny homes featured on Tiny House Nation on FYI every week that often exceeded \$350,000, the moveable tiny homes were affordable, even for those Californians who were kept out of the real estate market because they couldn't meet the income requirements.

Even though they were reasonably priced by California standards, starting at \$57,000 for a 117 sq. ft. home, the cost remained out-of-reach for those who live far outside of the Golden State. Lower income people outside of California might have been permanently priced out of the tiny house movement if Randy Jones hadn't happened by that messy old salvage yard in 2012.

RANDY GOES SMALL

Randy Jones learned about the tiny house movement that was gaining in popularity on the West Coast shortly after he made the trade with the salvage yard owner for the equipment and lumber. He sold part of the lumber and built a prototype tiny home of his own for around \$4,000. He made a reasonable profit when he sold it, and before he knew it, he had made three more. Randy began to see tiny houses as more than just a way to make a living. He soon saw it as a way to make a sustainable living while helping others and the planet.

In 2014 Randy officially went into business again.

"I hired a young guy with a family to help me," Jones said. "We don't have any fancy facilities. It's just a couple of guys out in a field in Tennessee, but I'm able to pay him a wage that he can support his family on."

His new venture, Incredible Tiny Homes (www.incredibletinyhomes.com), is the only one of its kind in the United States. Like the first tiny home he made out of the lumber that he bartered for at the salvage yard, all of Randy's homes are made from re-purposed items, ensuring that no two are the same and keeping the cost of construction under control. Using salvaged barn doors, discarded building materials, and anything else that will enhance his houses, Randy offers an affordable, self-contained, off-grid tiny house starting at \$25,000.

These houses, which are only 110 square feet, are available to rent in California.



"We don't have any fancy facilities. It's just a couple of guys out in a field in Tennessee, but I'm able to pay him a wage that he can support his family on."

— RANDY JONES

Customers can come to Morristown, Tennessee, to pick up their home, or Randy will arrange for delivery at an additional charge.

Of course, if someone wants marble countertops or custom oak cabinets, the price can go higher. But as Randy points out, the driving forces behind the tiny house movement are economic responsibility and effective personal resource management.

"The whole point is to downsize on purpose, not like what happened back in 2008 when it was done for everyone. It's about creating communities and living sustainably within them." If you're looking for luxury over comfortable practicality, off-grid tiny houses are probably not for you.

Randy's off-grid homes are being used across the country by people who want the security of owning their own home but who refuse to be saddled with excessive debt. "I built one for one gal—a single mom with two kids—and they're living



Turning old buildings into small homes is just one way to conserve space, and provide additional business opportunities on your property for tourists through online rental services.

off-grid on a tiny parcel in Texas,” says Randy. “I’ve got houses in Chicago, right in the city limits, and in Durham, North Carolina, too.”

Of course, local zoning laws could operate to keep someone from living in a tiny house, even on their own land. But as Randy points out, “Most municipalities don’t know how to classify tiny houses. They’re not RVs. They’re built like homes. They are homes. Full-time homes. Not recreational vehicles.”

He views this lack of classification as an opportunity to educate state and local officials on the value tiny homes bring to a community.

“We had one community that had an ordinance prohibiting campers and RVs from parking on residential lots,” he said. “But when the board saw our home, they decided to allow it because it was aesthetically pleasing and added to the look and feel of the community.”

TINY HOME, BIG DECISION

Before making the decision to live more sustainably by living small, be sure to consider all the potential issues, even the ones that might weigh against the decision. A good resource for getting started is www.tinyhousetalk.com. Maintained by tiny house aficionado Alex Pino, the site has hundreds of articles and resources on tiny house living.

People who have made the switch to tiny homes, regardless of what walk of life they come from, universally offer the same advice—ease into it. Those who have made the successful transition to smaller foot-age did so over a period of months by getting rid of things they didn’t need and adjusting their lifestyle to accommodate fewer possessions.

Another thing to consider is the limited storage space. Those who grow and preserve their own food will need to make separate storage provisions.

Weather can also be an issue when choosing a site for your tiny home. Because of their size, tiny homes on wheels are susceptible to strong winds. Placing one on top of a wind-swept vista is probably not a good idea.

GETTING YOURS

Not everyone can pay for an off-grid tiny house with cash, but those who are fiscally responsible will find that several sources of financing exist to assist them. The tiny house trend has caught the attention of major lenders and their subsidiaries. LightStream, a division of SunTrust Bank, will loan people with good credit ratings up to \$100,000 for a small home.

Non-traditional sources of financing also exist to help people buy the tiny home of their dreams. Tiny House Talk offers a free newsletter that allows investors to connect with borrowers. Those seeking financing can apply for up to \$25,000 in funds to purchase or build their tiny home. Another source of financing is Tiny House Lending at www.tinyhousetalking.com. This site also helps buyers find financing up to \$100,000.

Even though tiny homes aren’t for everyone, they offer a path to a sustainable lifestyle by promoting meaningful resource management. Shrugged off as just another California trend a few years ago, the small house movement promises to open paths to self-sufficiency for millions of people who would otherwise be trapped on the jagged rocks of financial ruin, held there by wave after wave of poor fiscal policies that they cannot control. ©



The Evolution of a Dairy

Alan Yegerlehner, proprietor of Direct Market Dairy Products in Indiana, says he saved his business by converting to grass-fed dairy

BY HEATHER
SMITH THOMAS

PHOTOS COURTESY
OF ALAN
YEGERLEHNER

THE SMALL FAMILY FARM IN INDIANA run by Alan Yegerlehner produces grass-fed milk products, marketed from their pasture dairy, and has for generations. For Yegerlehner, who grew up in Clay City, a small agricultural community in Indiana, his farm encompasses the original 104 acres where he grew up, and where his great-great grandfather emigrated from Switzerland in 1860.

“Each generation has managed the farm in one way or another. My father came back to the farm after serving in World War II and went to Purdue,” says Alan. “After high school, I went to Purdue University for four years. I dragged my feet a bit, but my parents wanted me to go, so I did.”

After World War II, Alan witnessed the rapid changes in farming.

“I was at Purdue during the Earl Butz era in the 1970s when things were rapidly changing in agriculture,” he explained.

Modern technology and new practices aimed at increasing production were evolving during those years.

“This is what the colleges were preaching, so I accepted it and got swept up in the idea that farmers needed to expand, increase

production, leverage money—borrow all you can and grow big. Down deep inside me I knew some of these things weren't right, but I went into partnership with my father and we borrowed more money to expand. We accumulated quite a bit of debt, and our debt to asset ratio wasn't the best," Alan said.

He and his wife Mary were married in 1974. Alan graduated from Purdue in 1976, and they lived on the farm.

"I've never had any other job. I grew up farming and kept at it a little while I was at school. When we came back full-time, Mary and I purchased my grandfather's 80-acre farm, which is next to the original 104 acres and this is where we've been ever since," he says.

"During those early years I was very interested in organic and direct marketing, but at that time no one was really doing that here in Indiana. If you mentioned these things you were labeled as a weird person!"

AN EVOLUTIONARY IDEA

One day, he received a publication from *New Farm* magazine.

"I was amazed by the fact some people were actually doing this [organic farming] and making a living at it. The next few years we tried to make some changes. I went to a couple of seminars that Rodale put on. I found another

farmer nearby who was interested in the same thing. We compared notes and supported each other emotionally. We knew we weren't completely alone," Alan says.

"We started out with some changes in our cropping because that was where my biggest interest was. Our farm had crops and a dairy. My dad and mom started the dairy in 1950. We've had milk cows on the farm since that time. I was interested in both the dairy and crops, but maybe a little more interested in crops."

As they made changes, they started to do some of the rotations a little more intensively, with more wheat, and adding more clover and legumes in the pasture ground they rented.

"We borrowed more money and put up some blue Harvestore silos. Our barn burned in 1973, so

we put up a new block building and herringbone milking parlor, so we had a lot of debt," he said.

"I started making changes in the cropping and tried rich tillage, trying to build soils using green manure and limited tillage. We were able to quit using herbicides, doing some experiments with rotary hoeing," Alan said.

"We were having a good time with that, and doing some things that didn't make us so dependent on the chemicals and commercial fertilizer. We went through the 1980s and early 1990s doing that, and we were actually growing nearly all our own feed for the dairy, using haylage, corn silage and corn. We felt we were doing a good job managing what we had, but in the early 1990s I realized that even though we were making all this



OPPOSITE: The Yegerlehner pasture.

ABOVE RIGHT: Alan Yegerlehner and his daughter, Kate, pose in a field after a cattle drive.

ABOVE: A Yegerlehner calf.

"Over the past 15 years we've done a lot of different things in terms of marketing, but our store and the farmers markets have been the cornerstone that helped us build."

— ALAN YEGERLEHNER



LEFT:
The cheese
vat on the
Yegerlehner
farm.

BELOW:
The
finished,
organic
cheese.



progress with the crop farming we were not doing very much with the marketing side. We weren't getting anything extra for our product because we weren't marketing our milk as organic," he said.

"We were feeding good feed to our cows but we still had all those silos and chopping equipment that I would have to replace—and have to borrow more money—so all of a sudden I realized this was crazy. In 1991, I was reading about grazing dairies, so we started grazing our cows rather than feeding them harvested forage. Then I read about seasonal dairying and the light bulb really went on," explained Alan.

Many of their cows were calving in the fall, so he went to a fall seasonal calving. "This was before I really understood the seasonal aspects in relation to the grazing and the cows' nutritional needs. Our fall calving was kind of nice because the cows were dry in the summer when it was hot, but it didn't match up very well with the nutritional level of the grass for the cow and calves," he says.

So the next year they delayed breeding six months, and brought the cows back into a spring calving window.

"Ever since 1993 or 1994, we've been spring calving our seasonal herd.

But during the late 1990s we were still selling our milk and crops on the commercial market." He realized that they were going the right direction with their management, but were not getting paid for their extra efforts. The debts were still there and they weren't making progress on reducing those.

"It was like our ship was slowly sinking. So in 1998 we made a tough decision. Cropping had been a part of our farm for a long time, but I decided to quit the commercial grain farming. We still had debt on some of our equipment and some of it was nearly worn out. Rather than borrow more money to replace it, we sold the equipment, and didn't make enough to cover the debt on it. We gave up some of the land we rented, and just concentrated on the farm that Mom and Dad owned and the one I owned," he says.

"We sold the silos (essentially gave them away) and put the whole farm into perennial grasses for a pasture dairy. For a couple years we were

just milking the cows but were still selling the milk on a commercial market. We realized we needed to make some changes on the marketing side. In the fall of 1999 Mary and I started looking around to pick up some ideas. We decided to process our milk on the farm," he said.

They bought some used equipment from a fellow who had made cheese in a winery. "I had never made cheese in my life, but we remodeled our barn and put in the equipment. The man who sold it to us came up here and helped us make the transition and gave us some quick lessons. We became cheesemakers."

That next year was the start of a big change. "We went to seasonal grass dairying and direct marketing, producing everything on our farm. We didn't really know what we were doing, but it was a leap of faith," he said.

"Back in 1992, we had also had some experience with holistic management.

A man I worked with here had some experience in sustainable agriculture. Mary and I took a couple of small training courses that helped us a lot—to steer us along the path with some key ingredients. It was still been a tough battle with the debt load; the debt was like a rock around our neck that kept us from going anywhere. Then a couple years ago we finally got things paid off."

As part of holistic management, they looked at some of the changes they were making in 2000.

"We wanted to make some changes that would allow our children to farm with us later if they wished. We have three children, Kate, Luke and Jess. If they wanted to come back to the farm, we wanted to have a way to work them in, too. This model of holistic management was helpful and really fit for us; we used those principles as we made the changes. We structured things so that they could farm with us if they wanted, and if they didn't, that would be fine, too," Alan said.

“Our daughter, Kate, the oldest, loved cows all her life. That’s all she really wanted to do—take care of cows. She went to Purdue during 1998 to 2002, and after she graduated I let her take over a lot of the management of the cows and grazing. I helped wherever she wanted me to, but I gave her more of the responsibility, and the leeway to make mistakes. That’s what my dad did with me, and this is how we learn the most.

“My father was steeped in the commercial end of it with use of fertilizers, etc., but he was still very stewardship-minded in terms of taking care of the land with good soil and water conservation. He allowed me, when I came back, to take over a lot of things, and I’m sure he cringed many times at some of the changes I was making. He allowed me to make the mistakes and learn as I went,” Alan said.

Kate has had the same freedom to try things and make a few mistakes.

“She has tackled it and we all continue to make mistakes and we learn from them,” he said. It’s nice to see a family team effort on the farm.

“As we made the transition to on-farm processing, we still sold a little milk to the co-op for a few years. At that time there were not very many people making this kind of change. Our milk levels fluctuated a lot in what we were shipping to them and they finally told us they wanted all our milk or none of it. So we quit sending any milk to the co-op and everything we produced we have sold ourselves,” he says.

MARKETING UP

“We started going to farmers markets, right after we began processing our own milk, and also had a little store at the farm. We’d gotten some ideas earlier, when Mary and I and our three children went to Switzerland, the year that my father passed away. We visited with our distant cousins and re-connected with some of our roots. We saw how everything was sold

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locally. We enjoyed seeing the small farms our cousins had, and how each village had their own cheese-making businesses, dairies and meat markets. Everything was produced locally. This was something I was really interested in but it was fascinating to see this in action," Alan explained.

"We came back all fired up to market our own product. This was a dream I'd always had, but this brought it out in the open and we decided that this was what we needed to do. That's when we remodeled the barn and made the little shop, with this pie-in-the-sky dream that everyone would come out to our farm to buy our milk products. This didn't happen quite like we hoped, so as we grew we took our products to farmers markets. This worked pretty well because this gave us more exposure and we met a lot of people, and this led to other marketing venues, including some restaurants and different markets," he said.

"Over the past 15 years we've done a lot of different things in terms of marketing, but our store and the farmers markets have been the cornerstone that helped us build. For a while we were taking our products to four farmers markets, and this was time consuming because we were limited on help. By the time we did the milking, processing and packaging and delivering, it kept us all really hopping," he said.

"The farmers markets were very helpful for us but we are phasing those out now, focusing more on direct marketing here at the store and some mail order sales. We hope to be able to direct sell everything we produce," Alan says.

One concern is the increasing challenge with more government regulations.

"We were seeing a lot of that—government interference—regarding licensing and inspections. We sell raw milk, too, so that has been a challenging issue. We were trying to move toward a little more sovereignty and get out of some of these headaches. We surrendered our processing license and grade A license

with the dairy. We were selling all our raw milk products (milk, butter, cheese and cottage cheese, etc.) as pet food, under a pet food label, because we have a lot of customers who want these. This brought on a whole different aspect of marketing because our normal venues like restaurants and wineries wouldn't want to be selling pet food," says Alan.

"So we pulled back from this focus and have been just concentrating on our store. We still go to one farmers market, but are also trying to build up some drop-off points. This has changed the complexion of our marketing. In the process we have taken a hit, during this change, but we felt in our heart that this is what we should do, because of the purity of our product and the desires and needs of customers."

THE COWS

The dairy cattle on the farm have been a variety of breeds over the past 30 years. His father had Guernseys.

"Then we got Holsteins, and did some crossbreeding with Holsteins and Guernseys. Then we brought in some Jerseys and did some crossing with them. After that we brought in some Dutch Belted cows and milking Shorthorn, and then really started focusing on the milking Shorthorns. We have been breeding them for quite a few years, and breeding some of our own bull calves. We also brought in some milking Devon. The past 10 years our breeding has been very focused on milking Shorthorn and milking Devon and developing them," he said.

"We've been doing a lot of linebreeding, selecting for cattle that do well in a grazing dairy. These cattle do very well for us and are nice dual-purpose animals for meat and milk. We are just trying to fine-tune this to make them better and have been working closely with Gearld Fry for a few years, trying to learn the various aspects of linear measurements of cattle and developing our own breeding bulls, selecting cattle that work the best for

us. But it's a slow process," he said.

It's a long journey, working toward goals with genetic improvement in cattle. The genetic aspect is fascinating and challenging. "This is one of those things where the more you learn, the more you find out you don't know," he said.

THE FAMILY

"It's all been rewarding and I don't think we ever wanted to do anything different. Our children are very interested in and supportive of what we are doing. Kate is now a part of our dairy operation, but our sons didn't feel led to be an active part in it after they grew up. All the kids did chores growing up, and were a help on the farm."

Kids that grow up on farms develop a good work ethic and are able to take on responsibility and do well in whatever walk of life they choose.

"Our middle son, Luke, went into aviation training. He wanted to fly, but went into air traffic control and has worked at a couple different airports and is now at Indianapolis. He seems to like that job. He's married and we have two grandchildren. Our youngest son, Jess, is at Hagerstown, Maryland, working in the corporate world and also involved in ministry. He enjoys the farm but felt called to other places, too."

His wife Mary has always had an active role with the dairy and doing bookwork for the farm.

"In the early years when we started processing our milk, we were both down at the barn all the time. We sold a piece of land to neighbors who developed a small sheep operation, and Mary worked a little with them, too. Since we downsized our farm operation, we are back to Mary and I and our daughter Kate doing our dairy. Mary helps with a lot of the drop-offs and we both work together on that. We just juggle things around and make it work. In all of our management decisions we always talk it over and bounce ideas off each other, the three of us, and this helps us come up with the best approach we can." ©

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Managing Stress in Newborn Calves

This important process ensures your calves are more comfortable on the farm

BY JERRI
COOK

SUCCESSFULLY RAISING dairy calves for the homestead and small-scale family dairy farms has traditionally required a balance of three basic environmental factors—housing, nutrition, and physical health. Experts have written volumes about how to care for the basic physical needs of newborn calves. With the click of a mouse, anyone can learn how. But caring for the physical needs of a newborn calf is not enough to ensure a healthy adult. Not even close. In order to raise a calm, content and healthy dairy cow, you must attend to more than her physical needs.

Dubbed “The Cow Whisperer,” Dr. Temple Grandin was one of the first experts in animal behavior to point out that managing stress in newborn and young calves is likely just as important as housing, nutrition, and medical care for the healthy development of adult cows. A pioneer in the field of animal behavior, Dr. Grandin discovered that calves, like many people, are kinesthetic learners—they use their body to learn about their physical environment. If there is stress in the physical environment, there will most certainly be emotional stress on the calf, and that stress could determine the both the physical health and disposition of the calf all the way through to adulthood.

The term “imprinting” is the popular term used to describe the bonding process that takes place between a calf and a human in the first 48 hours of a calf’s life. This bonding process begins from the moment the calf is born. If at all possible, it is best for a human to be present during the birth. Once the calf is delivered, placing it in front of the mother so she can clean it will keep both the calf and the mother calm. While the cow is busy cleaning the newborn, the human handler can milk the mother. The first milk after the birth will have the highest level of colostrum, an essential life-sustaining element that the calf must have within 12 hours of birth. Some even claim the first feeding of colostrum can wait for a full 24 hours, but on our farm, we aim for the first hour and never allow the first feeding of colostrum to occur later than 12 hours after birth.

As crucial as the first feeding of colostrum is, how that feeding occurs is equally important. After the calf has been dried off and the mother has been milked, the calf is given its first bottle. On large, commercial dairy operations, the calf is merely put in front of a bottle that is placed in a metal holder on the calf hutch. This may be efficient



A calf lays in straw at a Pennsylvania dairy farm. Calves that are penned with hundreds of others can experience stress, causing them to misbehave.

in terms of time and money, but in terms of bonding or teaching the animal to respond calmly to human contact, it's completely ineffective. When newborn calves are housed with dozens or even hundreds of other calves, their stress level goes up. When that happens, they become difficult to handle, which often leads to harsher handling by human farm workers. By the time a calf raised in this environment reaches adulthood, she is temperamental and difficult to handle, making it more likely she will be abused by humans.

On our farm, newborn calves receive their first feeding of colostrum from a family member. The calf is allowed to drink at its leisure, while the handler pets and calmly talks to it. This gives the calf a chance to experience human contact in a low-stress environment, while at the same time allowing us to get a feel for the animal and to see if a name comes to us.

Sometimes, a calf is born on pasture or in the birthing pen when no one is around. When this happens, it can be difficult to determine if the calf has nursed yet. If it has, then it will have an initial imprinting or bonding with the mother. Once this has occurred, there is bound to be some stress in the calf when it is separated. Left unattended, this stress will likely manifest as an aloof, or even cranky, dairy cow. In order to override this imprinting, the calf must be exposed to additional human handling. If we weren't present for the birth, we spend about 20 percent more time with the newborn calf in order to ensure that it doesn't experience prolonged or pronounced stress by being separated from its mother.

Cows are herd animals, and that instinct is strong in newborn and young calves. For this reason, housing young calves by themselves or away from the rest of the herd is not recommended. By nature, cows become stressed when

they are isolated. While there is a danger of newborn calves trying to nurse on each other's navel, once they are accustomed to the bottle, they should be allowed to be with other calves in their age and weight class. However, even when calves are housed together, it is still vital that the human contact with each one continues. This way, young calves will recognize their human handler as part of the herd, which in turn reduces the animal's anxiety.

As part of the imprinting process, we make sure to touch the calf's udder area often, rubbing her belly much like you would rub a dog's belly, except our rubbing motion is a little slower and more circular. This helps the cow to adjust to the actual milking process when that time comes.

On our farm, we introduce each new calf to every part of the farm where she will someday visit. Starting at only a few months old—depending on each calf's personality—we begin walking them up and down the aisle of our tie-stall barn. As they approach breeding age, we allow them into the barn into their own stall to get them accustomed to the sounds and rhythms of milking time. While we separate our calves by their age and weight, all of our calves can see each other as well as the milking herd. The calf pastures are situated so that they can see the herd coming and going from the barn, as well as the inside of the barn itself when the doors are open. Because the established routine is imprinted on them from the moment of birth, they are much easier to introduce into the milking string as adult cows. We have also found that first-calf heifers are much calmer during the birth process if they have bonded with a human as a newborn.

Humans and animals have been bonding since the beginning of creation. There's nothing new about it. What is new is our understanding of how the bond

affects the stress-levels and well being of the animals in our care. Housing, nutrition and physical health are indeed crucial to successfully raising healthy dairy calves, but unless you are willing to spend some time building a bond with each animal in your herd, you're not going to raise the best dairy cow you can. Continued bonding with dairy calves from the time they are born reduces human stress as well as herd stress, making life on the farm pleasant and productive for everyone. ☺

As part of the imprinting process, we make sure to touch the calf's udder area often, rubbing her belly much like you would rub a dog's belly, except our rubbing motion is a little slower and more circular. This helps the cow to adjust to the actual milking process when that time comes.



Ask Laura

I have a small backyard. What's the smallest amount of bees you can raise?

— MONICA, FROM FACEBOOK

The smallest unit of honeybees you can raise is a single colony. The population of that colony will range from thousands to tens of thousands of bees depending on its health and the season.

So, what's it like having a colony teeming with 60,000 bees situated in your backyard? Well, it can be a joy and a pain. There is joy in observing bees daily over time. When they're calm they add a bustling, all-is-well feeling to your garden. Alas, there is pain in the sting. You've heard the word "beeline," right? Foragers move like darts in and out of the hive, and can entangle themselves in whatever is in their way. (Curly haired people, watch out!) When they're testy, things like a lawnmower's whir, or a visitor's cologne can prompt stings. Curious children and dogs must learn to keep away. And you must prepare yourself to deal with swarms each spring.

Another stingless idea for your backyard: research ways to attract and nurture local pollinators like mason bees.

How to Talk to Vegans About Honey

BY LAURA TYLER COLORADO

I HAVE YET TO MEET A BEEKEEPER—commercial or hobbyist—who doesn't adore his or her bees. There is a beauty and a romance to beekeeping that begins with the sun, and, if you are lucky, ends in a bonanza of the best tasting honey you have ever known. Small-scale beekeepers observe colony life up close over time, an experience that enhances their understanding of the natural world, and perhaps even inspires a sense of wonder about the cause and effect relationships that bind all living things. So it can be jarring to discover—and this can happen when you bring your honey to market—that not only does not everyone share your enthusiasm for bees, but there are people who believe you are harming them by participating in beekeeping.

Knowing how to answer tough questions about bee health, conditions and ethics can be key to improving your honey sales.

As an animal product, honey isn't part of a strictly vegan diet. Yet many vegans are drawn to honey and seek out conversation with beekeepers at their local farmers market. By relaxing defensive language, redirecting litmus test questions and speaking with confidence, you can engage vegans and non-vegan activists in productive conversation about bees that will position you as a reliable source of information, and perhaps even earn your honey some new fans.

RELAX YOUR DEFENSES

The Vegetarian Resource Group defines vegans as vegetarians who "do not use other animal products and by-products such as eggs, dairy products, honey, leather, fur, silk, wool, cosmetics, and soaps derived from animal products." In other words, honey isn't vegan. Whether or not you think it ought to be is irrelevant. Like any belief system, veganism is defined by what its most loyal adherents hold true and there is an element of faith to it that is inarguable. So don't argue. Accept it. Honey is not vegan. Period.

Interestingly, not every person who follows a vegan diet eschews honey. Some people seek it out as a healthful alternative to more processed sweeteners like agave nectar. Others simply enjoy it or are interested in bees. Whatever the draw, the main concern vegans have about honey is that its production is exploitive, cruel or somehow harmful to the bees. When vegan customers approach you at the market, this is often what they're trying to find out: Are you a good beekeeper? Or are you an exploitive one? As a small-scale beekeeper you are in a good position to allay your vegan friends' concerns by responding openly rather than defensively to their earnest questions about raw honey, how it is produced and how you treat your bees. Avoid getting caught up in a dead-end conversation about honey not being vegan, which will peg you as an adversary.



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When vegan customers approach you at the market, this is often what they're trying to find out: Are you a good beekeeper? Or are you an exploitive one?

It is not unusual for vegans to ask if any bees died in the honey collection process. To answer openly is to answer truthfully. And the truthful answer is probably yes. If a hive is healthy and full of bees, a few will get squished when you pull honey. It is okay to share this information with your vegan customers and allow them to make their own informed decision. Your goal is not to change someone's belief system, but to leave a door open to their approach. An open, honest answer is likely to beget more questions. It is the conversation as a whole, and your potential customers' sense of you as a person in general, that will convince them to buy bee products from you (or not).

REDIRECT LITMUS TEST QUESTIONS

While the questions beekeepers get from honey-curious vegans are often sincere and interesting, there is another kind of question you may hear from a different group of people (not vegan) that comes from a different place. Litmus test questions are pointed and political. Neither curious nor kind, they are about making a point. And they are hard to answer truthfully without sounding wrong or defensive.

"Do you feed your bees?" is a typical litmus test question. "Do you use smoke?" is another. Their

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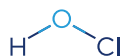
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emergence at my local market coincided with the release of a popular documentary about bee decline that showed appalling images of a commercial beekeeper feeding high-fructose corn syrup to bees, a practice associated with bee decline. The images were repellent, and it is no surprise people wanted to talk about them. Unfortunately, they led some to the startlingly wrong conclusion that feeding in general is bad for bees.

The problem with litmus test questions, laced with judgment as they are, is that they have a shaming quality that can nudge inexperienced or otherwise uncertain beekeepers into bad decisions. And they can be annoying. There is no need to defend or explain yourself when responding to litmus test questions. If you have the time and desire to engage you might redirect hostile questions back to the questioner, "Yes, I feed bees. What makes you ask?" Or you can simply change the subject or ignore.

SPEAK CONFIDENTLY

Whatever choices you made early in the season about how

to care for your bees this year—where to place them, what to feed them, how many to keep—stand by those choices when you bring your honey to market. Speak clearly about them. There is no need to defend.

It is okay to feel challenged by ideas that on the surface appear oppositional to beekeeping. Bees are charismatic creatures. Most people who engage with you about them have their well being at heart even if their ideas about them, and your work as a beekeeper, come off as hostile and ill informed.

Remember, you are the expert. The marketplace is a two-way street, and beekeeping is an ongoing ever-changing thing. You may find, like the commercial beekeeper who quit feeding high-fructose corn syrup after allowing that practice to be documented on film, that difficult, oppositional questions spur new, constructive ways of thinking about beekeeping. ©

Laura Tyler is the director of Sister Bee, a documentary about the life of beekeepers, and lives in Boulder, Colorado, where she raises bees with her husband. If you have questions for her about raising bees, contact herlaura@sisterbee.com.

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Common Eye Problems in Goats

BY CHERYL
K. SMITH

THE MOST IMPORTANT PART of owning goats is keeping them healthy, and the best way to do this is to examine them regularly and act fast when you see a problem developing. Look at each goat at least twice a day—during feeding time—searching for any change in routine or sign of illness or injury. This includes the eyes.

To determine whether a goat is experiencing an eye problem, look for squinting, wateriness or crustiness, cloudiness, hair loss, redness or swelling in or around



the eye. Other more subtle indicators of an eye problem include holding its head abnormally, walking into things, or a hesitance to walk through a gate, door or other area. If you notice a problem from a distance, examine that animal more closely. Despite frequent checking, any goat owner will invariably find that one of their goats has developed an eye problem.

Every few years I have a goat or two that develops mild eye problems. I have so far had success with early and consistent home treatment, with no lasting effects.

Goats have three eyelids that protect their eyes. The upper and lower eyelids can be closed to provide protection from harsh environmental factors. Their movement over the eye also helps keep it moistened by tears and also helps manage light entering the eye. The third eyelid is also known as the “nictitating membrane.” The purpose of the third eyelid is to further protect and lubricate the eye. It contains tear glands and closes in

sync with the other eyelids. Tears also protect the eyes and even contain immunoglobulins, which undoubtedly help to prevent infection.

COMMON EYE PROBLEMS IN GOATS

Entropion (or inverted eyelids) is a condition in which the eyelid—usually the lower eyelid—is turned inward. It is usually found in baby goats that are one to two weeks old. In some cases, both eyes are affected. Entropion causes the lashes to rub on the eye and cause watering, irritation and damage to the eye, if not corrected.

While known to be genetic in some sheep breeds, entropion can also be caused by too much exposure to heat lamps or ultraviolet radiation. Goat breeders who encounter cases of neonatal entropion in their animals may want to consider not keeping those kids for breeding.

The first signs of entropion include watery eye(s), cloudiness of the eye(s) and, in some cases, it may even lead to blindness. Closely examining the eyes of young kids—particularly if they show signs of excessive tears—will help with getting early intervention and avoiding blindness or other eye damage.

A veterinarian can often treat entropion by injecting 1 cc to 2 cc of procaine penicillin under the skin of the eyelid. This is slowly absorbed, causing the eyelid to swell and pull the eyelid out so the lashes no longer irritate the eye. This procedure is not recommended for the goat owner with no veterinary training.

In more difficult cases of entropion, the veterinarian will need to suture

Eye problems can be common with goats, although this one is a good example of having clear, healthy eyes.

or staple the eyelid into proper position. Finally, in the most severe cases, surgery is needed.

Ectropion is a less common eye problem in goats. In this condition, the eyelid (most often lower) turns outward, rather than inward. The pocket caused by ectropion can collect bacteria and other debris, which can lead to eye damage. In more severe cases, surgery may be required to remove some of the skin around the eyelid, along with antibiotic treatment. The earlier the procedures are performed, the more likely a successful outcome.

Pinkeye (also called infectious keratoconjunctivitis) is a common problem in goats. It is an inflammation of the eye that may have a variety of causes, including irritation, which can lead to infection. Irritants can include entropion, hay dust, bright light, or wind (often occurring during transport), among others. Once the eye is infected, flies or secretions from the eye can contaminate hay and bedding, leading to an outbreak of pinkeye among the herd. This is why it is more common after goat shows, when the animals are exposed to other unrelated goats and come into contact with common irritants.

The most common bacteria that cause eye infections in goats in the United States are *mycoplasma* and *chlamydomphila*, according to *Goat Medicine*, although other agents can also be implicated. Some goats can be carriers of mycoplasma, with no apparent problem. Others will have a mild form of infection that lasts only about 10 days, or a more severe type that also affects other parts of the body, such as the udder or the joints.

Treatment of pinkeye includes washing the eye with sterile saline (the same as used for contact lens washing) and then application of antibiotic drops or ointment, such as terramycin eye ointment, several times a day until after the eye is improved. Some people have reported success treating with drops of Port wine or antibiotic injectable

such as oxytetracycline two to three times a day. In more severe cases, a veterinarian will be needed to prescribe steroids, when no ulcers are present, or to perform surgery.

Another condition affecting goats' eyes is inflammation of the eyelids, or blepharitis. It can have a variety of causes, including mite infestations that include the eyelids, fungus, bacteria, zinc deficiency or even pinkeye that has spread to that tissue. It may even be a combination of several of these problems, for example a mite infestation that has led to bacterial infection. Treatment for blepharitis will depend on the cause.

Tumors can occur on the eyelids or even behind the eye. Many eyelid tumors are not cancerous, do not grow beyond a limited size and are nothing to be concerned about. Those that continue to grow or seem to be spreading, or appear along with other tumors, should be investigated by a veterinarian. They may be removed surgically with a good outcome, if the owner is willing to make that expenditure. Papilloma virus can also cause wartlike growths on the eyelids.

Tumors behind the eye or in the nasal cavity are not common, but are of serious concern. They can cause the eye to protrude abnormally and are usually found upon inspection of the eye by a vet.

INJURY AND TRAUMA

Because goats are curious and adventurous, they can be prone to injuries. This includes the eye, which is more fragile than other parts of the body because it is only protected when the eye is closed. On the farm, they can find all kinds of mischief to get into, including getting caught in fencing, walking into sticks or branches, or getting poked or butted by a herdmate.

Mild scratches to the eye may show up as watery eyes, cloudiness or squinting. Treatment with antibiotic ointment, as for pinkeye, may resolve the problem. If this doesn't

work, a veterinarian will be needed to determine whether there is a foreign body in the eye or the damage is more severe.

In some cases of trauma, the white of the eye (sclera) will turn red where the blood vessels broke. Some suggest using an ice pack, but time will usually resolve the problem as the blood is reabsorbed. To avoid an infection, apply eye ointment several times a day.

Other eye trauma can be caused by plant seeds or stickers that can become lodged under the eyelid. The symptoms are the same as any other eye irritation and should also be treated the same—rinsing with saline solution and treatment several times a day with antibiotic ointment. If you can see what is causing the irritation, you can try to remove it with a cotton swab or your fingers. Make sure to irrigate the eye after doing so.

Blindness is not uncommon in goats, and I have friends who have successfully raised a blind goat. Often, in large meat herds, the damage is done before the owners are even aware that there is a problem because they are not able to examine each goat individually.

Blindness can be caused by vitamin A deficiency in the goat's diet, tapeworm, polioencephalomalacia (thiamine deficiency) or other neurological disease, optic nerve damage, collapse of the eyeball, overheating of the brain from disbudding or various other conditions. In the neurological conditions such as polioencephalomalacia, if the goat is treated soon enough, the blindness may be only temporary.

Conclusion. While eye problems are not uncommon in goats, they are generally easy to treat and, if caught early, leave no lasting problems. Always check your goats regularly and look for signs that a problem is brewing. ☺

Cheryl K. Smith is a freelance writer and has been raising miniature dairy goats in the coast range of Oregon since 1998. She is the author of Goat Health Care and Raising Goats for Dummies and is a frequent contributor to Countryside and Small Stock Journal.

A Primer on Raising Alpacas

A few alpaca facts from Golden Spirit Farm



BY RON MCKIBBEN

IN OUR PASTURES at Golden Spirit farm in Florida, we maintain approximately 200 alpacas, and are fortunate enough to have grazing areas to keep the groups in moderate numbers. An important part of raising healthy alpacas is observing and predicting their behaviors.

Alpacas are descendants of the camel and cousins of the llama. Observing the alpaca is an interesting and fun thing to do, as they are very cute to see and show a lot of their personality with those big curious eyes. However, the fiber they produce on an annual basis

is more than attractive; it is one of the business reasons for owning an alpaca.

Alpacas are easy on the ground they graze on due to the soft pads on their cloven hoofs and the lack of upper teeth. When they graze they simply nibble the tops of grass rather than pulling out chunks of grass, including the roots. They forage and they love to roam, so they enjoy the pastures. Nutritional grass and hay serves to provide a majority of the diet. In addition, grain can be used to supplement their diet.

Whether watching them graze or enjoying their antics, their herd mentality is always

apparent. Alpacas are herd animals and usually move and eat in groups, so you always see one or two others with them. Their instinct is to protect each other by making sure no predators are near. They feel safety in numbers and may decide to run, kick or even spit. It is also necessary to have strong and relative high fences.

Alpacas usually deliver one baby after 11 1/2 months. With that length of gestation, it is important to be sure they are healthy and protected. Twins can occur, but it is not common. Generally a cria (another name for a baby alpaca) will be between 12 and 18 pounds and will range in color from white to black and many colors in between.

Its fleece was first considered luxurious by the Inca Indians in Peru, from where the alpaca originate. Today's fleece market is evolving, but it can be sold raw, processed and sent to a co-op, or there are fleece shows where it is judged in competitions.

Here at Golden Spirit, owned by Frank and Brenda Crum, the alpaca are sold for production or pets depending on the quality of fiber. Other aspects of the business include breeding, events and tours as well as a store with EveryWhere Alpaca, featuring sweaters, scarves, coats, gloves, toys and many other items. ©

Ron McKibben is a freelance photographer and writer based in Florida.

An alpaca at Golden Spirit. Photo by Ron McKibben

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Shoo, Fly

It can be a daily battle, but keeping flies from taking over is important

BY ALEXIS
GRIFFEE

AS YOU KNOW, EVERY FARM needs to have a pest control program in place, as flies can be far more than just an annoyance. They can be an actual health threat to both you and your animals.

It is estimated that the flies you see flying around only make up approximately 15 percent of the total fly population of the area. No single control method offers 100 percent eradication of pest flies and midges. A successful fly and pest eradication program on any farm has to be multifaceted. Regardless of whether or not your farm employs natural, or chemical methods, with proper planning massive fly infestations can become a thing of the past.

A key aspect of fly control is to know your enemy. There are numerous different species of flies, some beneficial and some pests. Different types of flies require different chemicals to control, and different attractants. Also, by knowing what species of fly you are dealing with, you can also work to eliminate or at least reduce its preferred habitat, breeding grounds or attractants.



The two most common flies that farmers deal with are the housefly, *Musca domestica*, and the biting stable fly, *Stomoxys calcitrans*. The common housefly, while more susceptible to various control methods than other types of flies, is still a formidable opponent for any farmer. A single female housefly will lay approximately 500 eggs in her short lifetime!

Common attractants for houseflies are wet areas, compacted or rotting hay (especially if wet), manure and household garbage. According to Spalding Labs, the housefly is said to spread more than 30 different bacterial and protozoan diseases.

Houseflies are usually easy to identify based on their habits. Generally, houseflies like to congregate around the eyes of livestock due to the moisture. They can also be found on other various parts of the animal's body flitting around. They do not have a specific preference area that they always congregate to unlike some other fly species.

The stable fly is harder to control than the housefly. As if flies alone are not bad enough, the stable fly is equipped with a piercing mouthpiece and an appetite for blood. Both the male and female stable fly feed on the blood of mammals. Stable flies like to congregate around the legs of their victims. This is often why you will see livestock stomping angrily in a pasture. Requiring blood for the production of her eggs, a female stable fly is capable of laying over 800 eggs in her lifetime. Additionally, stable flies are also known for their ability to travel great distances, often over a mile.

As with the housefly, the stable fly has its own preference for attractants. Stable flies love old wet hay bales, chicken litter, and any type of moist vegetation like old straw or grass clippings. A recent study from Texas A&M University showed that more than one million stable flies hatched and matured in the leftover residue of one round bale of hay!

Elimination or minimization of these attractants are the first steps in a successful fly control program.

Far more than just an annoyance, pest flies can present many dangers to both you and your livestock. Since flies feed and breed around unsanitary areas, they are mechanical vectors of many diseases and parasites. Also, before feeding, houseflies will regurgitate their stomach contents in order to liquefy their food, further spreading germs and disease. Through this as well as biting, flies have been known to transmit salmonella, anthrax, tuberculosis and numerous other diseases to humans.

Animals are also susceptible to the diseases carried by these tiny pests. Flies commonly spread diseases like pinkeye, blue tongue and carry a variety of enteric pathogens that lead to gastrointestinal problems. Flies can also wreak havoc on lactating animals as well. When they land or bite an animal's udder, they can introduce pathogens that have deadly consequences. These pathogens can then result in mastitis or other damage to the udder. If not caught quickly and treated appropriately, this can be fatal for the infected animal. Furthermore, animals, particularly horses, can be highly allergic to fly saliva. This allergic reaction results in hives, discomfort and often times a condition called "sweet itch" that is extremely hard to manage. A well-planned and executed fly management program is vital to the health and comfort of the animals on your homestead.

CHEMICAL METHODS

FLY SPRAYS

Fly spray is another time-tested method of dealing with nuisance flies. However practical, fly spray has limits. Fly spray is generally short acting and depending on the type of livestock you have, you must be careful regarding what chemicals you apply on them. With that stated, for animals with fly allergies or in cases on massive fly



outbreaks, fly spray can provide much needed relief, even if temporarily.

Another common problem faced on the farm is how to keep flies away from your livestock guardian dogs. Here in the South, the biting flies can wreak havoc on your working dog, especially by biting around their nose where the hair is sparse. However, this presents a problem as an owner is limited by what products they can use that won't simply be licked off. Several fly spray companies have created blends of creams and gels that are safe for use on canines and will stay put on their noses.

Aside from the sprays that you apply directly on your animals, there are other sprays that can be set up as part of an aerosol spray system in your barn. These systems can range from very small automatic sprayers that hold small aerosol cans to large full barn systems that draw from a 55-gallon barrel of the particular spray. The benefit to this is that you do not have to be present for the spray to be applied. These systems are often used in horse and dairy animal barns as an extra preventative measure. Often

times these systems are designed with specific type of livestock in mind. The companies that design these systems tailor different spray formulations to not only control the most common fly that plagues that particular livestock species, but is also safe for them as well. Certain formulations are also approved for use on dairy and meat animals with no withdraw time.

FEED THROUGH/BLOCK

Feed-through fly-control products are one of the top used and regarded fly control options available. Feed through fly control is a feeding supplement that is added to the feed of your livestock. This method does not harm the livestock; however, it breaks the life cycle of the fly by killing fly larvae that is in the manure of the treated animals. Currently, there are feed through products for equines, swine, cattle and goats. Some companies claim that this method alone can reduce your fly population by 97 percent.

Another variation of this product is made into a molasses stock block. This option is used frequently by large-scale

cattle producers that are unable to singularly dose their stock.

If using any feed through products on your livestock that are used for dairy or meat production, be sure to read the manufacturers' suggestion regarding withdrawal times. In these circumstances, there are other natural methods that can be employed as well.

NATURAL METHODS

ELBOW GREASE

One of the most common sense natural methods of fly control is a bit of elbow grease. Cleanliness is next to flylessness. (Isn't that how the saying goes?) Manure is a fact of life around a farm. One way to reduce flies, or at minimum control the areas that they congregate, is to control the manure and the old trampled hay. It is easy to get behind on cleaning the barn if you miss even one day. One day means a lot to a fly when you consider its life cycle! Be sure to keep up on cleaning stalls, barns and pastures. If you clean and move the manure to one certain area, then you will have a main specific place to concentrate your fly control efforts.

Always be mindful of where you place your manure and compost piles. While it may be the most convenient location, you do not want a large pile of manure by your back door. Similarly, you want to encourage composting action to take effect. Composting will heat up the manure, often times to temperatures

that will make it uninhabitable for flies at their various stages.

One of the most successful natural fly control methods is the use of pheromone attractant traps. These odor traps work by appealing to the primal nature of reproduction by mimicking specific pheromones to attract flies. This method is extremely effective for catching adult flies without having to use any sprays on your animals. However, odor traps do not work on biting flies!

While fly pheromone products may smell like love and food to flies, humans do not share the same admiration for this odiferous combination. Due to this, you have to be very mindful when placing these traps. Also, since they are an attractant, you do not want to place them directly in an area where you are trying to eliminate flies. Proper placement of these traps would be near enough to the target area to draw the flies away, yet far enough that you do not draw flies from other locations to the place you are trying to make fly-free. One word of warning for those who have farm dogs: dogs often find the smell of the pheromone very attractive as well. Be sure to place these traps where dogs cannot reach them.

For larger livestock like horses and cows, fly masks can be a great tool when combating flies and other pests on a small scale. Fly masks for cows and horses can not only prevent the annoyance and painful bites of flies but also aid with disease

Stable flies like to congregate around the legs of their victims. This is often why you will see livestock stomping angrily in a pasture.

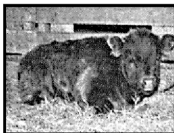
control. In cattle especially, flies can spread diseases like pink eye quickly through a herd resulting not only in problems for the cattle but also increasing the work and financial burden on the farmer.

In regards to keeping pests off of your horses, many companies also make fly sheets, and neck and leg guards as well. Some equines are severally allergic to the saliva of flies and midges and need extra protection methods to keep them comfortable. Although these items do nothing to combat the fly problem, they are a tool to keep your animals happy while you use other methods to eradicate the problem.

FLY PREDATORS

Far better than trying to control an outbreak is preventing it altogether. One very effective tool in your fly combatting arsenal is fly predators.

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The trick to a successful program with fly predators is to start early in the season before you get into a massive infestation. Pest flies reproduce up to nine times faster than fly predators, so it is vital to keep your application of new beneficial insects timely.

Different companies use different species of fly predators. A common mixture of fly predator species includes *Muscidifurax raptorellus*, *Spalangia cameroni* or *Spalangia endius* and *Muscidifurax zaraptor*. Certain species have also proven to be more beneficial on when working with different species of livestock. It is always wise to contact the company directly before ordering to work out a tailored fly predator plan to ensure the maximum benefits. The effectiveness of this method really depends on several variables. To be at all effective, it is vital that you keep up the routine of at least monthly application of the fly predators during the warmer months.

One thing to remember is that fly predators have an approximate range of around 150 feet only. However, pest flies have a range of over a mile. While fly predators are a fantastic option for control, it does need to be used in conjunction with other methods due to the limited range of the beneficial insects.

Regardless of whatever method, or methods, that you employ for fly control, consistency is the key to success. The battle with flies is won by persistence, strategy and diligence on behalf of the farmer. The most successful plan for controlling flies and keeping your animals happy and healthy through the summer is to use a variety of methods that target specific aspects of the fly's life cycle. A solid strategy that encompasses all of these aspects—and has a broad reach for numerous different species—is a plan for success. Regardless of whether or not you choose to use chemical, natural or a combination of control methods on your farm, proper fly management is no longer a just a dream on today's farms and homesteads thanks to the knowledge and products at our disposal. ©

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Throw Out the Chemicals

Basics about natural skin care, essential oils and non-toxic bug repellents for your homestead

BY MELISSA
MINK
THE HOMESTEAD
MOMA

TO MOST HOMESTEADERS going green, natural or organic means that you are trying to reduce toxins that have crept into your everyday products. It can be tricky and deceptive when reading labels without knowing what to look for. Many people are also looking into or are using natural essential oils for everyday use such as cleaning supplies, bug repellents and medicinal help. So here are some tips that I hope will help you along the way.

The skin is the largest organ of the body. It also absorbs about 70 percent of whatever it comes into contact with. Everybody who's ever splashed chemicals on them now gasps! Yeah, okay, me too. Studies have shown that you can actually absorb vitamins and

minerals that are in the ground as you work, and that people who lead an active agrarian lifestyle are happier, healthier and live longer. Ahaparenting.com quotes a study that says children who get outside to play and work (get dirty) are healthier, happier and more creative, and have better vision and higher test scores than children who are not as active outside.

I find it ironic that when parents who are usually more "germ-phobic" carry on about not letting children get dirty, they could be doing their children more harm than good. Children who get outside to play are exposed to more allergens and germs that will build a robust natural immune system. Another good example of getting some germs to build up resistance is seen between using bar and pump soap. Bar soap is just as "anti-bacterial" as pump soap, but much less harsh on the skin. Some studies are showing that it may be beneficial to use bar soap to "catch" some communal or familial germs to build up your resistance. If you are a germ freak, then I hope you will reconsider and start using bar soap in your home because it really is better for you. We use bar soap at every sink, even at the kitchen sink on dishes. It works just as well without severely irritating our skin. It's also less expensive and you can make it or buy it without all the chemicals. Also, don't buy the lye soap scare! All soap is lye soap; even most liquid pump soap is made with a form of lye (potassium hydroxide), but with many more detergents and chemicals added.

Natural skincare items can be found everywhere, but are they really natural? I first got into natural/organic skincare while dealing with eczema in my home. We had tried everything prescription and over-the-counter we could. Bathing got to mean

Reducing toxins around the farm makes it safer for young ones and animals.

What is “natural,” “organic,” or “raw”?

For the most part, the difference in these are that they are naturally occurring in nature with little to no industrial processing to bring them about. Natural is not organic or raw. Organic or raw means there are no chemicals used in the processing of that material. Natural can mean a natural substance such as Shea butter, but processed by adding chemicals to it to get it to perform in a certain way, i.e., rub in smoothly.



Natural bug removers made from essential oils are much easier on your skin, your plants and your environment.



scratch for our own family. I was a little familiar with ingredients, but knew nothing other than I had to get the chemicals out of our home for my children’s best interests and my sanity. I began to investigate and read everything I could find. I have been making natural skin care products for more than 10 years, including a bug repellent that is in retail stores, seed catalogs and select Tractor Supply stores across the country. Necessity really is the mother of invention.

LOOK FOR ORGANIC AND RAW

Many natural skincare items contain detergents that are not listed. You really should look for “organic” or “raw.” Certification of ingredients also bumps the price higher than what most people can afford, so buying in bulk and direct from producers will help cut that cost. I try to buy from direct importers and not from

middlemen, who may dilute the product. A little knowledge goes a long way. Remember, if a product is labeled natural, it does not have to list chemicals used in processing on the label, even though traces of those chemicals will be in the final product. The best way to avoid this is to look at the way an ingredient was processed—cold pressed, distilled, etc. Try to follow the product down to its roots, so to speak. Many of us undoubtedly grew up with this saying and I have found that it is true: “If you want it done right, do it yourself.”

When looking at essential oils, also note that as long as they have not been diluted they are all “therapeutic grade.” Look for the main active component. Compare its amount or percentage to other oils and then they will show for themselves which one is the best, and which one has been cut or is not as pure. Another sales tactic of essential oil dealers is to label an oil “food grade”—this is a label you will pay more for. All ingestible essential oils are “food grade.” For example, rosemary is toxic to ingest, therefore it will never carry a “food grade” label at any amount, while peppermint, lavender and oregano oils are ingestible in small amounts. However, you pay more for that “food grade” label on them. This is the sum of it: you could ingest that particular oil with or without the label because the oil itself is not toxic to the human body.

In many cases a good crafter’s essential oil is as good (look at active component) or more potent as “brand” essential oils. Always remember that purity can and should be verifiable. Check out the main ingredient for potency. A good example of this is eucalyptus essential oil. The main active component is “cineole,” also called eucalyptol, and many do not list how potent or dull their oil is.

only a water bath, and clothes washing (even with my homemade detergent) was not effective at ridding dirt or helping my son’s skin. So water was about all I could use. I quickly realized this would not work long term, so I became determined to find out how I could make our own products. I had several years’ experience in cosmetic sales and then became interested in making items from

It should be listed to verify purity. You should look for this to be anywhere from 70 to 85 percent and still all pure. A good standard eucalyptus oil is 80/85. You should question this if the percentage of active component isn't listed. It is more potent if the number is higher. You'll need to do your homework.

I have been working with natural essential oils for about 15 years or more now in my home and business. We are still finding uses for them in our everyday lives. Their potential is amazing, but remember, just like the chemical-based products, essential oils and their uses will "work" for some and not for others in the same way. Everyone's body chemistry and environmental variables are different. So when beginning, use with caution and enjoy. (Note: Whenever working/using essential oils, if eye contact occurs *do not wash!* Use common cooking oil that is wiped into eye to remove the essential oils.) The essential oils will gravitate to this oil and all will be removed in seconds.

Chemicals on the other hand, are man-made or synthetic, and in skincare it is often hard to tell the difference. Many skincare items such as a lotion need a small amount of chemicals to keep it from spoiling and separating, as lotion is an oil-and-water mixture. A good example of chemical vs. natural here is in the area of fragrance oil and essential oils. A fragrance oil is a chemical and an essential oil is a totally natural oil that is derived from plant material. It is estimated that it takes about 100 pounds of plant material to render 1 ounce of essential oil.

Someone who wants to avoid all chemicals on the skin could opt for a lotion bar that is made from organic or raw ingredients and essential oils, as opposed to a fragrance. Natural and organic



materials are going to cost a bit more, but may be worth it to your health in the long run. A good way of comparing the natural and organic to a chemical is in things like bug repellents. Whether it's for you or your animals, many natural essential oils will be just as effective as a chemical with less toxic exposure and usually fewer reactions on the skin or lungs. We know that inhaling chemicals can cause harmful effects that essential oils do not have a record of causing. Some of these are: lemongrass, citronella, lavender, rosemary, neem and peppermint. Most people thoroughly enjoy these scents as an alternative to strong-smelling chemicals and gladly go natural because of the more pleasant scents.

Use at your own risk. If using essential oils on skin or animal coats, read labels, trade recommendations, and use a carrier oil if necessary. A cooking oil like organic safflower or organic coconut oil with a few drops of essential oils will work when applying directly to skin on people. ©

Learn more about Melisa Mink and her products at their online store, HomesteadMoma.com.



Natural Bug Spray

As a mom I am always looking for natural ways to allow my children to help as well as care for them. Our garden is where many bonds are formed and hours are spent, so I want it as non-toxic, bug-free, and fun as possible. That is the idea behind our DEET-free bug repellents. I am also finding many homesteaders, parents, and grandparents feel the same way about avoiding toxins, but just aren't sure where to get started. For plants, animals, barn and home try this:

2 ounces Neem oil

1 ounce Citronella

5 ounces Lavender

Add all to one-quart sprayer, with 24 ounces of liquid cooking oil, such as organic safflower oil. Shake before use.

For horse flies, ticks and fleas, try spraying or rubbing this all over animals including belly; while for garden, home and barn, just spray directly to the area you want to rid of pests.

Neem oil is best on plants and animals. It is very strongly scented, so it is not likely to appeal to people. It is as natural and non-toxic as you can get. It does not harm the bees and will not kill anything, bugs or you. It repels pests instantly.

Aphids, white flies and all infestations will be gone within a day or two. This spray recipe is even safe for those "little helpers" to use! Put into a quart-sized sprayer for them as it is easier to hold.

— *Melissa Mink*

Lesson #5: Plant Tomatoes Deep



BY LIL
ROBERTS
CALIFORNIA

WHEN PLANTING TOMATOES in your garden, remember to plant them deep so half of the plant is below dirt level. This will make a lot sturdier plant, as the buried plant and stem will produce roots, and a sturdier plant produces more tomatoes. Plus you will no longer have a long, leggy plant that can bend over and break off real easy. Add some epsom salts when you plant the tomatoes, as this will give them an added boost of vitamins and energy. We add about a half to a cup of epsom salts to a gallon of water. ☺

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.

Machinery Madness

It's tempting to buy used equipment, but are you really saving money?

BY JERRI
L. COOK

WHAT CAN A MILITARY ENGINEER from the mid-20th century teach us about buying used farm equipment? Quite a bit, actually.

During World War II, the Air Force was working on a sensitive project to determine just how much deceleration force the human body can withstand. In short, just how hard can you hit the ground and

survive? The project ultimately proved successful because of one engineer's reflection on a universal truth and the efforts by his team to keep that observation at the experiment's forefront.

Captain Murphy's observation was simple: Anything that can go wrong will. Keeping this in mind, the team was able to measure the deceleration force on impact of an Air Force doctor who volunteered to ride a sled into a wall. He survived at 40 g. Today, it is widely held that most people can survive an impact of 50 g, or 50 times the Earth's gravitational pull.

Colonel John P. Strapp, the doctor who survived the experiment, said the reason he volunteered was because of Capt. Edward Murphy's insistence that they check everything that could possibly go wrong, and check it often. Captain Murphy knew the best way to avoid disaster was to circumvent it, and because of that diligence, Colonel Strapp trusted that he would be safe.

Eventually, the observation came to be known as Murphy's Law. If you're a homesteader who owns used farm equipment, or if you're thinking about becoming a homesteader who owns used farm equipment, then Murphy's Law and its corollary apply to you: Anything that can go wrong will, and at the worst possible moment.

It was a wet spring in these parts. It rained so often that getting the hay cut, raked, and baled was almost impossible. There just wasn't enough time between showers for the hay to dry. By early July, we had all but given up being able to bale our first crop, and went to Plan B—chopping it and blowing it into the silo.

Wayne fired up the Allis Chalmers 6080 and hooked up the Fox 2100 chopper and the chopper box. The first two rounds went well enough, given how damp the ground was. But on the third pass around the back hayfield, things got complicated.



“The universal aptitude for ineptitude makes any human accomplishment an incredible miracle.” **COL. JOHN P. STAPP.**

As he made the turn on the back field, Wayne heard a grinding, crunching noise. When he looked over his shoulder, he knew something had gone wrong. The chopper wasn't chopping. He headed back to the shed to have a look.

The news wasn't good. The sprocket for the pick-up reel on the hay head had shattered, and there was no way to repair it. After looking online for a used one with no success, we bought a new sprocket with a weld-on hub from a local farm supply store. Wayne had it fixed in a few hours and was back out chopping hay the next day.

He wasn't in the best mood. The constant line of storms had kept us from getting the hay off the field, and now the breakdown had cost us another day. Even so, Wayne was determined to get the hay off the ground before the next bout of showers. But we all know the law—anything that can go wrong will and at the worst possible moment. That day, with another round of storms less than 24 hours away, the bearing on the pick-up reel on the same side as the repaired sprocket seized. This time, the damage to the hay head was beyond repair.

We spent most of the day on July 3 calling tractor salvage yards and searching online for a replacement hay head. Finally, late that afternoon, we found one. A neighbor knew of a farmer who had a couple of Fox choppers. We couldn't make contact with him until later that evening, but when we did, he told Wayne there was a Fox 2100 chopper in working condition he'd part with for \$500. We went and picked it up early the next morning.

The \$500 hay head ran for one day. Then, the U-joint that runs the infeed roller failed, and we were unable to source one anywhere. The gentleman who had sold us the hay head had another one, but he wouldn't sell just the part we needed. We had to buy the

whole thing. Not wanting to spend another \$500 for a hay head that may or may not be suitable for parts, we decided we would have to come up with Plan C.

Plan C involved a magnet and a stick. Using an old automotive magnet and a walking stick, we walked through the field searching for the broken U-joint. After two days of searching, we found it and Wayne welded it back on.

By this time, it had rained buckets. The hay that was down was ruined, and the hay that was still standing was losing feed value by the day. Even with the hay head repaired, there was no way to get 50 acres of standing hay down and stay ahead of the constant showers. So we went to Plan D. We called a neighbor and traded a portion of the hay for his labor. He cut and baled all 50 acres in only a few days, and none of the hay he cut got rained on.

We were relieved that we had solved our immediate problem, but in the days that followed, it became clear that we were going to have to have the talk—the used machinery talk. Is it really cost-efficient to buy used equipment, and how old is too old?

The first thing to consider when buying used farm equipment is the availability of replacement parts. The company that built the Fox chopper went out of business in the mid-80s. Finding new parts is impossible, and finding used parts isn't easy either. While word-of-mouth helped find the replacement hay head, we spent a considerable amount of time on the phone and online looking for parts. When you're counting on the income produced from 50 acres of hay, time really is money. Before you buy equipment manufactured by companies that no longer exist, consider what the consequences would be if it breaks down at a critical moment. When all was said and done, our used Fox chopper cost us somewhere around \$5,000. Not a good deal by any measure.

Another problem with buying equipment manufactured in another century arises when that machinery becomes sought after by antique collectors. If you buy a tractor or piece of machinery that has value on the collector or restoration market, not only can parts be difficult to find, they can be expensive. Fixing up an antique tractor or piece of equipment and then subjecting it to the rigors of field work is likely not a good idea. Sure, it did the job in its day, but its day is long gone.

If you're a small-scale farmer or homesteader, don't rule out buying new equipment. The newer, compact farm equipment is affordable, and service and replacement parts are readily available. The drawback for many is that the newer compact tractors and equipment are so small that working on them yourself requires tools designed specifically for close spaces, which most farmers don't have on hand.

If you do buy older equipment, make sure you have a source for parts before you purchase. Don't rely solely on internet searches. If there is a farm salvage near you, visit them and ask what parts are readily available. If we would have done that one simple thing, we would have known before we purchased the Fox chopper that parts for it are hard to find, and the sprocket assembly on the 2100 routinely fails.

After talking with a small-scale producer who traded in his big tractor and haying equipment for newer, smaller machinery, we decided to do the same. We just can't afford any more setbacks because of old, unreliable equipment. If you depend on your machinery to produce the income that sustains you, going cheap isn't the answer. You don't have to be a scientist to know that sudden stops can have severe financial consequences. When buying farm machinery, take the advice offered Captain Murphy. Check and re-check everything that could go wrong, and then guard against it. ©



The Road Home

BY GEOFF
ROTUNNO
CALIFORNIA

TODAY'S WORLD IS at a lightning pace; only intersections and red lights seem to slow us down. On my workday commute, there are few crossroads to encounter, and sometimes the unbridled pace afforded by the extended thoroughfare makes it hard to remember which way I'm pointed.

The vexation is enhanced by these two facts: With its demand for ever more hours, my job can be like a home away from home, and at home, there's always work to be done.

I'm pretty okay about the blending. I've learned that it's only temporary. I'll probably never eliminate work from the equation, but I know I can always count on certain stop signs to slow me down.

Contemplate the evidence in the following passage from my journal, recorded several months after our first child, my son Oliver, was born:

"I cradle my baby close to me; the silken wisps of his amber hair warm my naked chest. The moonlight escapes the shroud of dampen grey at last and bathes Oliver's cheeks and brow. I cannot see his eyes, which hide in shadow, but I know they are closed.

"I turn for the stairs, the pathway to my wife waiting for our return to the nest above. But I pause, unable to surrender the delicate etchings of my son's dear face. It is a hypnotic pact with a masterpiece far more exquisite than anything in the Louvre, and mine is a heart at war with the paradox all parents must ultimately battle: relentless fatigue in the face of miracle."

Those were weary yet wonderful days, and with this child came a great pause—a crossroads stop from the frenzied pace of everyday life that forced us to fully appreciate the wonder.

Wonder then, about the day when nirvana checked out—or at least threatened to—when we added chickens to the mix—and then horses and goats and cats—and oh yes, let's not forget about that damn dog. Indeed, off to the races we went again, and weary and wonderful was about to become just plain weary.

Thankfully though, plenty of weddings were on hand to help slow the beat. At the top of the all-time list was the marriage of the millennium, the arranged betrothal (arranged by my children) of Fifi and Lulabelle.

F & L were an emotional couple of bantam hens who cared little about what anyone thought, especially the possible ramifications of their same-sex union. More concerned were they, with balance. Every chicken alive knows it: ask a hen to wear an all-day bridal veil, and you're asking for trouble.

On the big day, though, the drama (there's always drama) was less about wardrobe malfunction than it was about cravings.

As most goat owners know, the idea that a goat will eat anything is actually the stuff of urban legend. However, one of the key wedding invitees this day was Hermione, a goat that harbored little discrimination for anything, especially when any one of the five categories of the classic food pyramid was at play.

Fifi's intricate jasmine-bejeweled veil was definitely at play—it held special appeal, and Hermione's lust for it threatened to keep the goat-eating-all stereotype well ensconced.

The hens' ceremony and reception went off without incident, however, testament to the

You can always find comfort at a funeral—in a look, an embrace—in poetry. On this particular twilight, my encouragement came in the form of all three. I was grateful for the generosity.

dumb luck graced to the otherwise useless dog, who was present, again through grace, courtesy of my kids' heartfelt invitation.

For once, the oxygen-sucking canine did his job: he kept the goat at bay. It was, all in all, a wedding to remember, and a lovely red light halt to the daily grind.

Sadly, Hermione met her fateful demise not long afterward, following her scandalous chicken coop break-in and ravenous consumption of a cracked corn cocktail and oyster shell chaser. Her digestive tract virtually destroyed, she lived a scant 12 hours more.

On the day of the funeral, an afternoon darkened by November drizzle, the fallen Hermione lay at the bottom of the grave, and her brave compatriots, Eleanor and Misty (two dairy goat does)—and Fifi and Lulabelle—stood stone-like with quizzical looks and perfect protocol.

The rest of us were bleary eyed, of course, grieving the mischievous adventurer whose endearing exploits finally pushed the envelope one corn kernel too far.

With unsteady voice and a broken heart, my wife framed the ceremony with the words from a Navajo poem:

"Put your feet down with pollen. Put your hands down with pollen. Put your head down with pollen. Then your feet are pollen, your hands are pollen, your body is pollen, your mind is pollen, your voice is pollen. The trail is beautiful. Be still."

You can always find comfort at a funeral—in a look, an embrace—in poetry. On this particular twilight, my encouragement came in the form of all three. I was grateful for the generosity.

Later, as I labored alone in the moonlight, returning Hermione, one spadeful at a time to the dust from whence she came, a brisk wind arrived and the skies began to clear.

Drawn by an unseen force, I suddenly paused, resting both hands on the shovel handle, and gazed to the skies.

Sometimes we see only what we want to see or what we need to see; I'm sure I'm no different than the next guy. Still, imagine the comfort I felt as I looked toward heaven and saw one cloud dominating.

Shaped like a goat, the cloud featured a smaller horseshoe shape within it, mirroring the marking on Hermione's left side flank, a unique coloration reproduced with 100 percent accuracy for me now, courtesy of the gods.

My heart full and task now complete, I added an extra clump of earth to the mound and turned, spade in hand, to rejoin my loved ones inside.

A good night's rest would fit the bill. Tomorrow, Fifi and Lulabelle would climb down from their roost, as always.

All the lights would be green again.

Ultimately, it's but a brief journey on the road home, and the trail is beautiful.

Be still. ☺

Geoff Rotunno is a writer who lives in Solvang, California.

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The Holy Bale

BY MARSHALL
NYCH

MANY MAY BE FAMILIAR with the popular story of the Holy Grail. If not, consider this history lesson a freebie. The Holy Grail was the cup used by Jesus during the Last Supper, and was said to possess miraculous powers. In Arthurian legend, King Arthur's Knights of the Round Table set out on a quest in search of the Holy Grail. Perhaps the most famous of the knights was Sir Lancelot, who was King Arthur's most valiant and trusted man.

Much like Sir Lancelot, I too was in a desperate search of a legend hidden in Pennsylvania's rich countryside. Actually, my focus was on the unmistakable, infamous hay bale. For 20 backbreaking summers on the farm, I searched high and mostly low for the Holy Bale. One dreadful June, my itchy

error and scratchy logic occurred to me. The perfect, Holy Bale was not the lightweight, clean bale of my delusions. In fact, the Holy Bale didn't refer to hay at all. My quest alluded to the bail, as in being bailed out of the work.

On a farm, one frequently could be found behind a tractor, cow or horse. The work was tough. With hay, not only did numbness take over both arms and nostrils, once finished, the numb arms and nostrils were stained green for a week. People pointed, laughed and snapped, "There's that strange farm kid...and he's green!"

Each summer, I tried everything to get out of this cruel labor. My first excuse was using the concept of strength, or lack thereof, to

Baling hay made us young
Nych men old, quickly.
Photo by Marshall Nych



get out of work. I whined to my grandparents, "I'm just not strong enough yet." This genius ploy was hard to prove, for the family had already enslaved my 12-year-old cousin, Jojo. I was a decade older than Jojo, so one can imagine how my plan flopped.

Next, I gripped tightly to the crutch known as health. I figured I could conjure allergic sympathy. I complained, "Achooo! Bummer! Seems I've developed a pretty serious case of hay fever." Again, I didn't have a chance with this feeble attempt. My cousin Jake, who really did suffer from severe allergies, was forced to work and without breaks. Jake put on a dust mask, hooked up to an oxygen tank and merrily baled hay all day.

The elders of the Nych family adopted a convenient philosophy: make the young men do all the work so they could quickly become old men. Personally, half the reason I wanted children was to turn them old while they were still young.

Contrary to positioned on the outside looking in, one who doesn't farm could best be described as on the inside looking out. Such folk, in addition to being extremely fortunate, may have wrongfully assumed the importance of being close and connected to this natural process called "agriculture". This logic couldn't be further from the truth. Being trapped in a dusty, stuffy barn stacking hay, one only becomes more connected with aggravation and respiratory disorders.

For instance, one workday my cousin Silo was enjoying rare downtime between wagon loads. We opted for a breath of fresh air disguised as a ride to check the fields for fallen hay bales. The two of us sat in the middle of a hay field, half cut and raked, the other half still standing. Silo posed the following question, which I'm positive he will regret for years to come: "Hey Marshall, what does hay look like when it isn't in those square bales? I never really got the chance to see it."

I gasped at the realization of how far from truth and reality the laborers had become. It was up to an older, wiser cousin to set him straight.

"Silo," I shared, "you plant special hay seeds."

"You do?" Silo curiously inquired.

"Yes, of course. And when they sprout, they pop up into little square bales," I replied.

"Wow!" exclaimed Silo.

I continued, "With plenty of sun and water, Grandpa waits 'til they're good and plump, then plucks 'em for us to unload and stack."

Silo grinned, "They should call them strawberries or hayberries! Get it?"

Although the grunts know little about the science and details of hay baling, I will offer my best

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Being trapped in a dusty, stuffy barn stacking hay, one only becomes more connected with aggravation and respiratory disorders.

attempt at describing this form of agriculture torture. The painful process begins with a leader of the Nych family, usually a grandfather, father or an uncle. One of these men was automatically groomed to drive the tractor.

Perched upon a throne in an air-conditioned cab, the privileged pulled a full wagon of hay bales to empty-headed Nych grunts.

Next, the fearless, perspiration-free leader emerged from the refrigerated tractor. Typically, the tyrant stayed outside just long enough to remove a wagon pin. Then the crew leader complained, "Boy, sure is hot and sticky out here!" At this point, the ruler returned to the cooled confines and gingerly drove to retrieve another wagon for the grunts.

After this humbling delivery, one grunt unloaded the bales. A second grunt heaved half-ton bales onto a rusty elevator, fully capable of dismembering clumsy limbs. The bales arrived first class to the third, awaiting a grunt who chucked them at two specialized grunts, known as stackers.

Inevitably, the grunts took frustrations with the

leaders out on each other.

One grunt grunted, "No! Do it this way..."

"Faster!"

"Stack 'em tighter!"

"Slower!"

"Stack 'em higher!"

"Too tight!"

"Lower!"

Although worker's compensation and disability were figments of imagination on a farm, there lurked some serious dangers when baling hay. Perhaps the most common danger occurred when a grunt tossed the hay bale below toward the stackers. A rule of thumb was to avoid enlisting disgruntled, maniacal or revenge-seeking tossers. Dodge ball has its place in every self-respecting school curriculum, but dodge bale is both unentertaining and life threatening.

Bales mysteriously landed directly atop a stacker's head, almost as if the poor grunt had

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a bull's-eye on his baseball cap. After regaining consciousness and shaking any concussive side effects, the poor stacker said, "Hay! I mean hey! What did you do that for?"

"Sorry, that one slipped," the tosser lied.

It was commonly understood this pent up rage resulted from never getting to drive the tractor.

The second most common danger was seemingly unavoidable. We spent a considerable portion of the workday with the problem right under our feet—the barn floor. The farmland was thousands, if not millions of years old. All grunts agreed the barn was likely there before the land. It wasn't unusual, while turning toward a fellow grunt to hand off a bale, to find the disgruntled grunt had mysteriously disappeared and had been replaced with a hole. Worst-case scenario, the farmhand had safely fallen into the farm's best cushion, cow manure. This poor grunt's return to work was expected. Best-case scenario, the farmhand violently

crashed through the splintering floor, landing on sharp machinery, breaking both legs. This fortunate fellow was not expected to bale the rest of the afternoon. However, the victim would be asked to keep plans free for tomorrow.

In summation, the Holy Bale is perfect in form and design. Farmers aspire for the Holy Bale, where hay was easily cut and raked on a machine that didn't break down, picked up and baled with a machine that didn't break down, and loaded onto a wagon that didn't break down.

Take it from one who was enslaved every summer, the Holy Bale was never made. The great conservationist Aldo Leopold once said, "Sometimes the best thing to do with land is nothing at all!"

I couldn't agree more. Guess what? Aldo owned a farm. ☺

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

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Win or Lose: Lessons from Life and Livestock

BY ALEXIS
GRIFFEE

CHILDREN AND ANIMALS go together like a hand in a glove. Youth programs that require a child to raise, care for and then show their animals provide invaluable lessons that cannot be taught through other means. In programs like this, children learn responsibility, empathy, forethought, financial responsibility, dedication and sportsmanship. While all of the lessons learned from showing livestock are so vital to the emotional development of children, there has been a tendency as of late to remove one of the main lessons from the experience—the lesson of losing.

One of the best lessons that my child has ever learned was one from when he lost at a livestock show. Before the show he had slacked off on his practicing and gotten complacent. After all, he “knew” he would win! I offered him my sage, cliché, parental advice and it fell on deaf ears. “Practice makes perfect” and even, “You know what they say about assuming things!” were frequent topics of our one-sided conversations. He did not heed my advice. After

all, he had always gotten “something” for participating before! He had always been able to shoot the judge a well-timed, crooked little smile, and since I worked with the fair board, that meant an automatic win, right? Wrong. Come show day, he confidently strolled around with a swagger to his step, he just could not wait to get that ribbon so he could pose for all the photographs and wear it around.

When it was time for the class, he entered the ring, flashed his trademark smile, halfheartedly paid attention and was promptly placed at the back of the line. He lost. There was no big production over his loss, no crying, no tantrum. He just walked out with the realization that he should have heeded my warnings. After his class, my daughter, who was 5, walked in for the peewee division. In contrast to his lackadaisical attitude, she had paid attention, practiced and took everything seriously. She walked out of the ring with second place! She had truly earned her reward, just as he earned his. There was no need for me to say anything. He saw it all, and he understood the consequences of his actions now. Months of me telling him this very same thing had failed to teach him what 10 minutes of experience taught him. Regardless, he still approached the judge after the show, shook her hand and thanked her for her time and help. Was my son disappointed? Of course! However, he gained the realization that day that his actions had direct consequences with his rewards, or lack thereof.

An amazing thing happened that day. After the show, the judge came up to me and apologized to me! I was completely shocked! She was apologizing for not letting my son win when he did not deserve to win! Apparently, other parents had complained about this in the past. It really took me by surprise but brought to light a problem that I see all too often when working with children. We do not allow our children to lose.

About a week after the fair, I heard an adult in a position of leadership among 4-H youth advising that they

A young farmer shows off her cow to judges, audience members and buyers at a 4-H event in New York.

not allow their children to enter another county's fair. The reason given was that, "They only award to fifth place and not everyone wins." I have to wonder where the slanted view of helping our kids came from? Through this mentality, we are telling our children that goals are not important and that hard work will not set you apart. Sometimes the best lessons we can ever hope for our children come from the difficult times, the times of loss, where they are really forced to look at their own actions and see the correlation of the consequences.

A lot of times we are the limiting factor with our children. While the most obvious way that we limit our children is in our words, "You cannot do that yet," we also limit them by falsely propping them up. When done properly, it is not degrading for a child to lose. Far too many shows and programs have shifted toward making "everyone a winner." No matter the placing, the work or the dedication, every child gets a blue ribbon, often with some empty encouraging word like "winner" on it. With policies like these we are not protecting our children, we are robbing them of the life lessons they should be learning. Children should always be encouraged, but not through empty gestures.

We seek to make all of our children as equals, yet at the same time, tell them that they are special and unique. Our actions are in direct contrast to our words! While that comes from good intentions it is damaging. No child is ever the same, and no two children will go about something in exactly the same manner or even see things the same way. It is possible to lift up and encourage the "loser" without lowering the bar or negating the work of the "winner". With some additional planning on the part of show staff, they can find creative ways to build up all of the children without diminishing the accomplishments of the others. In large, sanctioned, adult shows there are often other "prizes" for different categories. Everything from herdsman to best groomed provide opportunities

for the adults to win in several areas. While this is a relatively common practice for adult shows, it is strangely lacking in most youth events.

With classes like showmanship, being in the ring for a livestock competition is the great equalizer. Unlike some other classes, in showmanship, it does not matter how expensive your animal was or how fancy your clothes are. The only thing judged is your dedication. Even if a child has the best animal that money can buy, a good judge will be able to tell if it was properly cared for. Likewise, I have seen some inferior animals win because the care a child took of that animal, which made it shine above the rest.

Every child's effort should be rewarded in a proper way to encourage their personal growth. Instead of telling our children what they cannot do, or falsely rewarding them, we need to let them see what they can do. We need to move past the placating, past the participation ribbons and into letting our children shine as individuals. A child that works hard to be the best should win. Likewise, a child who works hard but had difficulties and was not able to win should also be rewarded, but in a different and meaningful way. Judges should always build up a child. This does not have to be done through a ribbon but through words of encouragement. By giving everyone a ribbon just for participating, you are removing the goal and their desire to improve for the next event.

Another thing that should be encouraged among youth livestock groups is the participation in ethics

training. These classes should be age specific and it should cover all aspects of being a proper showperson. Some competitors turn to things like dyes, unnatural tails, expensive hired groomers and other tactics that give them unfair advantages. By offering an ethics class, and possibly even making attendance mandatory to show, you are provided with a rare opportunity to teach sportsmanship to these kids. It is also through these classes that you can introduce the idea that your show will be an actual competition and not simply a ribbon hand out.

It is no secret that the lessons children learn through livestock are unsurpassed. I challenge all of the youth groups to not only embrace youth and livestock competitions, but also the lessons that they teach our children in their entirety. After all, when we remove these life lessons, what exactly is the point of a show anymore?

As parents and adults in leadership positions, we always seek to support our children through our words and actions. There is always something that can be used as a compliment to a child. By recognizing unique strengths and abilities, we are highlighting their individuality while still building them up as individuals. Likewise, by doing this, you are not bringing down the accomplishments of those who did go above and beyond. However, livestock shows allow unsurpassed opportunities for the children. Sometimes this comes in the form of a win, and occasionally, it is found in a loss. It is an honor to win, but it is more important to win, or lose, with honor. 🍷

Instead of telling our children what they cannot do, or falsely rewarding them, we need to let them see what they can do. We need to move past the placating, past the participation ribbons and into let our children shine as individuals.

Mike Oehler, 1938-2016



DAVID MICHAEL OEHLER, a writer, back-to-the-land hippy, and a pioneer of underground housing and earth-sheltered greenhouses, died Tuesday, Feb. 2, 2016, at age 78, of natural causes at his home near Bonners Ferry, Idaho.

Mike was born January 2, 1938, in Chicago to Chet and Pauline Oehler. He grew up in Wilmette, Illinois, along with his three sisters, Patricia, Gretchen and Sioux. After graduating from New Trier High School, he dropped out of college to pursue his writing career. He served in the U.S. Army before making his way to the West Coast, where he worked as a crew member on fishing boats, worked in the Alaska gold mines, hired on with the U.S. Forest Service, cruised Mexico, and finally ended up in San Francisco where he embraced the hippy movement and lifestyle.

From there, he bought 46 acres in northern Idaho around 1970, where he started experimenting with underground and earth-sheltered housing. Mike always accepted volunteers who helped with his building projects, where they learned organic gardening, permaculture and off-the-grid living. Mike was close to finishing his one-of-a-kind, earth-integrated home he called the "Ridge House" at the time of his death.

At the same time, he continued with his writing, earning international attention with his books, *The \$50 & Up Underground House Book* and *The Earth-Sheltered Solar Greenhouse Book*. He lectured or conducted workshops in Canada, England, Scotland, Belgium, the Netherlands, Germany and 26 American states, frequently under the sponsorship of university architecture departments. He is the veteran of more than 100 radio and television interviews, including HGTV and the BBC. Mike had just finished his latest book *How to Make a Hippy*, due for release later this year. He was also the author of *The Hippy Survival Guide to Y2K* and *One Mexican Sunday*, and the creator of the videos, "The Low-

Cost Underground House Workshop and Survival Shelter Seminar Video Set," and "The Battle of Seattle."

More information about his life's work can be found at www.undergroundhousing.com.

Mike was preceded in death by his father, Chet; his mother, Polly; and his sister, Gretchen. He is survived by his sisters, Pat (Tony) Tiverios and Sioux (Jerry) McLane; his niece, Alex Clemow; his nephews, Mike (Eva) Tiverios and Peter (Lisa) Tiverios; and several great nieces and nephews.

Memorial donations may be made to charities of the donor's choice.

Condolences and memories of Mike may be forwarded to Alex Clemow, P.O. Box 6003, Missoula, MT 59806 or sent by email to e-mail alextrgt@aol.com.



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Two Indispensable Books About Bees

REVIEWED BY
GAIL DAMEROW

HAVING ENJOYED THE PLEASURE OF keeping honey bee hives in my garden and orchard, I have read countless publications on bees and honey production. However, from two recently published books I learned more about bees than from all other sources put together. Not only that, but the details revealed in these books go a long way toward explaining the reasons behind techniques described in the typical honey bee how-to manual.



Every four minutes, as the sun shifts one degree to the west, the bee automatically recalibrates...

THE BEE

The Bee, A Natural History by Noah Wilson-Rich is for anyone interested in bees, the flowers they pollinate, and the products they create. It is extremely well organized, includes loads of fabulous photographs, and is written in short, tightly focused segments that offer two wonderful advantages: If your reading time is limited, you can quickly enjoy one or a few segments within a short period. And if some subjects interest you more than others, you can skip around without losing continuity. Nearly every page includes fascinating and little known facts about bees.

The book starts with a chapter on the worldwide development of bees from the earliest times and discusses in detail how bees have adapted to accommodate the flowers they visit, and how flowers have adapted to accommodate bees. Some bee species are highly specialized in the plants they feed on and pollinate. The author provides the example of the American southeastern blueberry bee, which primarily feeds on blueberry flowers, using its straw-like tongue to suck up blueberry nectar. This bee's real secret, however, is in its buzzing. As it feeds, it vibrates rapidly against the flower's anther to shake off pollen. The pollen sticks to the bee's furry body and is carried back to the bee's nest to provide a food source for developing bees. As the bee travels from blossom to blossom, it also pollinates the next blueberry plant. Thanks to the co-development of bee

and blueberry, these bees are primarily active when blueberry blossoms are abundant.

The 20,000 bee species that have been identified worldwide are classified into nine families, which are broadly divided into three groups based on tongue length—short, medium, or long. The longer the tongue, the better able the bee is to sip nectar from flowers with deep chambers. Long-tongued bees include most of our readily recognizable species, including honey bees, bumble bees, carpenter bees, mason bees, and orchard bees.

The second chapter begins by discussing the uniqueness of bees in their significant contributions to agriculture, science, and the economy. It then offers details on honey bee anatomy, nicely illustrated with a full page close-up photo, and explains how bees use their senses of sight, touch, taste, smell, and hearing. The bee's distinctive genetic system is explained, wherein a male bee has no father but does have a grandfather.

Chapter 3 discusses bee society and behavior. The bees' various social structures range from solitary bees (each female has her own nest and does all the work of gathering resources to feed her offspring) to the complex societies of social bees—such as bumble bees, sweat bees, and honey bees—which divide up the household duties. In this chapter we learn how the worker honey bee's chores change as the bee ages and matures, why honey bees swarm, how honey bees communicate, and how they locate food sources and find their way back to the hive.

It turns out that bees use a different system for short flights compared to longer flights. When navigating on short flights, they rely heavily on their sense of smell to locate new food sources, and on

landmarks to return to the nest. For distant navigation, the sun plays a vital role. Every four minutes, as the sun shifts one degree to the west, the bee automatically recalibrates the sun's direction to determine the ever-changing angle between the sun and the bee's return flight to its hive.

Another interesting discussion in this chapter relates to defenses used by various bee species to protect themselves from predators. Japanese honey bees, for example, use heat as a defense against Japanese giant hornets, which ruthlessly prey on the bees' stores of honey and brood. With its razor-sharp mandibles and poisonous venom, one hornet can kill a thousand or more honey bees in a single raid. Japanese honey bees fight back by the hundreds, surrounding a hornet and rapidly contracting their wing muscles to generate enough heat (117°F) to kill the hornet. Amazing!

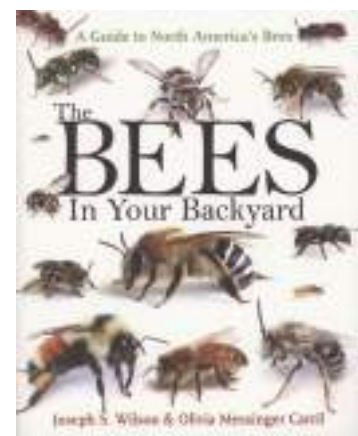
Chapter 4 considers how humans have interacted with bees over the course of several millennia, provides basic information on beekeeping and its economic importance, and discusses the five products made by honey bees—honey, wax, royal jelly, propolis, and venom—and how each benefits both bees and humans. Also discussed is the involvement of bees in scientific research, including a fascinating description of how the United States Defense Advanced Research Projects Agency trained honey bees to detect land mines using their highly refined sense of smell. When one of these trained bees detects the odor of an explosive, it sticks out its tongue.

Chapter 5 offers an introduction to keeping honey bees and other species, how to construct an observation hive, how to harvest honey and other bee products, and how to prevent, create, and capture



The Bee, A Natural History

by Noah Wilson-Rich
Princeton University Press, 2014



The Bees In Your Backyard, A Guide to North America's Bees

Joseph S. Wilson &
Olivia Messinger Carril
Princeton University Press, 2016

swarms. Clear descriptions are included of honey bee pests (wax moths, hive beetles, varroa mites) and infections (American and European foulbrood, chalkbrood, nosema, viruses) with helpful tables for identifying these conditions and for treating them with either chemical or chemical-free options.

A *Directory of Bees*, the title of Chapter 6, offers an overview of 40 of the world's most remarkable bee species organized into four groups: solitary bees, bumble bees, stingless bees, and honey bees. Each section begins with an introduction on the group's general nature, then offers one-page profiles of individual species within the group, including an excellent close-up photo, a map showing the species' distribution, a profile of the bee's actual size, a list of its preferred food plants, its habitat and status, a physical description, and information on its behavior and life cycle. Here you can see the amazing variety of sizes, shapes, and colors bees come in, with some looking less like bees and more like wasps, flies, or ants.

The final chapter outlines the many challenges bees face from climate change and habitat loss, the spread of pests and diseases, and competition from imported bees, to the impacts of various agricultural practices, such as crop rotation, mechanization, and the use of chemical fertilizers and pesticides. Just switching from conventional to organic farming has been calculated to increase the abundance of wild bees by 74 percent and their diversity by 50 percent.

"Bees have pollinated flowers for millions of years, but increasingly they need help from us as we damage their habitats," the author concludes. "Everybody can play a part through something as simple as growing some attractive plants in the backyard. Taking a lesson from the bees themselves, and working together, we can make

a difference in the future of the world's favorite insect."

BEES IN YOUR BACKYARD

The Bees In Your Backyard by Joseph S. Wilson and Olivia Messinger Carril is, as the subtitle suggests, a guide to North America's bees. Unlike *The Bee*, which discusses bees worldwide, this book focuses on the 4,000 species found in the United States and Canada, how to tell them apart, and how to attract them to your yard.

The first chapter, Introduction to Bee Appreciation, indicates where to find bees, how to study them, and how to identify them. Chapter 2, Promoting Bees in Your Neighborhood, explains how to provide bee appropriate habitat and food. The rest of the nine chapters each offer details on how to identify one of the six bee families found in North America plus a final chapter on three families of cuckoo bees—bees that sneak into another bee's nest, lay an egg, and then leave their illegitimate offspring to kill the legitimate bee larva and eat the pollen that was provided for it.

Along the way we learn how to tell the difference between a bee and a wasp and between a bee and a fly—which isn't always easy. We're also offered graphic descriptions of bee predators and parasitoids, much of which reads like a science fiction horror film. We learn why bees are better pollinators than other insects: "Mostly because the number of offspring they leave behind is directly correlated to the number of flowers they visit. They are thus highly motivated to visit as many flowering plants in a day as they can."



One of my favorite parts of this book is how to use your camera to take close-ups of bees so you can study and identify them. Most bees don't sit still for long, and getting one good photo is often difficult, let alone shooting from different angles to get a view of its face, abdomen, wings, and legs which together, with few exceptions, will help you determine at least the genus, if not the species. So, what to do, short of investing big bucks in a high-speed camera?

Here's what you do: Catch a bee in an insect net. (If you don't have a net, the book tells you how to make one.) Put the bee in a plastic container and chill it in your refrigerator until it stops moving, which can take anywhere from 15 minutes to a few hours. Then, before the bee comes to, shoot close-up photos of (or use a magnifying glass or a microscope to get a good look at) the crucial body parts. If the bee is in a clear plastic vial you won't have to touch it. Feeling the sleeping bee's fuzzy body will do no harm, say the authors, but when the bee starts to wake up it can sting!

With most chilled bees, you'll have about 10 minutes before they

fully awaken, although some wake up much faster than others. If a bee starts to come to before you're done looking it over, put it back in the fridge until it is still again. A chilled bee remains alive for anywhere from one to three days, depending on its size—the bigger the bee, the longer it lives while chilled. When the bee awakens and you have finished looking at it, take it outdoors and let it go.

Another part of this book I love is the quick reference guide offering clues as to which species chapter you might find a particular bee described in. This section consists of a series of photos of bees organized by appearance, such as "bees that are yellow and black" or "bees that are metallic green or blue." Pick the photo that looks most like the bee you are trying to identify, and underneath is the

name of the bee and the section elsewhere in the book where it is described in detail. This feature is particularly handy because many bee species don't have common names, so the detailed bee family descriptions are organized by scientific designations, which can be decidedly difficult for a non-scientist to navigate.

Another nice feature is a series of tables listing plants that attract bees, including the months during which each blooms. Seven of the tables are organized by seven regions of the United States and Canada. An additional table lists plants that are easy to grow in all regions, and another lists fruits, vegetables, and herbs that will attract bees to your garden.

As the authors point out, your understanding of bees is beneficial not only to bees, but also to your

garden. And to your livestock. A major food source for dairy cows, for instance, is alfalfa. And alfalfa needs bees to produce seeds. Bees are therefore responsible for the dairy products you eat, including ice cream. Even the vanilla in your ice cream is made possible by bees. So, the authors argue, without bees we'd have no ice cream!

These two bee books are bound to entertain and enlighten anyone who keeps honey bees, maintains a garden or orchard that relies on bees for pollination, or just enjoys watching the incredible variety of bees going about their business in the yard. Be grateful they work so hard, and reward them by being a good bee steward. ©

Gail Damerow enjoys trying to identify the many bee species that visit her Tennessee garden and orchard.

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Middle and Late Summer of 2016

BY W. L. FELKER

I hear the
blackbird in the
corn; The locust
in the haying.

— JOHN GREENLEAF
WHITTIER

THE EPHEMERIS FOR JULY AND AUGUST THE SUN'S PROGRESS

Aphelion, the point at which the earth is farthest from the sun, occurs at 11 a.m. on July 4. Cross-Quarter Day, August 22, marks the halfway point between summer solstice and autumn equinox. The sun leaves Cancer and enters Leo on July 23; it enters Virgo on August 23.

THE CONEFLOWER MOON OF JULY

New moon: Jul 4: 6:01 a.m.
2nd quarter: Jul 11: 9:52 a.m.
Full Moon: Jul 19: 5:57 p.m.
4th quarter: Jul 26: 6:00 p.m.

THE KATYDID MOON OF AUGUST

New moon: Aug 2: 3:45 p.m.
2nd quarter: Aug 10: 1:21 p.m.
Full Moon: Aug 18: 4:27 a.m.
4th quarter: Aug 24: 10:41 p.m.

Lunar Perigee, the moon's most powerful position closest to Earth, occurs on July 1, July 27 and August 21.

Lunar Apogee, the moon's weakest position farthest from Earth, occurs on July 13 and August 9.

THE PLANETS

All the brightest planets share the western sky within the next two months. Venus appears once again, this time in Virgo, after dark on July 14. Jupiter, also in Virgo, sidles up to Venus (the brighter of the two) by the end of August. Mars, also visible in the west in the evening, moves from Libra to Scorpio, approaching Saturn as the summer comes to a close.

THE STARS

In the evenings of middle and late

summer, the teapot-like star formation of Libra lies in the south, followed by Scorpius. Sagittarius comes behind the Scorpion in the southeast. Above Sagittarius, the Milky Way sweeps up to Cassiopeia in the north. At noon, Sirius, the Dog Star, adds its heat and light, tipping the scales to the Dog Days of middle summer.

THE SHOOTING STARS

July 28-29: The Delta Aquarids (near Aquarius)
July 29-30: The Capricornids (in Capricorn)
August 12-13: The Perseids (near Perseus)

METEOROLOGY

Fish, game, livestock and people tend to feed more and are more active as the barometer is falling one to three days before the weather systems that arrive near the following dates on which cold fronts normally cross the Mississippi River: July 6, 14, 21, and 28; and August 4, 10, 17, 21, and 29. Full moon on July 19 and August 18 and new moon on July 4 and August 2 increase the chance of storms.

A CALENDAR OF HOLIDAYS AND SPECIAL OCCASIONS FOR GARDENERS, RANCHERS & HOMESTEADERS

July 4: United States (also Puerto Rico) Independence Day
July 6: Id al Fitr (The Festival of the breaking of the Ramadan Fast)
August 6: Jamaican Independence Day

THE ALMANACK DAYBOOK JULY

1. Transport your animals or your livestock on or about July 11 and 26 when the moon enters its second and

- fourth quarters. Expect trouble at new and full moon: July 4 and 17.
2. Complete the harvest of winter wheat and oats under the dark moon.
 3. Hogs kept inside need plenty of ventilation, and sometimes a good hosing down to keep them cool.
 4. Summer water consumption needs for livestock are between two and three times that of dry food.
 5. When the first ears of field corn are silking, then it's time to bring in the winter wheat and canola.
 6. Squash beetles bore into the squash and pumpkin vines.
 7. Pastures of cool-season grasses stressed by drought early in the summer suffer more severely during stagnant July weather.
 8. Consider developing annual pastures next year that can serve as a supplement to your perennials. Pollen and mold counts rise steadily now throughout the nation.
 9. Some homesteaders use silage corn for grazing as pastures go dormant.
 10. Slowly increase feed to your breeder animals.
 11. Watch for brown spots in the lawn, signs of the sod webworm.
 12. Keep an eye on your animals for problems after you have transported them in the heat to county or state fairs.
 13. When sycamore trees shed their bark, they mark the center of summer.
 14. Livestock (like people) may be more susceptible to disease after a traumatic trip than during their regular day-to-day life.
 15. When mimosa webworms appear on locust trees, potato leafhoppers reach economic levels in the alfalfa.
 16. As conditions permit, seed fall pastures.
 17. Watch for contamination in the water, especially in the chicken house.

18. Late July is the typical time for does and ewes to show first signs of estrus cycling in much of the country.
19. When pokeweed has green berries, expect the Japanese beetles to be at their strongest in the soybeans and roses. The moon is full today, beginning its third quarter.
20. Prepare your enclosures for mating season.
Prepare for August seeding of alfalfa, smooth brome grass, orchard grass, tall fescue, red clover and timothy.
Tobacco toppers often start to top their tobacco now.
21. Drought, heat and age contribute to declining nutritional value in grasses.
22. If your animals keep getting worms, you may have to worm every two to three weeks.
23. As the days shorten, your buck and ram will know it too. You might want to keep them downwind from the does and ewes if you plan to delay cycling in the females.
24. Keep rams and bucks from getting too much heat and, consequently, losing fertility when you want it the most.
25. When the moon enters its weak final phase on July 26, move farm animals to and from the fair or perform routine livestock maintenance.
26. Some farmers have livestock graze the hay fields when the pastures give out.
27. Normal average temperatures start dropping at the rate of approximately half a degree every four days.
28. Make corrective lime and fertilizer applications for August and September seeding.
29. Take advantage of the buck's changing metabolism to encourage the does.
30. The full calls of katydids and crickets mark the advent of late summer.
31. Turnip planters often plant fall turnips (and other root crops mentioned in the SCKRAMBLER), guided by the first blossoms of tall goldenrod and cup plant.

AUGUST

1. Transport your animals or perform routine maintenance on your livestock on or about August 10 and 24 when the moon comes into its second and fourth quarters. Expect more trouble at new and full moon on or about August 2 and 18.
2. Seeding of the lawn is often done throughout August before the cool growing time of fall.
3. Ragweed season spreads throughout the country, especially after the passage of cool fronts.

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4. Cut corn for silage after completing the second and third cuts of hay.
5. A weakening of Dog Day heat often follows the August 4 weather system.
6. Mid-Atlantic and Lower Midwestern peaches are often at their best.
7. Consider supplements for your rams and bucks as breeding nears.
8. After the passage of a late-summer cool front, do your pre-winter cleaning of barn and outbuildings.
9. Pollen counts throughout August are often 10 times as great as in July. Mold counts rise, too.
10. Complete painting and repairs for fall; clean out bedding, water containers and feeders.
11. Elderberries are ready for wine in southern states, and they ripen quickly in the North.
12. Test the soil of your fall garden as well as of the fields in which you intend to sow winter grains.
13. When the violet Joe Pye weed flowers become grey, then peaches, processing tomatoes and peppers are almost all picked.
14. Fertilize perennial plants, shrubs and trees to encourage improved flowering next spring and summer.
15. Rose hips, considered good for the reproductive system of your goats, are forming on the wild roses.
16. Sodding and seeding of the lawn is often done now in preparation for the cool growing time of fall.
17. Sudden cold snaps can now chill your livestock still grazing in the mountains.
18. Pick plums, elderberries, pears, apples, blackberries and everbearing strawberries when the moon is full.
19. When cardinals stop singing before dawn, soybean leaves yellow in the fields.
20. Look for larval feeding scars, a sign of damage from rootworms, second-brood corn borers and second-generation bean-leaf beetles.
21. When fireflies disappear, yellow jacket season begins in the windfall apples and plums.
22. Keep male goats away from the legumes (which may cut down on fertility) as breeding time approaches.
23. When all the summer apples have been picked, then look for the first puffball mushrooms.
24. Chances for light frost increase at higher elevations and in the northern tier of states.
25. Put in trees and shrubs after full moon.
26. Dark moon time is considered favorable for vaccinations,

- surgery, and general livestock (and people) maintenance.
27. When you see more than one Judas maple tree turns orange, then look for hickory nuts to fall.
 28. Harvest, cut hay, pull weeds and do midsummer pruning in the moon's third or fourth quarter.
 29. Check for white flowers in the woods at this time of year; they could be white snakeroot, poisonous to livestock.
 30. When frost hurts root crops, don't feed them to your pregnant animals—the frost may change the composition of the roots, contributing to abortions.
 31. When you see long flocks of blackbirds moving across the sky, then it's time for plums to be the sweetest of the year.

LUNAR FEEDING PATTERNS FOR PEOPLE, FISH AND BEASTS

When the moon is above the continental United States, creatures are typically most active. The second-most-active times occur when the moon is below the earth.

DATE ABOVE; BELOW

- July 1 - 10:** Afternoons;
Midnight to Dawn
July 11 - 18: Evenings; Mornings
July 19 - 26: Midnight to Dawn;
Afternoons
July 27 - 31: Mornings; Evenings
August 1 - 9: Afternoons;
Midnight to Dawn
August 10 - 17: Evenings; Mornings
August 18 - 23: Midnight to Dawn;
Afternoons
August 24 - 31: Mornings; Evenings
August 15 - 22: Afternoons;
Midnight to Dawn
August 23 - 31: Midnight to Dawn;
Afternoons

WINNERS OF THE MAY - JUNE SCKRAMBLER

I received 21 correct responses to the May-June Sckrambler, and a prize of \$6 was promised to the 2nd, 14th, 42nd and 72nd persons to return their correct answers before the those answers were printed in the next issue of Countryside. Jason Gurley of Greenway, AR, was the 2nd correct respondent; and Linda Crawford of Arnoldsburg, WV, was the 14th. And so they win the prizes.

ANSWERS TO THE MAY - JUNE SCKRAMBLER

MEOH	HOME
SDTEAHOEM	HOMESTEAD
NASUTCARY	SANCTUARY
YTREPORP	PROPERTY
ALND	LAND
RUCESYIT	SECURITY
LEFS-SUFICFYCNE	SELF-SUFFICIENCY
EARTHHT	HEARTH
IEAAYWDH	HIDEAWAY
OKRW	WORK
FOF-HET-DRIG	OFF-THE-GRID
MRAF	FARM
NEDGAR	GARDEN
ERUTLCUMAPER	PERMACULTURE
KRAMGNITE	MARKETING
VIVRUSLA	SURVIVAL
VOLE	LOVE
PRENEURERTNE	ENTREPRENEUR
LAMINA BUSHYRDNA	ANIMAL HUSBANDRY
DOOF SERVPRENIOTA	FOOD PRESERVATION

THE JULY - AUGUST SCKRAMBLER

If you are the 1st, 10th, 25th, 66th or the 130th person to return your correct Sckrambler solutions before the answers appear in the Countryside to Poor Will, P.O. Box 431, Yellow Springs, OH 45387, you will win \$6. There should be no typos in this puzzle, and no typo prize will be awarded. If you happen to find a typo, however, you may simply skip that word without penalty.

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TEEBs
SIDARHES
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VCBGAAE
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HaulMaster

LOT 62515
66911 shown

Customer Rating ★★★★★

350 lb. capacity

~~\$58.55~~ **\$22.99** **SAVE 60%**

comp at \$58.55

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WOW SUPER COUPON

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US*GENERAL

LOT 95659 shown
61634/61952

Customer Rating ★★★★★

580 lb. capacity

~~\$349.99~~ **\$119.99** **SAVE \$230**

comp at \$349.99

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42" OFF-ROAD FARM JACK

PITTSBURGH

LOT 60668/6530 shown

Customer Rating ★★★★★

3-1/2 ton capacity

~~\$59.99~~ **\$45.99** **SAVE 23%**

comp at \$59.99

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1/2" ELECTRIC IMPACT WRENCH

CHICAGO ELECTRIC POWER TOOLS

LOT 69606/61173
68099 shown

Customer Rating ★★★★★

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ADJUSTABLE STEEL WELDING TABLE

LOT 63069
61369 shown

CHICAGO ELECTRIC WELDING

Customer Rating ★★★★★

NEW

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comp at \$149.99

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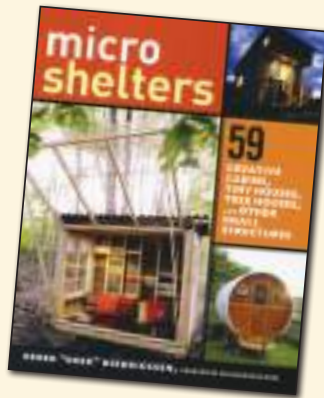
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