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WE DIG DIRT



Circle #10; see card pg 81





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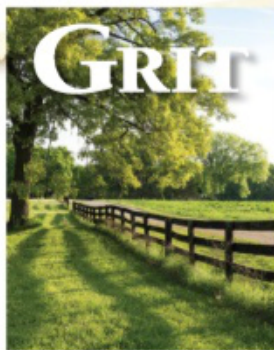
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Photograph: Getty Images/Marcia Straub  
Cover Design: Matthew T. Stallbaumer

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## SPRING IS A PHOENIX

■ We look forward to spring because it's loaded with signs of rebirth, including sweet-smelling blossoms and moist garden soil under our fingernails.

I think of those things, too, when the season approaches. But what really brings me pleasure in spring is the destruction and rebirth set alight by prairie fires. If you live in a prairie state, you know the skies are hazy and the air smells smoky in March and April, when Midwestern ranchers set their pastures ablaze. We prairie folk expect these prescribed burns and, if we suffer from asthma, we sometimes curse them.

Fire is important to the prairie ecosystem. Burns control nonnative, invasive weeds, trees, and shrubs—such as the Eastern red cedar—which will take over pastures if left unchecked. Flames remove the previous years' heavy mat of dead grass, making it easier for the reappearance of those delectable green shoots preferred by cattle. And prairie grasses' root systems—up to 12 feet deep—protect them from the fire's intense heat.

Grassland fires have occurred naturally for millennia. At first, they were caused by lightning strikes, and later, by wayward campfire sparks. When Europeans first settled these lands, they assumed prairie fires needed to be stopped, and did everything within their power to do so. But, gradually, our ancestors realized that wild bison and domesticated cattle alike preferred eating the fresh spears of grass that sprouted after a spring fire, helping them to gain weight quicker. Maybe these raging fires served a purpose after all, they observed; if only they could be controlled to save houses, barns, livestock, and crops.

Over the years, ranchers have developed specialized tools and techniques to manage their burns. Here in the tallgrass prairie, they use handmade devices called “firesticks” or “firepipes”—long, capped pipes filled with gasoline—whose ends are lit and dragged across patches of pasture. Under favorable wind and moisture conditions, small crews of neighbors work together to light the dormant grasses and keep the flames under control. It's a thrill to watch them in action. Within a week or two, the blackened patches will be tinged green with new growth.

Today, scientific evidence backs up fire as essential to the prairie. Even foresters, who once believed all fires were detrimental, have embraced controlled burns as an important management tool for forest ecosystems.

Soon, I'll be driving through the grasslands, and I might get lucky enough to see a rancher on an ATV with a firestick dangling behind, drawing a fiery line on the hills beneath the stars. What's your favorite spring tradition? Email me your stories at [RMartin@Grit.com](mailto:RMartin@Grit.com).

Rebecca

Rebecca Martin, Group Editor, Rural Lifestyles  
[RMartin@Grit.com](mailto:RMartin@Grit.com) @RebeccaGrasslands





# DON'T LET 'EM GET YOUR GOAT

When I was in seventh grade, I went through a rough patch in my life. I didn't really have any friends, I was often bullied, and I needed a healthy distraction. When a new member joined my 4-H Club, I signed on to her goat project. I fell in love with the goats instantly, and told my mom I wanted one. She quickly pointed out that farm animals weren't allowed within the town limits. Later, someone encouraged me to petition the village board to be able to keep goats in town. So, I wrote a letter to the board, and presented my proposal.

I tried to change the city ordinance so I could raise three goats and five chickens in town. Though the board denied the request, one member suggested I apply for a conditional use permit instead. I presented information and answered questions from the board members and the community during two meetings spanning 2 to 3 months. When it finally came time for the board to vote, I was a nervous wreck. The final vote was 4-2 in my favor.

Ecstatic, I spent the next month searching for breeders to find the perfect goats: an American Alpine I named Alanna, and Brooke, a Nigerian Dwarf. From that moment on, through my senior year of high school, I raised these goats and showed them around the state of Wisconsin. Showing goats exposed



me to new people, and I made a lot of friends from all over the U.S., as well as at school, where I joined the Future Farmers of America (FFA). My goats and I were featured on a local news channel, and our story was published in a magazine. I continued showing them at the county and state fairs in Kentucky, and even took them to a national competition.

Those on the outside have often viewed my dedication to showing goats as simply a hobby, but they couldn't be more wrong. They don't see what goes on behind the scenes; they only see a goat ready for show. They didn't see me cry when the goat I'd won through an essay contest died. They didn't see the girl who sat in the barn for days waiting for her favorite goat to kid, and how it wasn't an easy labor.

Why am I bringing all of this up? Because this journey, with all its ups and downs, quite honestly saved my life. Showing goats wasn't just a

hobby for me; it was a huge part of my life.

My life has followed a different path than I first thought it would. I'm now in my third year of studying Hotel, Restaurant, and Tourism Management and Golf Enterprise Management. I also have a minor in Spanish. On the day I donned my blue FFA jacket for the last time to receive my American FFA degree — the highest honor the FFA bestows — I knew it was the last page of this chapter in my life. It's tough to swallow that this chapter is officially closed. But I can look back at my journey and smile, because without it, I don't know that I'd be who I am now — a successful college junior with a bright future. Those of you who have a passion to pursue, don't let anyone "get your goat." Stand tall, and be proud of what you're doing.

RACHAEL LEYSTRA  
CAMBRIA, WISCONSIN



## Baling Wire and a Pair of Pliers

After reading Rebecca Martin's "Space Junk" editorial (November/December 2019), I was reminded of my Dad's own inventive tinkering. He grew up when the phrase "he can fix anything with a piece of baling wire and a pair of pliers" described the consummate handyman.

On one occasion, my dad received news that my sister had lost control of her car, gone off the shoulder, slid down a sloped bank and through a fence, and ended up in a junkyard. He assessed the wreckage and proceeded to make the most of it, building what would become a "Goliath." He stripped off the car's body, leaving just the frame, drivetrain, and front seat. He then mounted a hydraulic hoist where the back seat used to be. It resembled a mini tow truck. Because Dad had a truck repair business, this new vehicle was perfect for throwing a chain on the hook, and lifting motors out of trucks when he needed to rebuild them. Of course, it also helped him transport the engines easily around the shop. It didn't look like much, but, like most things Dad made, it was functional.

NEBRASKA DAVE  
OMAHA, NEBRASKA

## Opossum Precautions

I just finished reading Jo Ann Abel's "The Misunderstood Marsupial" article (September/October 2019). I found it very interesting and informative, but was surprised she didn't mention the connection between opossums and a debilitating nervous system disease in horses called equine protozoal myeloencephalitis (EPM). The opossum is the definitive host of this disease, passing on the parasite in its feces. If the horse ingests the parasite while grazing or eating hay contaminated with opossum feces, it'll develop lesions in its brain and spinal cord. There's no cure for EPM and horses don't fully recover from the disease. I respect opossums for their contributions to Mother Nature, but I also recognize the dangers they present to horses.

ETHEL RICHARD  
AMBOY, ILLINOIS



## From Scrap to Scarecrow

In response to Rebecca Martin's "Space Junk" editorial (November/December 2019), I'm proud to report my latest invention. Deer and rabbits kept coming into our garden during the growing season, eating our strawberries and the tops off the perennials, so I pieced together a scarecrow. He's made out of some pallets and scrap tin I had lying around. I used a couple of old 2-by-4s for arms, and an unusable 2-gallon bucket for his head. I later added gloves and eyes. As an added bonus, he "talks"! He sports a hidden compartment that houses a radio. We love our new garden addition. Since he's been out there, we haven't had any more issues with deer or rabbits!

JASON GLEASON  
COLDWATER, MICHIGAN

## Tom, the Neighborhood Turkey

Not too many neighborhoods have a wild turkey to brag on, but we love ours here in the north Georgia mountains. He showed up last July, and at that time there were two of them, but they were still so young that we couldn't tell if they were male or female. A neighbor down the road fed them. All he had to do was call and they came running, or rather, flying. At night they'd disappear into the woods to roost.

After a while, there was only one left, and it soon became apparent he was a tom turkey. He started making daily rounds to all the neighbors. We tried to hand-feed him, but he kept his distance, and often

## Looking For

### SEWING MACHINE BOOKLET

I'm looking for an instruction booklet for a 1960s Singer sewing machine that does embroidery. Will pay.

Ann Limbert  
2785 Glaston Way  
Milton, GA 30004-5105

### STATIONERY

I'm seeking people who'd like to swap stickers, stationery, and postcards.

Darlene Kursinsky  
127 Mills Street  
Croswell, MI 48422-1126

### TIPS FOR GROWING CAULIFLOWER

We planted self-blanching cauliflower, and would like tips on how to keep it white without it turning purple.

John Hoover  
2268 Friend Road  
Penn Yan, NY 14527-9205

### HEALTH PRODUCTS

We'd like to hear from people who share our passion for chemical-free, environmentally friendly health products.

The Millers  
115 Van Alstine Road  
Mohawk, NY 13407-9205

### SLEIGH BELLS

I'm looking for brass sleigh bells since mine were stolen. They remind me of the Belgian horses that neighed as they pulled our sleigh.

Ms. Goldie Buckner  
300 Valencia Drive, Southeast  
Albuquerque, NM 87108-2090



### PEN PALS

I'm almost 80 years old, and would love to have pen pals from all walks of life. Let's talk via the inky trail.

Connie Rose Frey  
497 Wallace Street  
Northumberland, PA 17857-1146



ran off if anyone tried to get too close. So, now we feed him corn that he shares with our chickens, and one neighbor gives him popcorn. He loves to range in the vineyard up the hill.

He'll often stand in the middle of the road, refusing to move to let cars pass, and sometimes he even chases them. It's hilarious to watch. One day, we noticed quite a few feathers on the side of the road with no sign of him. For a few days, we waited for him, and eventually assumed he'd met his fate and been hit by a car.

Then, lo and behold, after a week or so, he showed up, but he couldn't fly. He still runs like the wind and gets up about a foot off the ground, but he can't soar through the air like he used to. Many days, he'll perch himself on our fence, and spend the day there, watching traffic and preening his feathers. He'll come around for a few days, then disappear for four or five days, and then return.



Sometimes, when he's on the road, people will stop and tease him, which I think has given him a bit of an attitude. He stands about chest-high to me, but I

don't turn my back on him. One day, he chased me around a signpost. I was scared to death, but my husband finally came and chased him off. His head turns blue and his snood gets long when he's angry. But most of the time he's happy to see us, and we love to tell him how handsome and beautiful he is. He responds with his turkey noises and approaches within 3 to 4 feet of us.

Many people will stop and talk to him or take pictures. He isn't much of a poser, but if you can trick him, you can get a good shot. We're happy he's become our new friend.

ARLENE JENNESS  
BLAIRSVILLE, GEORGIA

## Share Your Thoughts

We welcome letters from our readers. If you'd like to comment on an article, share your opinions, or submit a "Looking For," send us an email (with photos, if available) to [Letters@Grit.com](mailto:Letters@Grit.com), or send a letter via the USPS to: GRIT Mail Call, 1503 S.W. 42nd St., Topeka, KS 66609. Electronic submissions are more likely to generate a timely response.

ARLENE JENNESS

# Saw your own logs into lumber

"What a feeling of accomplishment and pride to transform trees into a meaningful and purposeful structure. With your own sawmill and your imagination you can build just about anything."

—Michael Huck  
Horticulturist, Outdoorsman, Sawmiller



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# WIT & WISDOM

from *The Old Farmer's Almanac*, always 'useful,  
with a pleasant degree of humor'



## Perennial Powerhouses

Imagine planting a garden that supplies bountiful harvests for 10, 15, or even 20 years without replanting. Of course, most vegetables aren't capable of this longevity, but a few perennials can add dependable yields to your garden year after year.

Asparagus spears can be cut or snapped off at ground level when they're 6 to 8 inches high. It's important to let some of the shoots grow into feathery foliage to help produce food for the roots. Asparagus can be picked for up to eight weeks once the bed is mature.

Rhubarb is grown for its tasty stalks, which can be harvested throughout the growing season by simply pulling them from

the clump. To ensure new stalks keep coming up, don't harvest the entire plant at once.

Horseradish is a spicy addition to any garden, and there's no comparison between freshly prepared horseradish and the preserved store-bought versions. To make the condiment, dig up fresh roots in the fall after the tops have died, peel the root and grate into a bowl, mix with vinegar to desired consistency, and serve.

Jerusalem artichoke can be baked, fried, mashed, or used raw in salads. Cold weather actually improves the flavor of these knobby tubers, so harvest them after a frost, or leave them in the ground until the following spring.

## Best Days

### ■ Plant aboveground crops:

March 4, 5, 31; April 1, 2, 27-29

### ■ Plant belowground crops:

March 12, 13, 21-23; April 9, 10, 18, 19

■ Set eggs: March 10-12; April 6-8, 15, 16

■ Go fishing: March 1-9, 24-31; April 1-7, 22-30

## Calendar

### March 8: Daylight Saving

Time begins

9: Full Worm Moon

19: Vernal Equinox

26: Chipmunks emerge from hibernation

April 7: Full Pink Moon

12: Easter Sunday

19: Orthodox Easter

29: Poplars leaf out

## Blueberry-Rhubarb Jam

Yields 4½ pints.

2¼ cups fresh blueberries

2¼ cups diced fresh  
rhubarb

2 tablespoons lemon juice

7 cups sugar

2 packages (1¾ ounces  
each) fruit pectin



1. In a large kettle, crush blueberries, and then add rhubarb, lemon juice, and sugar. Bring mixture to a

rolling boil, and boil for 1 minute. Stir in pectin. Return to a full rolling boil, and boil for 1 minute more.

2. Ladle jam into hot, sterilized jars. Seal and process the jars in a hot-water bath for 15 minutes.



*The Old Farmer's Almanac Vegetable Gardener's Handbook* is available now at your local bookstore, as well as at [www.Almanac.com/Shop](http://www.Almanac.com/Shop). Whether you've never touched a trowel in your life, or you've been harvesting at home for decades, you'll reap the benefits of having this guide!

## Skywatch

**March:** Mars, Jupiter, and Saturn bunch together in a line starting on the 17th. The waning crescent moon joins on the 18th. The three planets, minus the moon, again form a nice grouping from the 28th to the 31st. The vernal equinox—the earliest in 124 years—falls on the 19th.

**April:** The year's closest moon is on the 7th. Saturn and Mars, very close together on the 1st, have crossed into Capricornus, with Jupiter lingering to their right in Sagittarius. Venus, in Taurus, reaches its brightest and highest at a shadow-casting magnitude -4.7; it sits above the moon on the 25th and to its right on the 26th.



# Catching Up with Our Social Circle

**f** JOIN THE CONVERSATION

## What are some reasons to consider making your own bread?

([www.Grit.com/Bake-Your-Own-Bread](http://www.Grit.com/Bake-Your-Own-Bread))

**Dave Lopez:** I like to make my own breads and sauces because I know what I'm putting in them, and there are no additives. Plus, it's just fun.

**June Butler:** I do it to keep the sugar and salt out. My bread requires real unsalted butter, water, half-and-half, yeast, all-purpose flour, and high-gluten flour.

**i** POPULAR ON GRIT.COM

## "Tie the 10 Most Useful Knots"

by GRIT Staff

Binders and ratchet straps have made it so you can get through life without needing to know how to tie any but the most rudimentary of knots, but sooner or later, you'll find yourself with a load that needs securing and only a hank of rope to get the job done. Before you get started with knot tying, it's useful to learn a little of the language.

■ **HITCH:** Category of knot used to attach a single rope to an object.

■ **BEND:** Category of knot used to join ropes together.

■ **BITTER END:** The end of a rope that's being manipulated. In the case of a rope that's hitched to a well bucket, the bitter end is that which isn't attached to the bucket.

■ **STANDING PART:** The segment of the rope that you aren't using at the moment. It can be coiled, stretched, or otherwise left inactive.

■ **BIGHT:** An arc in the rope. This can be a semicircle or a loose loop through which the bitter end may run.

We've picked out 10 of the most versatile knots to help you handle just about any situation that requires you to fasten two objects together, secure one line to another, or tie a rope to a solid object.

Learn more about tying effective knots at [www.Grit.com/Knots](http://www.Grit.com/Knots).



**f** Featured Comment

*I've split wood forever.* I heat my home with wood. It's great exercise, it's fun, and it's great for stress and frustration relief and for being outside.

—Becky Coe Garn, via [www.Facebook.com/GritMagazine](http://www.Facebook.com/GritMagazine), on "Splitting Firewood Properly & Efficiently"

### Our Readers

50%

enjoy building their own furniture



52%

are planning a homestead



54%

are interested in natural beauty tips and products

**B** READER BLOGS

## "Is Landscaping a Smart Side Hustle for Your Homestead?"

Many homesteaders are looking for ways to diversify their income and make the most of the tools and skills they possess.

For some, landscaping may seem like the natural choice, since they're already familiar with the great outdoors. Why not go for something you're skilled in?

Lawn care can be an excellent source of additional income, but like any business, it requires patience, motivation, and financial smarts.

—From Farm Estate Update by Holly Welles

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**P** INNER CIRCLE

## Look at our top trending posts



Slow Cooker Venison Stew Recipe



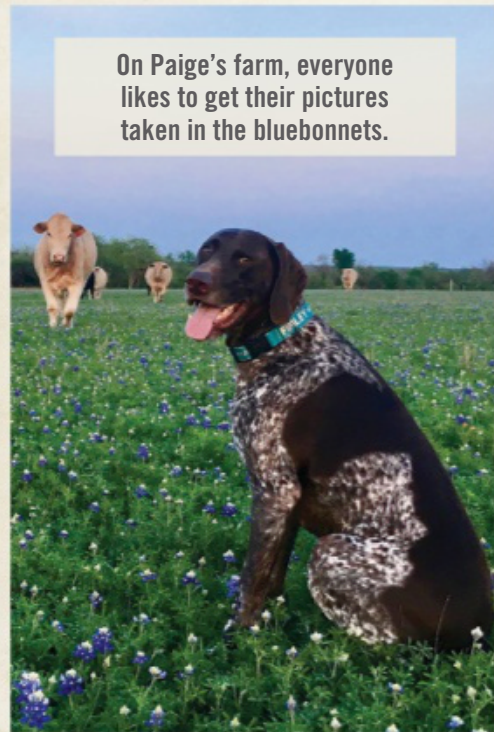
My Fruitcake Adventure



Jennifer raises heritage Gloucestershire Old Spots pigs on a sustainable farm.



On Paige's farm, everyone likes to get their pictures taken in the bluebonnets.



## Animal Friends

Share your visual perspective  
with the GRIT community.

Post your photos at

[www.Facebook.com/GritMagazine](https://www.facebook.com/GritMagazine),  
or tag us on Instagram (@Grit1882).

We chose several of the images you see here  
from those platforms, and you can  
find more within the blogging community on  
our website. Share your best shots,  
and we just might select one of your photos  
for a future issue of the magazine.

To admire even more readers' photos,  
visit [www.Grit.com](http://www.Grit.com).

Kylie's family cow Mia is  
soon to be a dairy cow.



Allison's twin Tunis lambs  
stay cozy in their sweaters.



Dawn's Dewlap Toulouse  
geese were born and raised  
on the farm.



Katie's animal friends show  
that sharing is caring,  
no matter the species.







# START A PROFITABLE JAM AND JELLY BUSINESS

Learn how to preserve your independence and stock up on money by making fruit spreads to sell. *By Renee Pottle*

■ If you're a canning aficionado and like to put up juicy berries, sweet peaches, and crisp apples, you could be earning extra cash with your preserved spreads.

According to the Specialty Food Association, jam and jelly sales totaled more than \$228 million in 2016. Many people yearn for the days when food was home-grown, homemade, and full of recognizable ingredients, yet the pace of modern life leaves little time for cooking. People with traditional canning skills can fulfill this desire for homemade food by starting their own jam- and jelly-making businesses.

Operating a jam- or jelly-making business has unique benefits. It can be large or small, and operated part time, seasonally, or year-round. Unlike other food-based businesses, there's minimal infrastructure required; in most states, you can make jams, jellies, and other preserves in your own home kitchen. Also, as a low-risk product, soft spreads have fewer startup safety hurdles than other food-based businesses—and it's a profitable way to use up excess orchard or garden produce.

If the thought of starting a business seems overwhelming, don't worry. The process is simple when taken step by step.

## A Delectable Selection

First, decide which products to sell. Think about the soft spreads you know how to make, and those you enjoy preparing. If making jelly fills you with joy, then you should definitely consider producing and selling jelly. But if you hate this time-consuming process, opt for jam, fruit butter, preserves, or marmalade instead.

If you can't decide on a product, consider your main ingredient. For example, if you own an orchard with surplus apples, choose apple butter. If you don't grow any fruit on your property, maybe you live near a commercial farmer who will happily sell you excess fruit. Perhaps the local U-Pick farm will give you a discount if you pick in bulk, or a fruit-packing house will give you scarred or "ugly" fruit. Seek out opportunities to reduce raw product costs.

Next, determine which specific products you'll offer, starting with a few related soft spreads. Customers naturally compare two or more items before purchase, so it's always a good idea to offer a couple of choices. While more than four options might overwhelm both your startup budget and your customers, three or four different soft spreads provide tantalizing choices, as well as limiting the ingredients you must keep in stock. You could start with apple butter, apple preserves, and spiced apple jelly; peach preserves, peach jam, and peach syrup; strawberry jam, blueberry jam, and blackberry jam; or a similar trio.

Show how your product is special with a unique selling point (USP). Your USP is the common thread throughout all of your marketing efforts, and sets you apart from the competition—for example, using only organically grown fruit. A common USP is price, which can be low (like Walmart) or high (like Tiffany's). The best USPs for specialty jam products are:

**Artisan:** These are high-quality, handcrafted products. You, for example, might package your product in an ornate jar with an elegant label.



**Nostalgia:** These products recall flavors from long ago, reminiscent of Grandma’s chokecherry jelly or wild rose jam. Old-fashioned fonts and brown paper labels are reminiscent of bygone days.

**Local:** Use regionally specific, locally sourced produce to make these products, such as key lime marmalade, cactus jelly, or huckleberry jam.

**Unique Flavors:** Feature creative and unusual flavor combinations, such as peppermint crab apple jelly or passionfruit jam.

## Become a Certified Canner

Of course, a business doesn’t get off the ground in one day. To start a new business, you must meet various legal requirements.

Each state has a different startup process, but all follow a similar path. First, you must obtain a local business license from your town office or state licensing agency. A business license clarifies municipal code requirements and approves the type of business in the desired location. A food-specific business, however, requires additional licenses. So, next you’ll need your state’s version of a food worker card or permit.

If you make your jams at home in a cottage industry business, the local health department will inspect and approve your kitchen. If you prepare your products in a commercial kitchen, you’ll need a food processor license from your state’s department of agriculture. Luckily, this isn’t as confusing as it sounds. While some states have many rules and regulations surrounding food businesses, soft spreads are considered low-risk foods. As a result, it’s easy to manage the process no matter where you live. To find out if you can legally make homemade fruit spreads for sale within your state, visit [www.Forrager.com](http://www.Forrager.com).

While it’s fun to experiment with different jam ingredients, sadly, our favorite combinations might not be approved for public consumption. Making jelly from excess bottles of wine,

for example, requires a state liquor license, and home production almost certainly won’t be allowed.

The fruits the federal government classifies as “low-risk” are usually high in acid. This list includes almost every commonly known fruit, such as apples, grapes, and peaches for fruit butter; pineapple, strawberry, and cherry for jelly; and blackberry, tangerine, and plum for preserves or jam. The federal guidelines also tell us which ingredients can be added to soft spreads (pectin, sweeteners, spices, preservatives). When submitting your state licensing application, include your specific recipes.

Some states require additional recipe testing, especially for lower-acid products, such as pepper jelly, or

conserves, or if your proposed recipe uses an uncommon ingredient. Most land-grant universities—there’s one in every state—will test both your recipe and the production process for a nominal fee.

These decisions become easy when taken one step at a time. If you follow them, your business should be up and running in three or four months. But don’t forget: If you already understand soft spreads and the jam-making process, you have a big jump on the competition. Your jam jars will be filled with cash in no time! 🍯

*Renee Pottle writes about food preservation, food businesses, and gardening from her home in Kennewick, Washington. She’s the author of Creative Jams and Preserves.*



## Practical Considerations

Here are a few other considerations when setting up your own jam- or jelly-making business:

- Will you make your products in a home kitchen, certified rental or incubator kitchen, or a commercial kitchen?
- Where will you sell your products? Will you sell retail at farmers markets, craft fairs, and farm stands? Or will you sell wholesale to local stores and restaurants, or through a specialty food distributor?

■ As a small food business, you don’t need to include nutrition information, but your labels will need an allergen statement, product weight, and location address.

■ You’ll need liability insurance. Shop around for an agent who understands small food-based businesses. Most policies cover \$2 million, and are fairly inexpensive.

■ What are your marketing ideas? Start with at least a basic website and one social media account to reach prospective customers.





Asian Ham Quinoa Bowl

## HOORAY FOR HAM

Incorporate this savory meat into a variety of recipes to create simple and delicious meals.

*Story and photos by Valerie Boese*

■ Baked ham is a popular main course, but don't forget its versatility when added to everyday dishes. Its succulent flavor can quickly turn ordinary fare into extraordinary meals. Ham can jazz up a variety of foods, including soups and stir-fries. Ham added to a simple pasta recipe makes for a scrumptious dish, and adding it to a stuffed baked potato is sure to bring a smile.

Leftover ham comes in handy to create quick, no-fuss meals on busy weeknights. It's also a good way to stretch a dollar, because a little bit of ham goes a long way.

Here are some terrific—and extremely tasty—ways to add the savory flavor of ham to your meal planning.

### ASIAN HAM QUINOA BOWL

Vary the ingredients of this heart-healthy dish by trying rice instead of quinoa, or substituting cabbage instead of kale. **Yields 4 servings.**

- ¼ cup rice vinegar**
- 2 tablespoons soy sauce**
- 1 cup chicken broth**
- 1 teaspoon sesame oil**
- ⅓ cup creamy peanut butter**
- ½ teaspoon grated fresh ginger**
- ½ cup sugar**
- Dash of hot pepper flakes**
- 2 cloves garlic, minced, divided**
- 2 tablespoons cooking oil**
- ½ cup diced onion**
- 1 cup diced carrots**
- 1 cup diced celery**
- 1 cup chopped kale**
- 1 red bell pepper, cut into 1-inch pieces**
- 1 cup fresh snow peas in pods, stringy tips removed**
- 1 cup coarsely chopped ham**
- 1½ cups cooked quinoa, white or tricolor**
- ½ cup shredded coconut, toasted**
- ½ cup dry roasted peanuts**
- ½ cup finely chopped fresh cilantro**

**1.** In a medium-sized saucepan over medium heat, blend vinegar, soy sauce, broth, sesame oil, peanut butter, ginger, sugar, hot pepper flakes, and half the garlic with a wire whisk. Simmer for 20 minutes, stirring occasionally.

**2.** Heat cooking oil in a large skillet over medium heat until hot. Add onion, carrots, and celery, and stir-fry for 3 to 4 minutes. Add kale and remaining garlic, and continue stir-frying for another 2 minutes. Add red pepper and snow peas, and stir-fry for 3 additional minutes. Stir in ham and quinoa, and cook for 4 minutes more.

**3.** Serve quinoa mixture in individual bowls, topped with several spoonfuls of sauce, along with toasted coconut, peanuts, and cilantro.

**NOTE:** To make delicious quinoa, follow the instructions on the package, but use chicken broth instead of water, and add 1 tablespoon of butter.



## FETTUCCINI CARBONARA WITH HAM

Carbonara is customarily made with pancetta, an Italian version of bacon. This recipe uses leaner, easier-to-find ham. **Yields 6 to 8 servings.**

**16 ounces fettuccine or other pasta**  
**2 large bay leaves**  
**1 cup cooked, diced ham**  
**2 large eggs, room temperature**  
**¼ teaspoon salt**  
**Dash of black pepper**  
**1 cup grated Parmesan cheese,**  
**plus more for serving**  
**3 tablespoons olive oil, divided**  
**2 cloves garlic, minced**  
**Chopped fresh parsley**  
**Chopped fresh basil**

1. In a large stockpot, cook pasta according to package directions, adding bay leaves to the water. Drain, and reserve ½ cup water.
2. Heat ham in a large skillet over medium heat until browned, about 4 to 5 minutes, stirring often. Transfer ham to a plate.
3. In a mixing bowl, stir together eggs, salt, pepper, and Parmesan. Set aside.
4. In a large bowl, toss pasta with 1 tablespoon olive oil. Set aside.
5. Add remaining olive oil to skillet, and heat over medium-low heat. Add garlic, and cook for 1 minute, being careful not to brown it. Stir in pasta and ham, and cook for 5 additional minutes, stirring occasionally.
6. Reduce heat to low, and add egg mixture and reserved pasta water. Toss to coat pasta, and simmer, stirring occasionally, for 5 minutes.
7. Garnish with parsley and basil. Serve with additional Parmesan to the side.

## HAM ALFREDO RIGATONI

Here's an easy, 30-minute meal to serve your family. **Yields 6 servings.**

**12 ounces rigatoni or other pasta**  
**2 bay leaves**  
**2 tablespoons olive oil**  
**4 cups coarsely chopped broccoli**



Fettuccini Carbonara  
with Ham

**2 tablespoons butter**  
**⅔ cup sour cream**  
**5 ounces cream cheese, room temperature**  
**1½ cups whole milk**  
**½ teaspoon salt, plus more to taste**  
**Black pepper, to taste**  
**⅔ cup grated Parmesan cheese,**  
**plus more for serving**  
**2 tablespoons plus 2 teaspoons sherry,**  
**white wine, or chicken broth**  
**2 tablespoons finely chopped fresh parsley, or 1 teaspoon dry,**  
**plus more for serving**  
**2 cups cooked, coarsely chopped ham**

1. Cook pasta according to package directions, adding the bay leaves to the water. Drain.
2. In a large bowl, toss pasta with olive oil. Cover, and set aside to keep warm.
3. Place broccoli in a 2-quart saucepan, and add enough water to cover. Bring to a boil, and boil for 3 minutes. Remove from heat, and let broccoli stand in water for 3 minutes. Drain.
4. While pasta and broccoli are cooking, melt butter in a large skillet over low heat. Add sour cream, cream cheese, milk, ½ teaspoon salt, a dash of pepper, and Parmesan cheese, and



Ham Alfredo  
Rigatoni



## Ham Omelet Bakes



whisk until smooth, about 5 to 7 minutes. Stir in sherry, parsley, and ham, and cook for 4 minutes, or until creamy and somewhat thick. If sauce becomes too thick, stir in a little additional milk.

5. Add broccoli and sauce to pasta, and stir to combine. Season with additional salt and pepper, if desired. Garnish with additional parsley, and serve with additional Parmesan.

### HAM OMELET BAKES

These little omelets can be served hot from the oven, or made ahead for a scrumptious breakfast on the go. **Yields 4 servings.**

**3 flour tortillas (7-inch diameter)**  
**Cooking spray oil or butter**  
**2 cups peeled, diced potatoes**  
**4 tablespoons cooking oil, divided**  
**1 cup cooked, diced ham**  
**¼ cup diced onion**  
**⅓ cup diced red pepper**  
**⅓ cup diced green pepper**  
**6 eggs**  
**2 tablespoons whole milk**  
**Salt and pepper, to taste**  
**½ cup shredded sharp cheddar cheese**  
**¾ cup shredded Swiss cheese**

1. Spray both sides of tortillas with cooking spray oil, and then cut each into quarters.

2. Place 3 tortilla quarters, pointed end down, in each of four 8-ounce ramekins, overlapping them slightly to form a crust.

3. In a 2-quart baking dish, toss potatoes with 1 tablespoon cooking oil. Cover dish, and microwave on high for 6 minutes.

4. In a large skillet over medium heat, warm 2 tablespoons oil. Add potatoes, and cook until slightly browned. Add ham, and cook for an additional 4 minutes. Transfer mixture to a large bowl.

5. Preheat oven to 375 F.

6. Heat remaining oil in same skillet. Add onion and peppers, and sauté for 3 to 5 minutes, or until partially soft. Add to potato-ham mixture.

7. In a large bowl, whisk together eggs, milk, and a little salt and pepper. Stir in cheeses, and add to potato-ham mixture. Stir gently to combine.

8. Divide mixture evenly among crust-lined ramekins.

9. Bake for 20 to 30 minutes, or until a toothpick inserted in the center comes out clean.

### HAM PEPPERONI CALZONES

Calzones can be made a day ahead, and heated before serving. This recipe makes 5 calzones, but they're so large, one may be enough for two people. **Yields 5 to 10 servings.**

**1½ cups warm water (105 to 110 F)**  
**2¼ teaspoons yeast**  
**1 teaspoon honey**  
**1 teaspoon salt**  
**1 tablespoon olive or corn oil**  
**4 cups flour, divided**  
**2 cups marinara or pizza sauce, divided**  
**5 thick slices ham**  
**1⅔ cups ricotta cheese**  
**50 pepperoni slices (about 4 ounces)**  
**1⅔ cups mozzarella cheese**  
**2 egg whites**

1. In the bowl of a stand mixer, combine warm water, yeast, and honey, and stir with a fork to blend. Let stand for 6 minutes.



## Ham Pepperoni Calzones





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**2.** Using the whisk attachment, and with the mixer set to medium-low, blend yeast mixture until combined. With mixer running, add salt and oil. Add  $\frac{1}{2}$  cup flour, and continue mixing until thoroughly blended.

**3.** Replace whisk attachment with bread hook. Add remaining flour,  $\frac{1}{2}$  cup at a time, until all flour is mixed in. Increase speed to medium, and continue mixing, using a spatula to scrape sides of bowl as needed, until dough is elastic and smooth, about 5 to 6 minutes.

**4.** Transfer dough to an oiled bowl, turning once to coat both sides. Cover bowl with plastic wrap, and place in a warm spot to rise for 1 hour.

**5.** Divide dough into 5 equal portions. Roll each portion into a 9-inch circle, about  $\frac{1}{4}$ -inch thick.

**6.** Preheat oven to 500 F. Line a baking sheet with parchment paper. Set aside.

**7.** Top each dough circle with about 3 tablespoons marinara, leaving 1 inch of clear space on three sides and 3 inches of clear space on the remaining side. Over the sauce, layer a slice of ham,  $\frac{1}{3}$  cup ricotta, 10 slices pepperoni, and  $\frac{1}{3}$  cup mozzarella.

**8.** Brush edges of dough with water, using a pastry brush. Take the side of the dough that has 3 inches of clear space, and fold it over the filling. Crimp edges, and snip 3 small holes in the tops.



**9.** In a small bowl, whisk egg whites until blended. Brush over calzones, and place on prepared baking sheet.

**10.** Bake for 15 to 20 minutes, or until golden-brown. Serve hot with remaining marinara for dipping.

### SQUASH SOUP WITH HAM AND SWISS

You can make this hearty soup in less than an hour, if you roast the squash ahead of time. **Yields 6 servings.**

**1 butternut squash (2 to 3 pounds)**  
**2 red peppers**

**2 tablespoons cooking oil**  
 **$\frac{1}{2}$  cup chopped onion**  
**2 cups peeled, diced potatoes**  
**1 cup water**  
**1 tablespoon chicken base or 3 bouillon cubes**  
 **$\frac{1}{2}$  teaspoon salt**  
 **$\frac{1}{4}$  teaspoon black pepper**  
 **$1\frac{1}{2}$  cups cooked, cubed ham**  
 **$2\frac{1}{2}$  cups milk**  
**1 cup shredded Swiss cheese**  
**3 tablespoons sherry, white wine, or chicken broth**  
**Chopped chives**

**1.** Preheat oven to 375 F. Cut squash in half, and scoop out seeds. Fill seed cavity halves with a little water to keep them from drying out while baking. Bake for 1 hour, or until squash is fork-tender. Let cool, and then cut flesh into bite-sized chunks. Set aside.

**2.** Preheat broiler. Set peppers on cookie sheet, and place in center of oven. Broil until skins are blistered, about 4 to 6 minutes, turning once. Remove peppers from oven, cover with a dish towel, and let stand for 5 minutes. Remove skin, stems, and seeds. Dice peppers, and set aside.

**3.** Heat oil in a large saucepan over medium heat. Add onion, and cook for 3 to 4 minutes. Increase heat to high. Add potatoes, water, chicken base, salt, and pepper, and bring to a boil. Reduce heat to high simmer, and cook for 8 to 10 minutes, or until potatoes are tender. Do not drain.

**4.** Stir in ham, peppers, squash, milk, and cheese. The soup will be a little chunky. Reduce heat to low, and simmer for 15 minutes, or until heated through. Stir in sherry, and cook for an additional 3 minutes.

**5.** Ladle soup into individual bowls, and serve garnished with a sprinkling of chopped chives. 🍴



Squash Soup with Ham and Swiss

*Valerie Boese and her family live in northeast Nebraska, where they grow a wide variety of vegetables, herbs, and fruits. The family owns and operates TarBox Hollow Poultry ([www.TarBoxHollowPoultry.com](http://www.TarBoxHollowPoultry.com)).*



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TECHNIQUES FOR  
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# Quality Pasture

Plant the seeds of a  
long-term investment  
in the form of  
thriving grassland.

*By Dale Strickler*

**Whether** you're starting from scratch on previously uncultivated land, or taking on the restoration of conventionally cultivated fields, establishing a new pasture begins with soil preparation.

Begin with a soil test before planting a pasture. A traditional soil test measures pH, phosphate, and potassium availability in soil, and is a good place to start. Many other soil tests are available too, such as those for micronutrients. The more information you have about the soil, the better the decisions you can make. If you have cropland that's been tilled and received only commercial fertilizer in the past, a transitional soil test may be all you need. If the land has been no-tilled or cover-cropped, received manure or compost applications, or been in pasture for many years previously, there may be organic forms of nutrients that won't show up on conventional soil tests. In this case, a Haney test or similar test that predicts nutrient release from organic sources may be useful.



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## Correct pH and Deficiencies

I'm a fan of using natural processes to supply fertility as much as possible, but these natural processes require an active biology, and if you're starting from degraded soil, it'll be a long, painful process to create that active biology. I prefer to see immediate results, so I still like to get the pH in shape with lime, take care of sodium issues with gypsum, and get any necessary mineral nutrient levels up to snuff with fertilizers.

I prefer carbon-based fertilizer material, such as manure, sewage sludge, or compost, for mineral nutrients. It's often difficult to get enough of these materials to do the trick, however, so I still lean on commercial fertilizer when starting a new pasture. My established pastures rarely, if ever, get any fertilizer; if you start out with a good supply of nutrients, you shouldn't need any later, because the components will cycle back through manure and urine over and over. Monitoring soil nutrition with grid-based soil sampling is advisable, although you can also use a Haney test or similar test that takes organic materials into account.

Controlling the plants you already have is usually necessary, since most perennial seedlings won't compete with existing vegetation. I prefer to kill existing vegetation with glyphosate, rather than tillage. I'm fully aware of the soil biology problems glyphosate causes, but I feel it's far less destructive than tillage, and using it doesn't bring up a fresh crop of weeds each round.





Composted manure provides important nutrients for pasture grasses.



Take soil samples before planting.

## Prepare the Seedbed

The physical condition of the soil is important to the success of a pasture seeding. Good germination and establishment requires a firm seedbed for good seed-to-soil contact. Soil that's too loose and fluffy will lack enough contact with the seed to transfer the necessary moisture to allow it to germinate and establish.

There are two ways to get a firm seedbed. The first is to till repeatedly to get the soil powdered down. The second is to distribute seed into undisturbed soil. I'm lazy, and the do-nothing approach saves money and moisture and prevents erosion and weed problems, so that's what I prefer.

## Invest in Good Genes

A pasture planting is a long-term investment. It's always amazed me to see a farmer go to multiple field days and plot tours and read test plot results over several months to select a corn hybrid that'll be in the ground for a full five months. But, when the same guy goes to plant a pasture that may be there for the rest of his life, he walks into the local co-op, asks, "What's the cheapest grass seed ya got?" and walks out with endophyte-infected Kentucky 31 fescue. Then he spends the rest of his life lamenting that you just can't make money from pasture, so he plows up every square foot

## Troubleshooting

The following are a few common pasture problems and their likely causes.

■ **FAILURE TO GERMINATE:** Seedbed too wet or too dry; seedbed too cold or too hot; seed dormant or not viable; or seedbed too loose, offering insufficient seed-to-soil contact.

■ **GERMINATED BUT FAILED TO EMERGE:** Seed planted too deep; herbicide residue, especially dinitroanilines and acid amides; crusted soil surface; grubs, wireworms, or other seed-attacking insects; too hot or too cold; *Pythium*, *Phytophthora*, or other seedling disease; or soil too wet or too dry.

■ **SEEDLINGS EMERGED BUT DIED:** Cutworms, crickets, grasshoppers, armyworms, or other seedling-eating insects; *Pythium*, *Phytophthora*, or other root-attacking disease; soil too wet or too dry; lack of legume nodulation; pH at surface too low or too high; insufficient fertility; herbicide residue, especially triazines and sulfonyleureas; excessive competition from other plants; or winterkill, especially if planted too shallow and soil is dry and loose.



of grass he can, only to lose money planting another acre of corn on marginal ground.

A pasture planting may provide 50 years of harvests. If you choose seed with the best genetics available—even if it costs an extra \$20 an acre to plant—it may provide an extra ton of yield per acre per year for 50 years. That extra \$20-an-acre will eventually return an extra 50 tons of forage per acre over its lifetime. That's a small investment for a large return.

## Increase Seed Density

If I could give one piece of advice on planting a pasture, it would be to always seed more than you think is necessary. Planting too much seed will cost far less than the loss of a



Spread amendments evenly over the soil.



year's production from an unsatisfactory stand that needs replanting. Of course, this advice is usually ignored, and most people plant a little less than the amount I suggest. I am a seed salesman, so I do stand to benefit from my recommendations, but I also take pride in giving good advice.

I get a lot of calls that start with, "Hey, do you suppose I could get by with planting [fill in the blank amount] pounds per acre of [fill in the blank species] and get a good stand?" When someone prefaces their question with the phrase "Do you think I could get by with ..." they're really saying, "I'm about to do something I know is stupid, but I want you to give me your blessing so I can blame you when it blows up in my face later."

The bottom line is: Plant plenty thick. I've never had a customer tell me they planted too much seed a year after seeding. Many of them have told me they planted too little trying to save a few dollars, lost a year of production, and had to replant.

## Go Deep

Seeding depth is important, particularly in low-organic-matter soils with little crop residue coverage that are prone to crusting. A general rule of thumb is to plant seeds at a depth of eight times their diameter. Seeding depth should be slightly shallower in clay soils and slightly deeper in sandy soils.

Soils with more organic matter are generally more forgiving of incorrect planting depth. They're less prone to crusting, so seedlings can emerge more easily, and they hold more moisture, so shallowly planted seeds won't be as prone to drying out. Soils with thin, complete crop residue are also more forgiving of incorrect planting depth, because they're less prone to both crusting and drying out.

I like to apply a thin layer of compost or well-rotted manure prior to planting a pasture or planting into a

# Productive Pasture Plans

The following are recipes for highly productive pasture mixtures. Grass-only blends allow for herbicidal broadleaf weed control, but require nitrogen fertilizer for good production and don't produce the animal performance of mixtures that include legumes and forbs. When using these mixtures, be sure to read the descriptions and add, omit, or adjust seeding rates of components to fit your soil, management conditions, and current prices. For example, adding green wheatgrass to a mix is warranted on salty soils, but probably not on other soils. The rates given are in pounds per acre.

## GRASS-ONLY WARM-SEASON PASTURE MIX

- Eastern gamagrass (6 pounds)
- Big bluestem (2 pounds)
- Indian grass (2 pounds)



## GRASS-ONLY COOL-SEASON PASTURE MIX

- Meadow brome (5 pounds)
- Orchardgrass (5 pounds)
- Nontoxic endophyte fescue (5 pounds)
- Low-alkaloid reed canarygrass (3 pounds); replace with 6 pounds green wheatgrass on salty soil
- Smooth brome (1 pound)

## WINTER STOCK GRAZING PASTURE MIX

- Nontoxic endophyte tall fescue (20 pounds)
- Alsike clover (2 pounds)
- Bird's-foot trefoil (2 pounds)
- AberLasting hybrid clover (1 pound)
- Small burnet (1 pound)
- Optional: fourwing salt-bush, winterfat, 'Snow-storm' forage kochia

## TWO- TO THREE-YEAR PASTURE MIX

- Alfalfa (6 pounds); will require bloat control
- Red clover (5 pounds)
- Brome (5 pounds)
- Festulolium (5 pounds)
- Intermediate ryegrass (5 pounds)
- Chicory (2 pounds)
- Plantain (1 pound)



## WESTERN DRYLAND COOL-SEASON PASTURE MIX

This mix is suited to areas with 14 to 20 inches of annual rainfall.

- Intermediate wheatgrass (8 pounds)
- Western wheatgrass (2 pounds)
- Pubescent wheatgrass (2 pounds)
- Smooth brome (2 pounds)
- Alfalfa (2 pounds)
- Yellow blossom sweetclover (2 pounds)
- Sainfoin (2 pounds)
- Chicory (1 pound)
- Burnet (1 pound)



## DIVERSE WARM-SEASON PASTURE MIX

- Eastern gamagrass (4 pounds)
- Big bluestem (1 pound)
- Indian grass (1 pound)
- Alfalfa (3 pounds)
- Birdsfoot trefoil (2 pounds)
- Chicory (2 pounds)
- Plantain (1 pound)
- Annual lespedeza (1 pound)

## DIVERSE COOL-SEASON PASTURE MIX

- Meadow brome (3 pounds)
- Orchardgrass (3 pounds)
- Nontoxic endophyte fescue (3 pounds)
- Low-alkaloid reed canarygrass (2 pounds)
- Alfalfa (3 pounds)
- Red clover (3 pounds)
- Chicory (2 pounds)
- Plantain (1 pound)
- Ladino clover (1 pound)
- Smooth brome (1 pound)







JOHN DEERE

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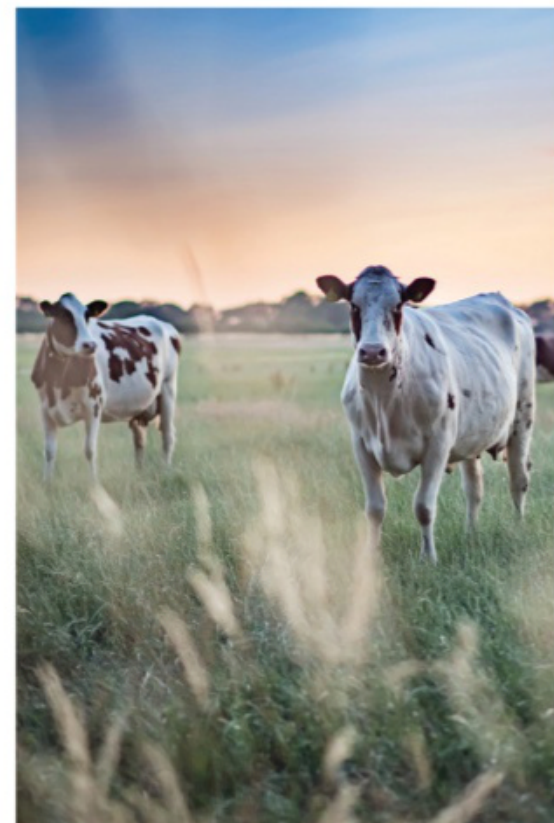
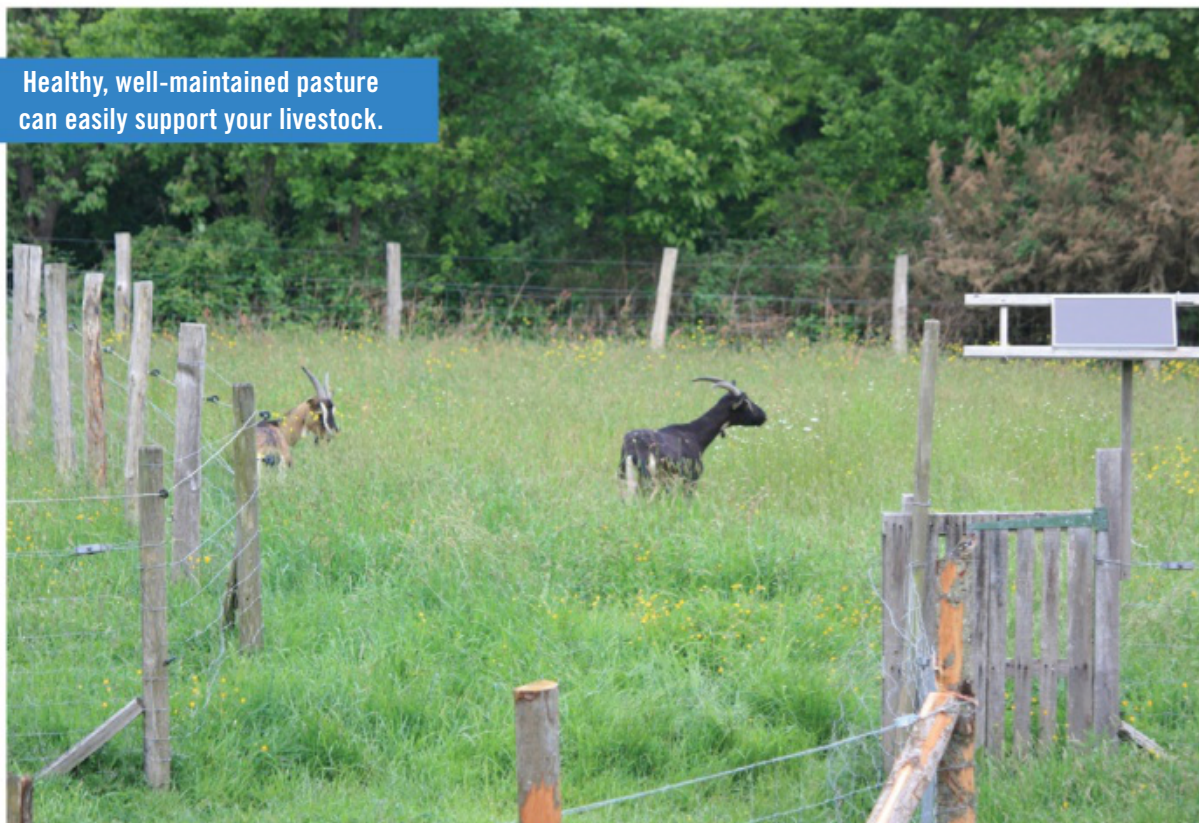
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Healthy, well-maintained pasture can easily support your livestock.



killed cover-crop mulch; it makes for a forgiving seedbed. Too much manure, or manure that's too fresh and contains too much free ammonia or salt, may burn seedlings.

Research the correct seeding dates to give plants the best chance for success, and do your best to plant during these times. The best seedbed in the world can't make up for seeding too early or too late.

## Limit Pest Damage

Insect control may be necessary to get a stand going, particularly if you're interseeding legumes into an existing grass stand. Crickets are the biggest culprit in that case, but grasshoppers can also be a big issue. Of course, one option is just to spray an insecticide and take them out. The drawback of this approach is that you destroy the entire insect population, including all the beneficial and benign insects, along with the pests. I prefer to use a protozoan bait containing *Nosema locustae*. It takes several weeks to kill the crickets and grasshoppers, but it's specific to those insects and doesn't harm any other insects, spiders, or insect-eating birds. Armyworms (which are actually caterpillars) can also be an issue. They can be taken out with insecticide as well. I prefer spraying with a *Bacillus thuringiensis*-based spray, which will kill only caterpillars and spare other insects. Of course, any caterpillars that aren't pests will also be killed by this treatment, but it's the most targeted treatment currently available. 🐞

*Dale Strickler is a leader in the soil health movement, an agronomist for Green Cover Seed, and an author. This is an excerpt from his book Managing Pasture, used with permission from Storey Publishing.*

If I could give one piece of advice on planting a pasture, it would be to always seed more than you think is necessary. Planting too much seed will cost far less than the loss of a year's production from an unsatisfactory stand that needs replanting.

## Our Store

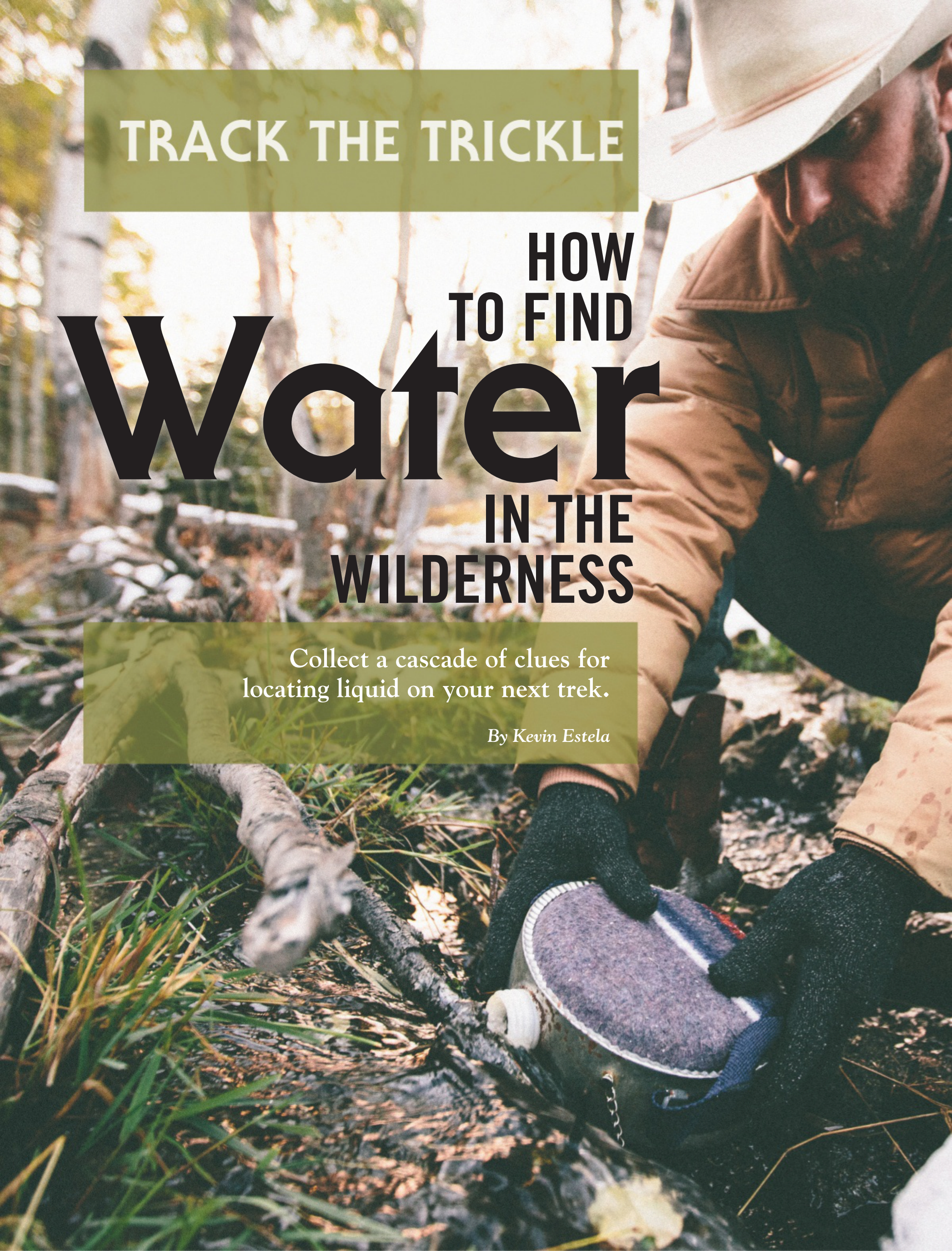


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A person wearing a tan jacket and a white hat is crouching in a forest. They are using a piece of cloth to filter water from a stream into a metal pot. The background shows trees and foliage.

TRACK THE TRICKLE

HOW  
TO FIND  
**Water**  
IN THE  
WILDERNESS

Collect a cascade of clues for  
locating liquid on your next trek.

*By Kevin Estela*





GETTY IMAGES/EPICUREAN; PAGE 24: GETTY IMAGES/MAHE HARTOUTIAN

**Water** usually lies nearby. It hangs heavy in the air before it condenses on grass. It dwells within plants, drips down rock, and pools in crevices before it's absorbed by roots, lapped up by animals, or evaporated into the atmosphere. But in the vast wilderness, you can't refill your canteen until you first find fresh water, and filter it, if necessary. If you're in a familiar area, you'll likely know the locations where water pools, or where running water abounds. If you're in an unfamiliar area, you'll have to recognize universal patterns, use past experience, and engage in some trial and error to locate what you're looking for. Finding water requires using your senses, as well as a hefty dose of common sense. The following clues and cues will serve you well.



### Hidden in Plain Sight

You can collect water first thing in the morning from the dew that forms on grass in open woodland fields. All you need to do is tie a handkerchief or spare T-shirt around your ankle and walk through a field, then wring out the cloth into a container. Water also condenses on rocks when hot air meets cold rocks to create damp surfaces. Since water only drips down, tall rock faces can have significant amounts of water at their bases. Rock crevices can also trap water; it's in your best interest to check them too. Just be careful to look inside crevices before feeling for moisture, as insects and animals may reside there.

Another way to find water is by seeking water-loving vegetation, such as the willow tree in desert environments. Willow trees signal water, and they have a distinctive shape and color that stands out from the rest of the more commonly found, low-lying vegetation. From a distant vantage point, you can spot these color variations on the landscape, and reduce the amount of scouting you need to do. Cattails also love water. Next time you see them along the highway or while travelling the backwoods, note where they're growing. Cattails can be found in swampy areas or in extremely saturated marshland, where you know water won't be far away.





Look to the land for clues. When scouting areas with my map, I typically look for ravines as potential seasonal water sources. After all, when the map was drawn, it could've been a drier season when no water was present. Also, look for animal behavior. Birds tend to circle close to water sources, and you may find animal tracks leading to water as well. Insects are similar; an abundance of mosquitoes may signal a nearby water hole or pool.

In winter conditions, you may be surrounded by snow in all directions. While it's tempting to grab a handful of snow and consume it, eating snow will lower your body temperature, a dangerous practice in frigid conditions. But you can turn it into water in a number of ways. You can place a large snowball on a stick and angle it toward a fire with a container underneath it. Or you can construct a tripod with a cloth suspended between the legs, with snow placed on the fabric. When the tripod is placed near a fire, the snow will melt and drip through the bottom of the cloth. Should you have a metal pot, you can melt snow very easily, but you

should always place a small amount of water in your pan first. This will keep your pan from burning, and the snow will melt more easily.

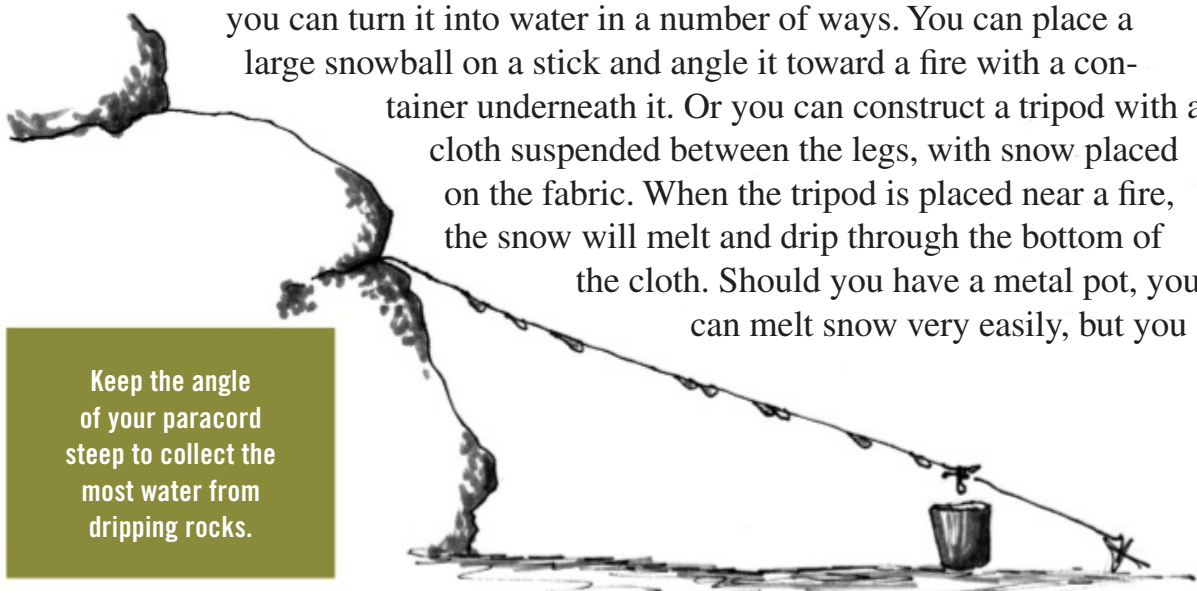
## Running Over Rocks

Keep an open mind when seeking water in the wilderness. You may not find an abundance, but rather a trickle rolling down the side of a rock in a thin coating. You can try to place the lip of your canteen against the rock face, but you'll find it difficult to get the water into your container. However, you can take advantage of this water with little more than a small length of string.

With only a piece of paracord and a water bottle from your emergency kit, you can set up a drip water collection system to fill your canteen. Affix one end of your cordage to the rock face, and place the other taut end in the bottom of your bottle. If the rock face you're working with has fissures and cracks, tie a knot at the end of your paracord, and jam it in one of the cracks where the water is running over. Make sure to place your water bottle lower than the paracord's point of attachment to the rock, and keep the angle of the cord steep. (See illustration below left.) With this setup, the water from the rock will follow your cordage down into your bottle while you work on other camping tasks. If you don't have cordage, you can wipe down the rock surface with a cloth, and wring out the water into a container. Either method will help you utilize this resource, instead of abandoning it and searching for an oasis that probably doesn't exist.

## Trapping Transpiration

Trees absorb water through their roots and then release it through their leaves in a process called transpiration. In layman's terms, transpiration is when a tree sweats. According to the United States Geological Survey, a large oak tree



Keep the angle of your paracord steep to collect the most water from dripping rocks.





Place a pebble  
in the corner of  
your bag's lowest  
possible point.

can transpire up to 40,000 gallons of water per year, which averages out to slightly over 100 gallons per day. This number is probably much higher on warmer days and lower on cooler days, since heat is a factor in the process. The amount of available water in the soil and the plant species also are factors, as some plants transpire more slowly in drier environments. You can take advantage of transpiration with just a large plastic bag and a small length of cord. (See illustration above.)

Be careful which kind of bag you select. Use a large bag, such as a contractor's cleanup bag or a clear garbage can liner. Don't select bags with an added chemical fragrance that's meant to prevent insect infestation. Scout out an edible deciduous tree, such as maple, birch, or beech, and find a branch with an abundance of leaves. You'll want to avoid poisonous trees or vegetation that could impart a bad flavor or toxins to your water. For example, avoid cherry trees, as they contain cyanogenic glycosides, which wreak havoc on the human body, causing headaches, vomiting, and dizziness.

After you find a suitable tree, place your bag over the branch and its bundle of leaves. Before you tie off the bag, place a small pebble in the bag's bottom corner, and place



You can grab a chunk of moss, squeeze it in your hand, and drink right from the source. But without a cloth, there's no way of straining out the particulates.



this corner at the lowest possible point. This will help collect all the water at this point. Using cordage, tie off the bag to the branch, and walk away. As long as you selected a branch that's exposed to the sunlight for the majority of the day, the bag will raise the temperature,

further increasing the transpiration rate. Let the transpiration bag capture water while you focus on conserving your energy.

After a few minutes of sun exposure, you'll notice beads of water forming on the inside of the bag. After being exposed to sunlight for hours, water will accumulate at the bottom of the bag. At this point, either remove the bag from the tree or cut a small spout in one corner. Just tie a knot in your bag to reuse it again. As for the branch you're using, transpiration will eventually kill all the leaves inside the bag. For this reason, it's wise to attach your bag to greener and healthier leaves when you notice the reused leaves turning color.

Transpired water may have a slightly green color to it, but this is harmless. You may also detect some small insects or particulates in the water. You can strain them out with your teeth as you drink. This method of water collection takes seconds to set up, and yields a respectable amount of water considering the little effort needed on the front end.

### Mopping Up with Moss

You can grab a chunk of moss, squeeze it in your hand, and drink right from the source. But without a cloth, there's no way of straining out the particulates. If you have a handkerchief, place moss inside it, and remove any bits of dirt or mud, if possible. When you have a sizable amount of moss, gather the four corners of your handkerchief and twist them in your hand until you have a bundle in the center. As you squeeze this bundle, extract the water from the moss into a container. The water that comes out of the handkerchief will likely be muddy in appearance, so you'll still want to boil, mechanically filter, or chemically treat the water.





A seepage basin uses gravity to act as a preliminary filter.

## Seepage Basins

If you're near a large body of water, the best way to filter out the particles and sediment you don't want floating in your cup—assuming you don't have a bandana or handkerchief—is to dig a seepage basin. A seepage basin utilizes the terrain as a filter, and it's just the first step in making water cleaner, better, and safer to drink. It won't create water that's ready to drink, but the water will contain almost no particulates if filtered correctly.

To dig a seepage basin, find a spot about 2 to 3 feet away from the edge of a swamp or body of water, and ideally just beyond any vegetation. If you can, dig your seepage basin in a relatively flat spot, such as a slight bank. You'll need to dig down past the level of the body of water, since water won't drain against the force of gravity. Your seepage basin won't collapse in on itself as readily if you can dig in an area where there's a healthy root system from nearby plants. Even if you end up with muddy water, let it sit for a while. The dirt and sediment will settle, and your water will be clearer when you come back to it.

This seepage basin may help you hydrate, but it won't affect the smell of the water. That can be remedied with a charcoal filter. Another way to mitigate the stench is to make tea. If you can identify plants, search for

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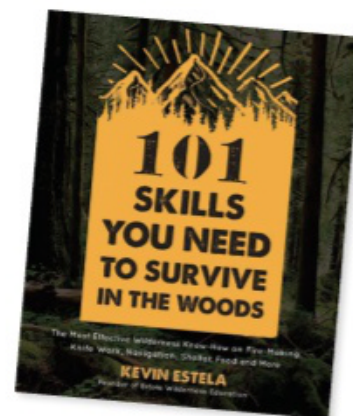
\* Assembled in the USA using domestic and foreign parts.





white pine, yarrow, hawthorn, willow, or St. John's wort to make pleasant-tasting teas. As stated before, this skill is just the first of many essential steps in making water cleaner, better, and safer to drink. 🍵

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*Kevin Estela became interested in bushcraft and survival as a child after hearing of his father's survival stories during the Japanese occupation of the Philippines in World War II. Reprinted with permission from 101 Skills You Need to Survive in the Woods by Kevin Estela, Page Street Publishing Company (2019). Photos by Kevin Estela, Mike Travis, Dwayne Unger, Mike Lychock, Amanda Czaplickiand, and Price Brothers Outdoors. Illustrations by Lauren Harton.*

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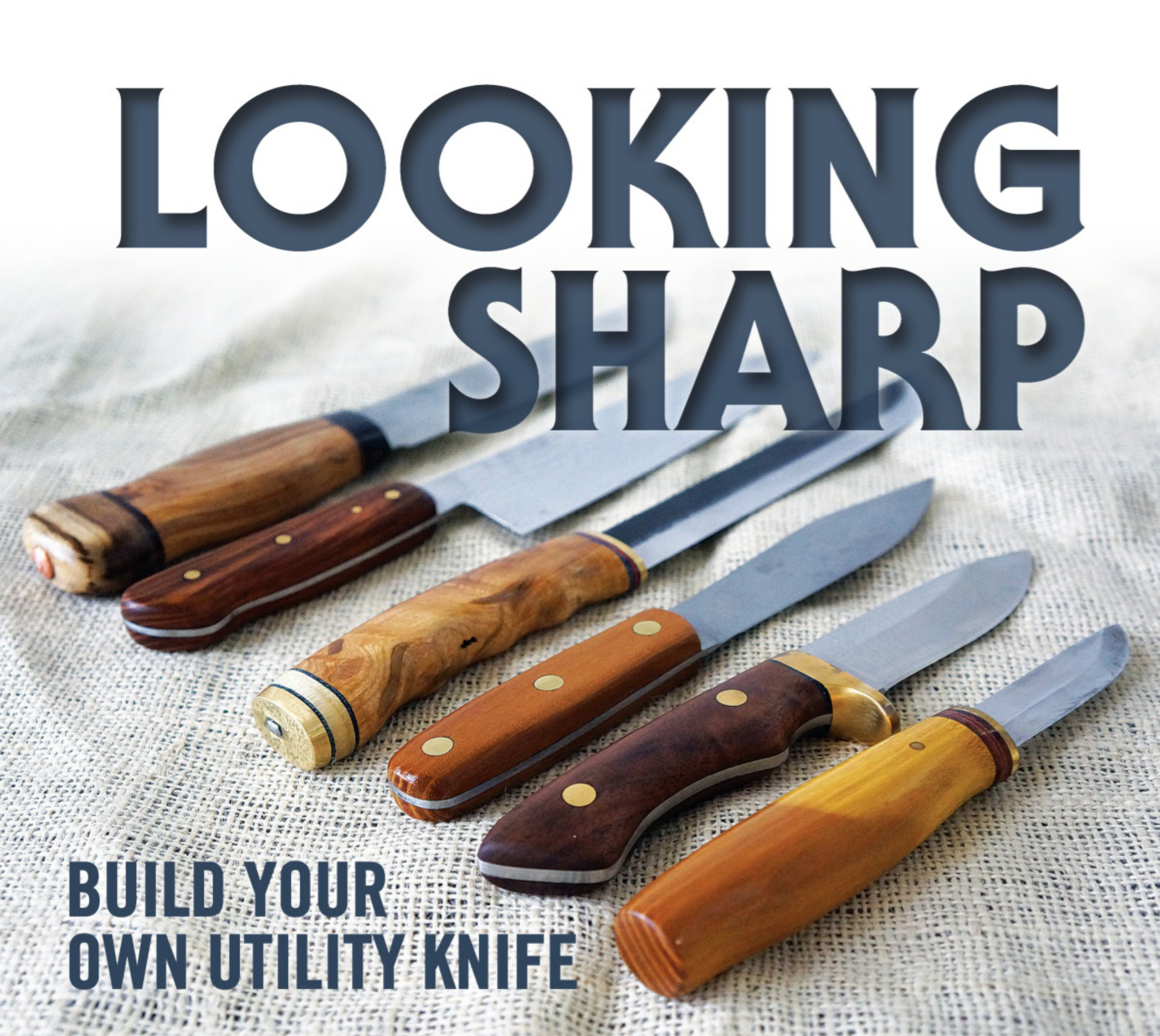


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# LOOKING SHARP



## BUILD YOUR OWN UTILITY KNIFE

To customize your own knife, order blade blanks online, and round up some spare wood for the handle.

*By Oscar H. Will III*

**Have** you ever considered making your own knives? It's much easier than you may imagine. To get started, you can buy blade "blanks" in many styles, and then all you have to do is cut handle scales, rivet them to the blade, and then shape, sand, and oil the handle. The photo above shows the range of knife options you can create, from simple to fancy.

The indispensable utility knife is, without argument, the most useful implement for tooling about a farm, homestead, or shop. Whether you're cutting baling twine or slicing an apple, you're simply not equipped without a sharp knife.

To build your own beautiful utility knife, you'll need a full-tang blade blank (see photo 1, Page 31) without a bolster or finger guard, wood for your handle scales (the halves of the handle that you'll rivet to each side of the tang), some epoxy glue, and a handful of brass pins or cutlery rivets. You can source all the materials for the knife featured in this article, including the tools and handle material, from Jantz Supply ([www.KnifeMaking.com](http://www.KnifeMaking.com)).



Happy carving! After your friends and family see your handsome and handy blade, they're sure to come your way for kitchen, farm, and utility knives of their own. Just show them these simple instructions and they'll be one step closer to self-sufficiency.

## Tracing the Template

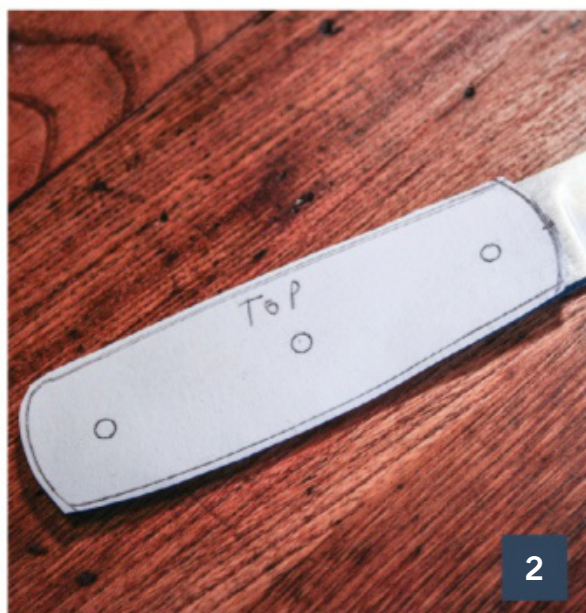
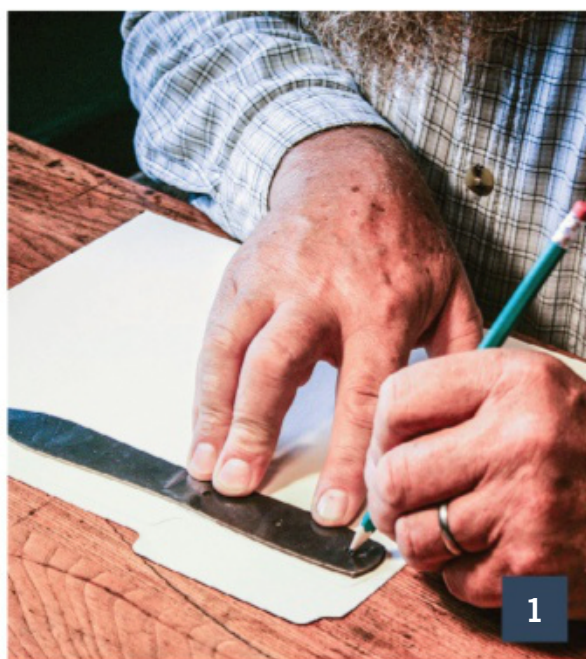
1. Trace the handle area of the knife's tang onto a piece of paper or light cardboard. Extend your mark to the blade and indicate where the sharpened area begins. Cut out your traced template, leaving  $\frac{1}{8}$ -inch margins for your outline. To finish the handle's mock-up, trace any rivet holes from the blade blank onto the template.

2. While the knife's tang will determine the butt end of the template, you'll have to commit a bit more thought and care into crafting a symmetrical, eye-pleasing blade end design. Start by measuring from the center of the rivet hole nearest the handle's butt end to the bottom of the handle. That measurement will also mark the distance from the center of the hole adjacent to the blade to the blade end of the handle. Position the bottom of a glass or bottle against the blade end mark, with the outside of the curve pointing toward the blade, and trace the outline. This will define the blade template. Finally, punch out the centers of the rivet holes you traced onto the template.

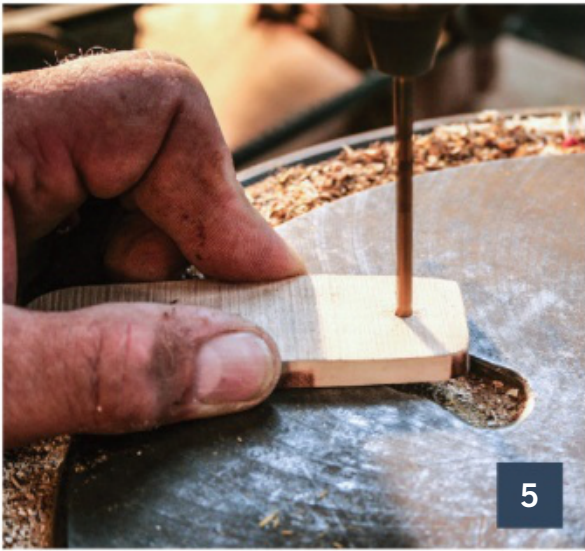
## Handle Work

3. To select a wood source for your handle, consider availability, grain pattern, and hardness. Because I work in northeastern Kansas, I prefer Eastern black walnut, black locust, and Osage orange.

4. Trace the outline of the template onto the wood, mark the holes, and label the top. Next, cut out the handle-shaped piece







Finished utility knife

with a bandsaw. If you don't have access to a bandsaw, use a coping saw, jigsaw, or other handsaw with rasps to form the shape. Finally, cut the wood in half — again, preferably with a bandsaw — to create two identical scales, one for each side of the handle.

**5.** Match a drill bit to the size of the holes in the handle end of the blade's tang. Next, carefully drill a hole at the rivet mark in one

end of a handle scale (a drill press will work best). Use the bit or a pin to locate one end of the scale with respect to the hole in the knife tang. Adjust the scale until it's aligned with the tang hole, and then bore the other two holes. Repeat with the other scale. Finally, use a drill bit — approximately the diameter of your cutlery rivets' heads — to bore countersinks to the depth of the rivet heads into the outer openings of all the holes.

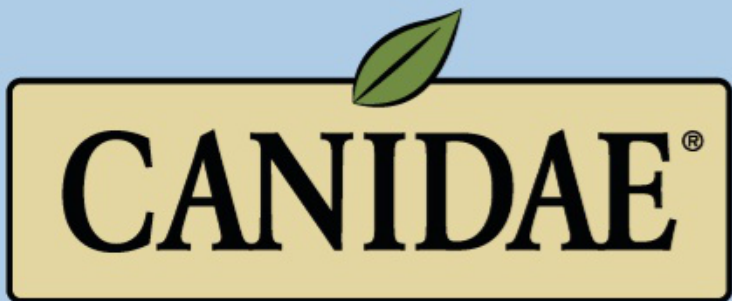
**6.** Clamp a hand-held sander upside down in a vise and flatten the inside surfaces of the handle scales. Clamp the two halves together so they resemble the final assembly and shape and sand the edges that will face the blade.

**7.** Dry-assemble your knife handle to check the alignment of all the holes. If everything lines up, disassemble the handle scales and scuff the tang area of the scales with low-grit sandpaper. Work on a hard metal surface for best results. Next, mix epoxy and apply it liberally to the inside surface of one of the scales. Insert the female half of the cutlery rivet through the scale and knife tang, and set it on your work area or bench. Apply epoxy to the inside surface of the other scale, and install it on top of the female half of the rivets. Insert the male rivet halves and drive them home with sharp hammer blows, taking care not to spray epoxy. Wrap the handle with plastic wrap or wax paper, and then clamp it at each end and in the middle. The epoxy type will determine the glue's set time.

**8.** After the epoxy has hardened, unclamp and unwrap the handle. Cover the blade with cardboard or painter's tape, and get to work on the final shaping. Whether you clamp the knife blade to the bench or in a vise, use wood blocks to avoid marring the steel. Use a combination of rasps, files, power sanders, and sandpaper to bring the handle contours flush with the edge of the tang. Round all the corners until the handle feels good in your hand. Finish with steel wool if you want a smooth handle. Finally, apply several coats of Danish oil to the handle, and buff with superfine (#0000) steel wool between coats. 🧐

*Hank Will crafts many different knives, fashioning handles from wood he harvests on Prairie Turnip Farm, a diversified livestock operation he runs with his wife in Osage County, Kansas. Hank is the Editorial Director at Ogden Publications, the former editor in chief of GRIT magazine, and the author or co-author of eight books, including Plowing with Pigs and Other Creative, Low-Budget Homesteading Solutions. Reprinted with permission from Massey Ferguson's FarmLife magazine.*





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# HOW TO DEAL WITH A WET SPRING IN THE VEGETABLE GARDEN

Learn to handle a soggy season by preparing your soil and crops. *By Pam Dawling*

Gardeners and farmers don't control the weather. Especially in spring, unpredictable heavy rains sometimes mean water can't drain away fast enough, leaving soil impossible to work. How do we adapt when it's too wet? What are our best options for planning ahead?

As part of your rainfall preparedness, think about the average weather in your locality. Figure out which crops are already marginal in your climate, and decide whether they're important enough to warrant extra protection.

## Primary Prevention

For crops you do decide to keep, try the following tips to prevent flooded plants and soil erosion. First, where feasible, plan to use raised beds or ridge planting to help excess water drain sooner. Minimize tillage, because tilling accelerates nutrient burn-up and the loss of organic matter. Also avoid tilling right before a forecast of heavy rain. Instead, use a broadfork, which will open up the soil and allow it to dry faster. You might be able to mow, which



FROM TOP: ADOBE STOCK/GOODMOMENTS, ADOBE STOCK/JURCA JOT



will prevent weeds from seeding and prevent any cover crop or previous food crop from getting bigger. Or, lay tarps over the cover crops and weeds and wait for them to die. You might also use a string trimmer, a scythe, or a flame weeder to bring down unwanted vegetation. We successfully used our wand-style flamer to kill weeds in the potato patch one spring when it was too wet to hill the potatoes.

Increase the organic matter content in the soil so it can absorb more water in a manageable way, without compacting and becoming anaerobic. Incorporate compost, cover crops, organic mulches, crop debris, and weeds, all of which improve soil structure, organic matter, and humus. The effect of compost lasts longest. If you're practicing no-till methods, lay these materials on the soil surface and expect the incorporation and benefits to be slower to arrive.

Maximize the volume of living roots in the soil from food and cover crops, and use both deep-rooted and shallow-rooted crops; root channels improve soil structure and drainage. Keep these roots in the soil all the time, or as much of the time as possible, whether they're alive or dead, to tie the soil together and prevent erosion. Consider no-till cover crops, which will become mulch. Their roots will support microbial growth, form active organic matter, and rapidly release nitrogen to the plants. Low-growing, noninvasive cover crops can be planted in pathways.

Avoid a fallow period at times of the year when your plot could receive a lot of rain. For your location, that might mean year-round.

You can also try some unconventional growing tips for crops you think are in danger. For example, the International Cooperators' Guide "Grafting Tomatoes for Production in the Hot-Wet Season" recommends using eggplant rootstocks for tomatoes when flooding is expected,

as eggplant roots can survive for multiple days underwater.

## Cover Crucial Plantings

Cover soil in key locations to assist with drainage. Before a storm moves in, cover the soil where you plan to plant. This can be accomplished with temporary caterpillar tunnels, low tunnels, plastic mulches, and tarping (or "occultation"). Unfortunately, these

can keep some areas of the soil dry while causing runoff that makes other areas wetter. But this strategy can help you finish crucial plantings in a timely way, leaving the problem of oversaturated areas for you to resolve later.

Hoop houses and caterpillar tunnels can help protect crops from deluges. Large structures do cause runoff, but you can plan ahead by constructing a drainage system. When we built our



Top: The use of organic mulches will improve your plot's soil structure and build humus. Bottom left: Tilling wet soil after a rain can damage soil structure and increase the loss of organic matter. Instead, gently open up the soil *before* a rain with a broadfork. Bottom right: Drainage channels can help direct water away from your crops.



hoop house, we made a ditch around three sides of it to channel runoff downhill. Some people who have roll-up or drop-down sidewalls install plastic guttering on the “hipwall” lumber that these structures need, and collect the rainwater for irrigation.

Despite your best-laid plans, you may still need to take immediate action for serious problems. If water drainage is a big issue where you grow, you may need to consider a swale. A swale that’s 18 inches wide

by 8 inches deep in average-draining soil can infiltrate approximately 1.6 inches of rain per hour per 20 square feet of contributing area. Similarly, a “grassed waterway” — a large, gradual, grass-covered swale that you can graze or mow — conveys surface water to a stable outlet without causing erosion.

Another option is a dry well, or “French drain,” which is essentially a hole full of rock. This will likely need to be a large hole, and might require

a lot of rock (that is, expense) and maintenance to keep it free of sediment and leaves. Other somewhat expensive options, perhaps best for large plots of land, include establishing tile drainage, which involves plumbing your field to remove excess water below the surface of the soil, or keyline plowing, which follows the contours of the land to open compacted soil and distribute water toward naturally drier areas.

## First Aid for Field Planting

If you can’t plant when you want, try transplanting instead of direct seeding. We did this once with our winter squash when our plot was hopelessly wet. We were able to transplant the squash fairly young, and didn’t have a significant delay for our harvest.

You can also consider a different, faster-growing plant cultivar that you can sow later and still harvest in time. Some leaf lettuces, including ‘Salad Bowl,’ ‘Bronze Arrowhead,’ and ‘Tom Thumb,’ need only 46 days to mature, while romaine lettuces can take 70 days or more. Baby lettuce mixes can be ready in as little as 21 days from mid-spring to mid-fall.

Another option is to choose a different, faster-growing crop that you can sow or transplant later. Brassicas, such as kale, arugula, and radishes, are ready in 30 to 35 days. Many Asian greens will be ready in about 40 days. Try ‘Maruba Santoh,’ ‘Tokyo Bekana,’ ‘Yukina Savoy,’ Chinese cabbages, komatsuna, ‘Senposai’ (a cross between komatsuna and cabbage), mizuna, bok choy, and tatsoi. Some salad crops, such as lettuce, endive, chicory, spinach, Swiss chard, and pea shoots, can be harvested after a relatively short time. One summer, we sowed ‘Tokyo Bekana’ cabbage as a lettuce substitute, and it took only 20 days to grow to baby size, and 45 days to full size.

Corn salad, land cress, sorrel, parsley, and chervil are ready in 35 to 45 days. Beets; collards; kohlrabi;



Top: While they can cause extra runoff, hoop houses will protect crucial crop plantings from large deluges. Bottom: Raised beds, including boxed garden beds, are perfect for helping excess water drain quickly.

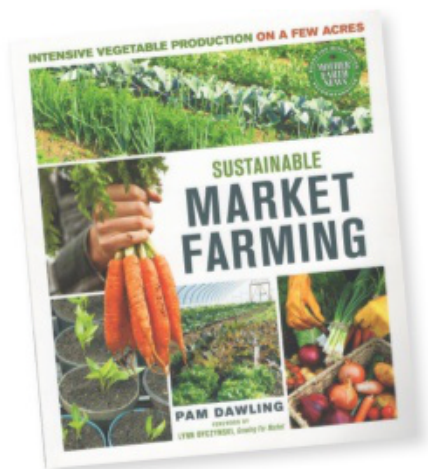


turnips; and small cabbages, including 'Farao' and 'Early Jersey Wakefield,' are ready in 60 days.

Of course, when choosing plants, keep your crop rotation in mind, as well as the next crop you intend to plant in that spot. With this attention to detail, plus your perfectly prepped growing plots, you can pull your crops through heavy spring rains for seasons to come. 🌱

*Pam Dawling works in the vegetable gardens at Twin Oaks Community in central Virginia. She often hosts workshops at Mother Earth News Fairs, as well as sustainable agriculture conferences. Her book, Sustainable Market Farming, is available below.*

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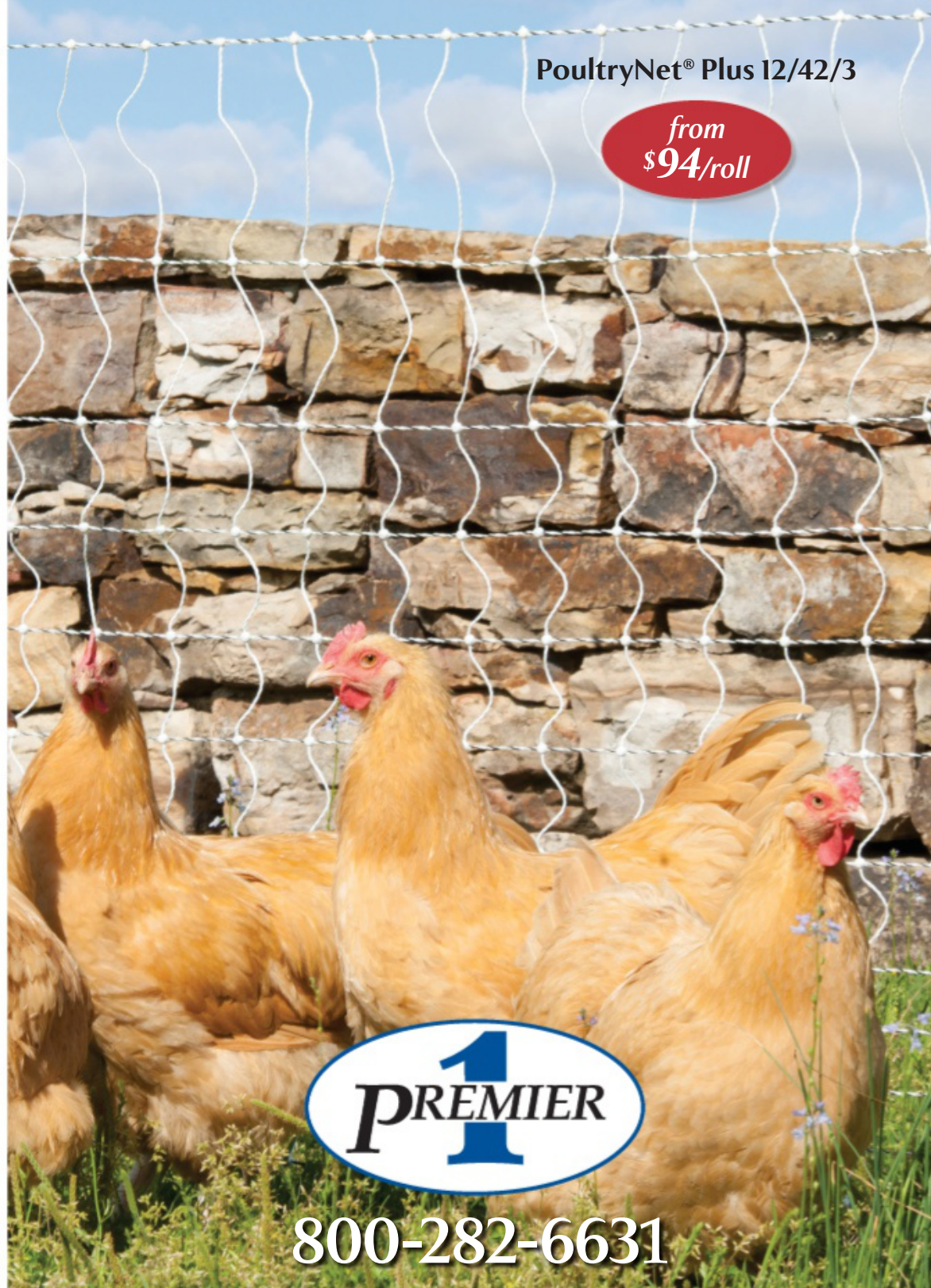
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Unravel the secrets  
behind growing and  
deseeding the ruby-red  
“fruit of paradise.”

*By Benjamin Whitacre*

**With** up to 83 aromatic notes, the flavor of pomegranate blends the syrupy sweetness of grape, the refreshing astringency of cranberry, and the cooling quality of lemon. A hint of its juice and the sound of its name can command a premium price, and bestow superfood status to any dish with which it’s associated.

If culinary pleasure isn’t enough, the benefits for gardeners and orchardists are plentiful. Pomegranates bear early and suffer from few diseases or pests. For those searching out a niche market, pomegranates come in more than 1,000 diverse cultivars, most of which aren’t commercially available.

But, to the frustration of pomegranate lovers in North America, more than a century of efforts have yet to lift it to staple fruit status. For many in the Western world, the pomegranate remains an edible puzzle—seemingly frustrating and difficult to solve—that punishes every wrong move with an indelible spritz of red juice. But the truth is, pomegranates are actually quite simple—both to grow and to eat—if you take a few minutes to learn their secrets.





## Growing Pomegranates

Beyond a sensitivity to cold temperatures (and humidity, with some cultivars), pomegranates have few issues or special requirements. Pomegranate fruit has a tough rind, so animals and insects tend to leave it alone. The plants rarely require spraying, and pruning needs are minimal. They do best in well-draining, loamy soil, but will tolerate salinity, excessive calcium, pollution, drought, and dampness like champs. They can even be watered with raw sewage.

For many growers, pomegranates are simply a lesson in microclimates and cultivar selection. If you live in Zone 7b or below, look for cold-hardy cultivars, such as ‘Haku Botan’ or ‘Salavatski.’ Some cold-tolerant cultivars have been reported to withstand temperatures as low as minus 6 degrees Fahrenheit. And though most pomegranates can withstand heat upward of 118 degrees, humidity adversely affects some cultivars, which has been a factor in preventing commercial production in the southern U.S. If you live in a particularly humid climate, select plants that have been bred for resistance, such as ‘Salavatski.’

### ■ PROPAGATION

Most often, pomegranate plants are grown from rooted cuttings, which produce a true copy of the parent plant. A cutting can generally be taken during any time of the year, as long as it’s from a vigorous, healthy plant that’s at least 1 year old. (Cuttings are often taken from clippings of unwanted suckers, or from branches pruned to open the canopy.) Cuttings should be 6 to 10 inches long and ¼ to ½ inch thick. Because it’s difficult to distinguish the top from the bottom of a pomegranate cutting, immediately mark one end with a pen or crayon, or

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cut the top at an angle. While most pomegranates are self-fertile, the best fruit set requires cross-pollination, so select cuttings from at least two different cultivars.

To encourage rooting, scrape the bark off the bottom ½ inch of each cutting, and then dip them in a rooting hormone. Plant them in a small container—individual pots or seed-starting flats work nicely—with a well-draining rooting medium, such as a mix of perlite and vermiculite. Make sure at least one node of each cutting is fully inserted into the medium.

Place your cuttings in a warm place, ideally 75 to 80 degrees, and out of direct sunlight. A heating pad placed underneath the cuttings can help maintain a steady temperature.

If you have a misting system in place, set it to mist your cuttings for 10 seconds every 20 minutes. Alternatively, you can fashion a mini-greenhouse out of a clear container placed over the cuttings to provide a humid climate. With this setup, you’ll need to water carefully, just enough to keep the environment damp, but not soggy.

Rooting should take place in 1 to 2 months. Once their roots are established, transfer the plants to quart-sized nursery pots until they’re ready to plant outdoors in spring, after any chance of frost has passed.

### ■ PLANTING AND CARE

Plan to plant your pomegranates in a spot with full sun exposure. If you’re located in a colder area, you’ll have the most success if you create a microclimate for your plants by placing them near a wall or building. Alternatively, a pomegranate can be grown in a large pot and brought inside during winter. Pomegranates naturally grow as bushes, but can be pruned into single-trunk trees if desired. Both forms are quite attractive, so planning for landscape design is also worthwhile.



Gently cut the fruit in half.

Invert the rind to remove seeds.

## Simple Seed Removal

Despite their reputation, pomegranates aren't hard to prepare. They've long been dispersing their own seeds with little effort, because if left on the plant long enough, the fruits split open and turn inside out. It only takes a few simple steps to mimic this process in the kitchen, and the only tools required are a sharp kitchen knife and a bowl in which to put the seeds.

After the seeds are removed, they can be kept in the refrigerator in a sealed container for up to 1 week. They can also be frozen, though they absorb freezer odor within a month. If frozen seeds become unpalatable sooner than expected, they can still make quality juice as long as the skin is carefully strained out.

### INSIDE-OUT TECHNIQUE

- First, cut off the crown (or "calyx") and any remnants of the stem. Without cutting deep enough to puncture the seeds, score from the center — where the crown was — to the stem, and back around, so that you've cut a circle all the way around the fruit. Gently twist from several angles until it begins to give. If it doesn't give, score a little deeper, still avoiding the seeds.
- Pull the fruit into halves, and turn each half inside out. If they don't readily give, lightly score the edges between the seed clusters about  $\frac{1}{8}$  inch deep to facilitate tearing. It may be necessary to break off a cluster, but the objective is to get as large a piece as possible turned inside out. After the rind is inverted, pull the papery tissue off like a wrapper.
- Inverting the rind will loosen the seeds and provide the easiest surface for handling and brushing them out. Try not to apply too much pressure or cut more than necessary.
- If you have a pomegranate with an exceptionally thick or hard rind, which can be a result of cultivar selection, early picking, or poor cultivation, it may not turn inside out. In that event, you'll have to break it into a few large pieces to extract the seeds. This method is messier and not as effective, but will work for hard-shelled fruits.

### ■ TREASURE TROVE TECHNIQUE

This method requires more effort than the Inside-Out Technique, but the result is a gorgeous treasure trove filled with ruby-red rewards.

**STEP 1:** Score a wide circle around the crown of the pomegranate, just shallow enough not to cut the seeds.

**STEP 2:** Peel off the top, leaving the crown in place.

**STEP 3:** Score the margins between each of the seed clusters, stopping about halfway down the fruit.

**STEP 4:** Gently twist the pomegranate from various angles, until it begins to loosen and come apart.

**STEP 5:** Pull each whorl apart.

**STEP 6:** Remove the crown and the white, fleshy albedo beneath it.

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Once you've selected a site, dig a hole about three times the size of the plant, approximately 2 to 3 feet in diameter and 1 to 2 feet deep. Add a mix of manure, mulch, or compost to improve the soil, and water incrementally when filling the hole. Water and fertilizer can make a dramatic difference in the early growth of a new plant, and encourage it to fruit years earlier than it might otherwise.

Pomegranates tolerate a wide range of soil pH levels, but prefer a pH between 5.5 and 7.2. For best results, fertilize your plants once a year in fall or winter with compost or manure. Heavy monthly fertilizing can also help a plant that's died back recover much quicker. However, in colder areas, avoid stimulating plants much past August, or they may continue to grow when they should be going dormant, which is crucial to winter survival.

With the exception of specimens grown as single-trunk trees, which demand annual sucker removal, pome-

granates require minimal maintenance beyond removing dead or awkward wood. General pruning for fruit productivity should be done with discretion to maintain a graceful, weeping form. Prune cautiously in Zones 7b and below, taking care to leave most new basal growth for winter survival and fruit production the following year.

Pomegranates will produce fruit in less-than-ideal conditions, but, like most plants, respond best in their ideal environment. In Zones 8b to 10, with the correct care, they can flower and set fruit multiple times a year.

### Pomegranates in the Kitchen

While the sweet-tart flavor of most pomegranates grown in America is excellent without other ingredients, the seeds are so versatile for cooking that they might as well be considered a condiment, as they were by Assyrian king Ashurnasirpal II almost 3,000 years ago. Sprinkle a few seeds on top of a cake, in a bowl of granola cereal, on fish, or on a salad. Their bursting texture and tangy flavor make them a favorite for dips, such as guacamole and queso. And because the seeds' fleshy layer absorbs liquid and aromas, they mingle well in uncooked dishes, such as a fresh fruit tart, or as a substitute for tapioca pearls in bubble tea. When dried, the seeds are known as the spice "anardana."

Other common culinary uses to experiment with include infusing the fruit in liqueurs, beer, wine, tea, ice cream, smoothies, and chocolate. You can also turn the juice into jelly, sauce, or molasses, or make it into a frozen concentrate. And, of course, well-known pomegranate grenadine syrup is always a hit. 🍷

*Benjamin Whitacre is an experienced gardener and writer who grows pomegranates in his Zone 7a garden in central Virginia.*

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# PIG *Home-Raised* FEED

The healthiest and thriftiest pig chow comes straight from your own homestead.

*By Shawn and Beth Dougherty*



**Pigs** have always been great animals for small farms. But when you raise pigs on commercial feed, the original \$45 to \$50 investment in a piglet can escalate into hundreds of dollars. Add in butchering costs, and the price of home-raised meat can quickly reach more than \$2 a pound. But pigs haven't always been such a pricey proposition. The traditional role of pigs on the farmstead was as garbage recyclers. That's why pigs were always considered the thrifty farmer's best friend.

You may have lots of pig food on your homestead that you just haven't recognized. Most of us are composting, burning, or throwing away materials that our ancestors would've seen as premium pig food. With just a little adjustment to your present practices in the garden, kitchen, barn, and pasture, you can take advantage of these sources of pig nutrients.

## The Original Piggy Bank

Pigs are exceptionally well-adapted to live symbiotically with human beings because, like us, they're omnivores. They eat what we eat. But pigs are far less particular than humans, and will happily eat all the waste and spoilage from our kitchens, gardens, and dairies. Despite all the corn and soy in commercial pig feed,



pigs don't need either in their diets. Instead, they need proteins, fats, carbohydrates, and micronutrients just like us, and these can be obtained from the farm.

Additionally, pigs are uniquely adapted to take advantage of times when nature produces a lot of good calories. Their adjustable metabolisms let them enjoy seasons of boom and bust. They'll happily "pig out" when there's plenty on the table, storing huge quantities of whatever nutrients are available. Then, when times are leaner, they can drop back to a maintenance ration, waiting comfortably until the next period of plenty. This makes them a huge benefit to the farmer or homesteader with seasonal surges of production in the garden, orchard, and dairy. With a pig on the farm, waste is no longer a burden. All of our surplus calories become delectable pork.

## Pig Food from Your Property

Let's take a look around the homestead to identify some nutrient sources:

- **WEEDS.** How many wheelbarrows of weeds do you cart out of your garden every summer to the compost pile, hoping that the heap's internal temperature will get high enough to kill their seeds? Or to the burn pile, sending valuable carbon back into the atmosphere? Weeds are palatable to pigs, and many common weeds are high in protein and essential minerals. Ragweed, for example, has a dry matter protein content of 25 percent. If you have toxic weeds in your garden, you can choose to leave them. Pigs are smart; a pastured pig is exposed to many toxic weeds, and will quickly learn what not to eat.
- **INEDIBLE FOOD.** Overripe, underripe, damaged, or low-quality garden crops are haute cuisine in the pigpen. In addition, the stems, vines, hulls, tops, roots, and stalks of our food crops — practically any part of food crops inedible for humans — are welcome on the pig menu.
- **SURPLUS PRODUCE.** Think about all the surplus produce you have every year. Perishable produce is perfect pig food. And, for the more determined, there are easy-to-grow, high-yielding crops that are good for the garden and make excellent pig food as well. Kale is quality forage for pigs, and produces many pounds of green food with a small footprint. Turnips and rutabagas, heavy producers whose long, thick taproot will break up and aerate a heavy soil, have long been popular



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food

as animal feed in Europe. The mangel-wurzel is an enormous, sugar-sweet root crop that can grow up to 20 pounds, but is as easy to grow as its common garden brother, the table beet.

■ **COVER CROPS.** You can make cover crops serve dual purposes by planting crops that—when they’ve done their job of weed suppression, nitrogen fixation, or soil retention—can be cut or pulled for pig food. For example, we often substitute beans for clover in our fertility rotation. We plant them in tight rows so they’ll also suppress weeds. When they’re mature, we cut whole plants and toss them into the pig pen, where our animals gobble them up. If we leave the roots in the ground, we still get the benefit of their nitrogen-fixing nodules to add fertility to our garden soil. Our sow also loves daikon radishes; we can feed her as many as we like without making a dent in this crop’s ultraheavy production.

A winter or early spring cover crop of wheat, oats, or barley, combined with some field peas, makes a perfect pig crop when you cut it and haul it to the pig pen. Or, if your soil is favorable, bring the pigs in and let them harvest for themselves. A summer cover crop of buckwheat is often tilled in before it sets seed, but if you elect to let it mature to harvest for grain, be sure to offer the buckwheat “straw” to the pigs.

■ **ORCHARDS.** Traditionally, periodically running the family pig through the orchard was a way to boost the pig’s nutrients and clean up the orchard at the same time. From early fruit drop, to harvest time, to windfalls and late-winter pruning, the orchard has many nutrients to offer your pig. It’s no surprise that pigs love fruit, but maybe you didn’t know that they also love tree prunings. Throw some in the pigpen and watch your pigs devour them. Even better, young twigs, branches, and tree leaves are a rich source of minerals and fiber.

■ **HAY AND STRAW.** For more farm-raised pig food, look in the barn. Hay and straw add bulk, minerals, and ample energy to the pig diet. This isn’t limited to clean hay or straw, either; ruminant bedding is also welcome in the pigpen. Pigs will eat and derive some food value from the manure, and destroy ruminant parasite eggs and larvae at the same time. The bedding itself often has significant food value; straw, hay, and crushed corn cobs will all contribute to your pork chop production. Let that bedding serve as many purposes as possible before you cart it to the compost pile.

■ **KITCHEN SCRAPS.** Those wet, high-nitrogen messes left over from canning, freezing, fermenting, and dehydrating will draw scavengers, attract flies, and stink if added to the compost pile. Instead, offer your pigs tomato skins, apple peelings, wine must, beer mash, and the skimmings off the sauerkraut crock, and then cart their soiled bedding off to the compost pile.

### Pig-Approved Protein Sources

It’s clear by now that the homestead has plenty of calories to pad out our porkers. But what about protein? Garden, orchard, barn, and kitchen offerings may be high in energy and minerals, but they’re often deficient in protein. The solution to that problem is also to be found on our farms.

Leftover bones from making broth still hold lots of good stuff, and you’ll be amazed at how welcome they are in the pigpen; even the biggest beef bones will disappear. Do you soak your baking and roasting pans before cleaning? Scrape them out and put the soaking water in the pig bucket. This also holds true for scrapings from the bread bowl, leftover milk from drinking glasses, and cheese parings.

An even richer source of protein is generated whenever you butcher. After we dress poultry, for example, the guts, feet, and heads (if we’re

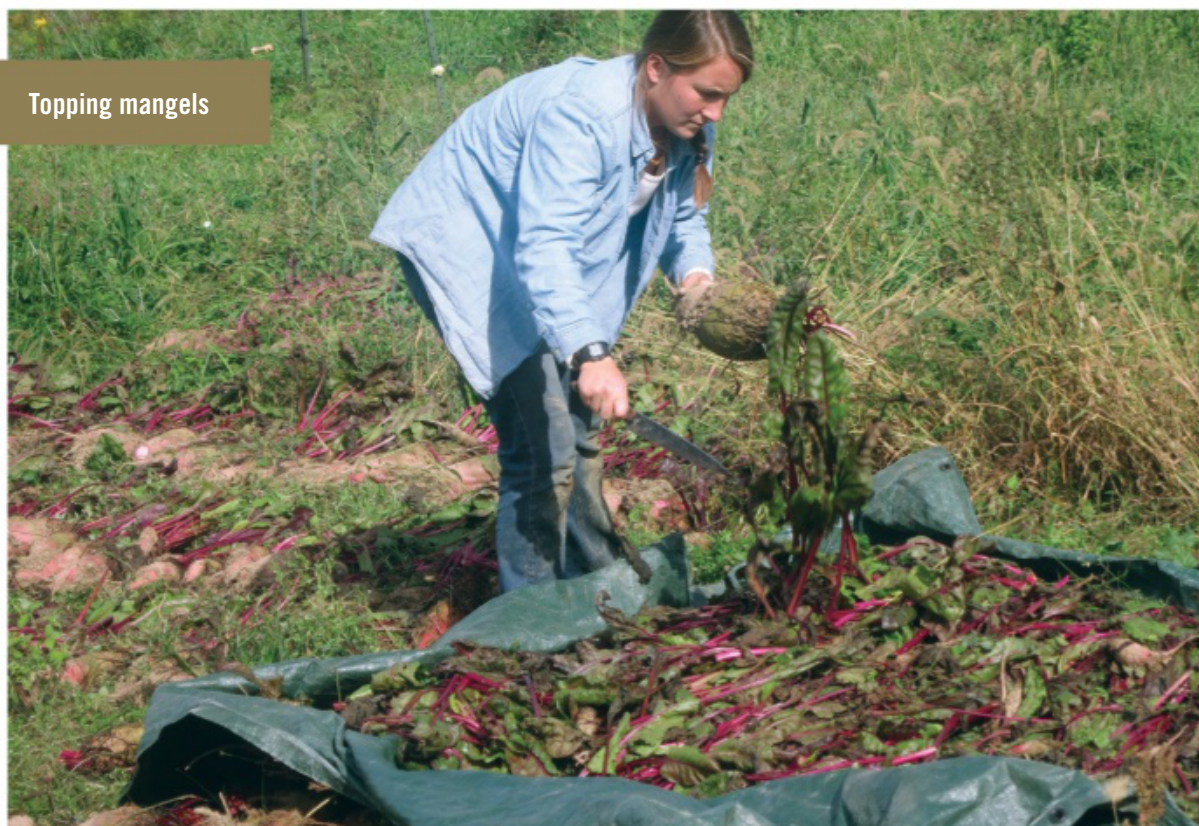


not using them for broth) are tossed into the scalding pot and boiled up for what we call “pig chicken soup.” Even the feathers are put into the pigpen; what the animals don’t eat gets added to their bedding, and, eventually, to the compost pile. Butchering larger animals—sheep, goats, cow, and deer—produces even more pig protein. The only thing we don’t feed pigs is, well, pig.

Use common sense when feeding protein to your pigs. Wild pigs are dangerous hunting animals. Even domestic pigs, if not handled with respect, can be a real risk to the farmer. Boiling butchering wastes, or searing them over the fire used for scalding the carcasses, is a good way to make sure the scraps taste cooked. Cooking animal protein before offering it to pigs helps keep them civilized.

When you have a dairy animal on the farm, you’re pretty much guaranteed to have excess milk and milk byproducts. Even a single goat producing just a few quarts a day can quickly overwhelm a small household. A family cow could be sending 2 to 5 gallons of milk to the house a day, or even more. Dairy animals and homestead pigs are a match made in heaven because milk—whole, skim, or buttermilk—and whey are excellent sources of the highest quality proteins. Just 3 or 4 quarts of milk provide more than enough protein for even the largest pig. Some people even raise pigs on just milk (or whey) and hay. Every drop of spare milk is welcomed in the pigpen.

Topping mangels



## Healthy Pigs, Healthy Homestead

As with all animal husbandry, a little common sense is needed. While pigs thrive on a diet of kitchen and garden waste, some things shouldn’t be offered in the pigpen. Discard canned foods with compromised seals instead of tossing them to pigs to avoid botulism poisoning. There are also some molds that may grow in improperly stored feeds that can be toxic to pigs. Wilted cherry tree leaves may contain cyanide compounds, so don’t feed cherry tree prunings in summer. When in doubt about the safety of a certain food, do a little research. Even though hogs are famously smart about knowing which foods are appropriate for them, exercise healthy caution when tossing your scraps.

With such a varied diet, the homestead pig is probably getting lots of vitamins and minerals. But, just to be sure, offering a mineral supplement can be a good idea. Ask for one at your local feed store (not the big farm store, but the elevator where they mix the feed). Or, offer a balanced natural mineral source, such as kelp.

Take a look around the homestead. You’ll probably find that you have dozens of untapped sources of pig food. Pigs will eat almost anything, and they love to eat, so let them start recycling your farm wastes, and see how great the results will taste. 🐷

*Beth and Shawn Dougherty have been farming together for more than 30 years, and have spent the last two decades on their homestead, Sow’s Ear Farm. Find them online at [www.OneCowRevolution.Wordpress.com](http://www.OneCowRevolution.Wordpress.com). The Dougherty’s book *The Independent Farmstead* is available below.*

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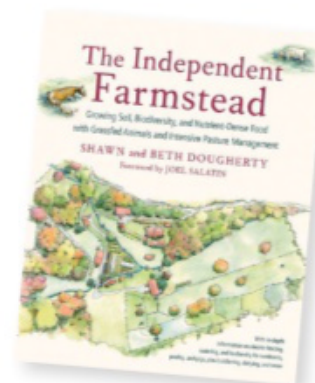
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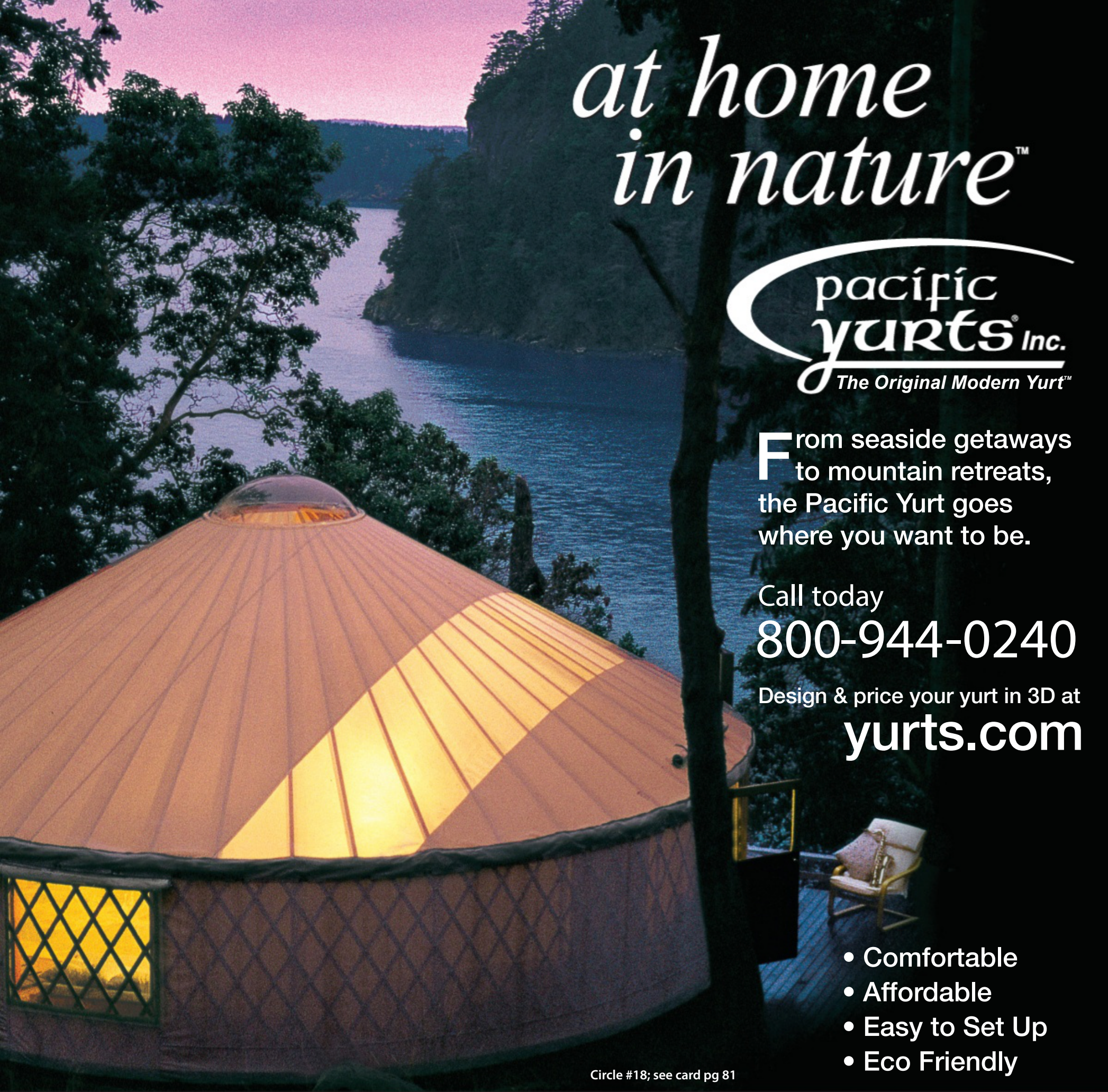
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# DIY

## PINE BRANCH CHAIR

Craft a one-of-a-kind piece of furniture using the supplies Mother Nature has to offer.

*By Marianne Svärd Häggvik*

**The** garden is a place for enjoyment and relaxation, but it's also a place where my creativity thrives. So when my friend Eva told me about the beautiful garden furniture she grew up with—made of gnarled branches—I decided to try making furniture with what was lying around my property.

During an autumn storm, several trees fell around our house. The logs were put to use, but the branches would've been thrown out or burned for firewood. Instead, I saved a few and built myself a rustic chair. While it has no straight lines, the chair is comfortable, rugged, and charming. It looks right at home in a corner of my garden by the blueberry bushes.

When building a chair out of tree branches, you can't really follow a detailed spec drawing. Instead, you'll have to work with the material and allow the chair to grow organically, step by step. To see what the chair will ultimately look like, you can tie its parts together with string or straps at the beginning. If you're not satisfied with the shape, you can look for other branches that fit together better.





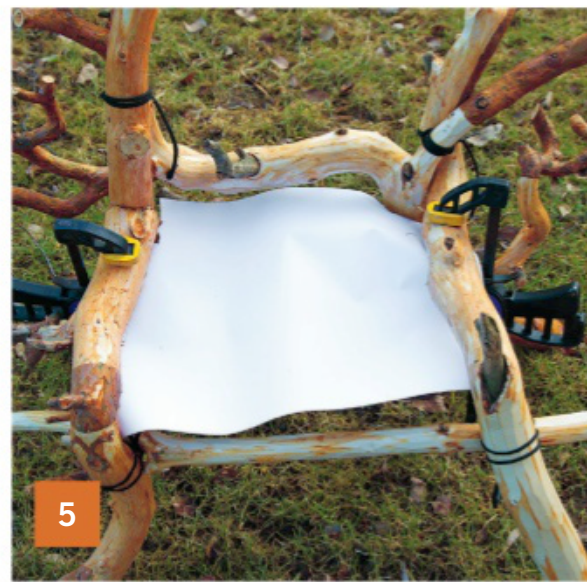
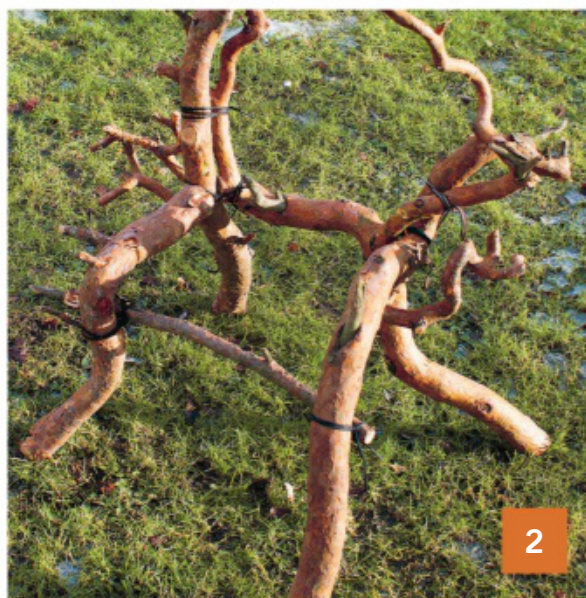
## Tools & Materials

- String or straps
- Utility knife
- Pruning saw
- Scissors
- Marker
- Bar clamps
- Jigsaw
- Drill
- Level
- Orbital sander and 180-grit sandpaper
- Pine branches,  $\frac{3}{4}$  inch to  $2\frac{1}{2}$  inches in diameter (10 to 15)
- Wooden plank, 16 inches square and  $1\frac{1}{2}$  inch thick (1)
- Self-tapping decking screws, 1 to  $3\frac{1}{2}$  inches long (20 to 30)

## Let's Get Started

1. Choose two branches of equal thickness that are naturally bent; these will serve as the front legs and side pieces. Piece these together with branches between the legs and the rear, and secure all in place with string or straps. Make sure the legs are a little longer than needed so you can trim them down to size later, as necessary.

**NOTE:** Oak and pine branches are usually crooked and gnarled, which makes them excellent for building chairs. Since pine trees had fallen around our house, that's what I used.







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**2.** Select two fairly straight branches for the crossbars that the seat will rest on. Fasten one crossbar between the front legs and the other between the back legs.

**3.** Disassemble the chair, and remove the bark on the branches with a knife.

**4.** Reassemble the branches, and tie the chair together with string.

**5.** Cut a piece of paper to fit inside the legs and back of the chair. Make the paper approximately the same shape as the frame's outer line. Position the paper under the frame and attach it with clamps.

**6.** Trace along the frame's inner edge on the paper template.

**7.** Remove the template from the frame. Draw a second line on the paper about 1 inch outside the first one. Cut along the outer line.

**8.** Turn the plank so the growth rings point up. Otherwise, the seat will become bowl-shaped when it settles.

**9.** Mark the paper template's outer lines on the plank, and cut out the seat with a jigsaw.

**10.** Adjust the blade on the jigsaw to a 45-degree angle.

**11.** Miter the top edge on the seat's back and side edges.

**12.** On the seat, mark out how much wood must be removed to insert one of the legs. Cut out the portion with the jigsaw, and test to see if the leg fits in the hole. Deepen the hole as needed. Repeat for all legs.

**13.** Place the seat on the crossbars, miter side up, and tie the chair together with string and straps.



**14.** Try to fit the seat into the frame. Mark the points where the seat must be tweaked, and trim it until you're satisfied.

**15.** Fasten the seat to the top edge of the frame with self-tapping screws.

**16.** Ensure that the seat rests firmly on the crossbars. Screw the crossbars to the legs. Then, screw the legs, the back edge, and the side branches so the legs are sturdy.

**17.** From below, drill screws through the crossbars into the seat to strengthen the chair.

**18.** Turn the chair upright and put shims under the chair's legs to make it level. Check both directions to make sure the seat is level.

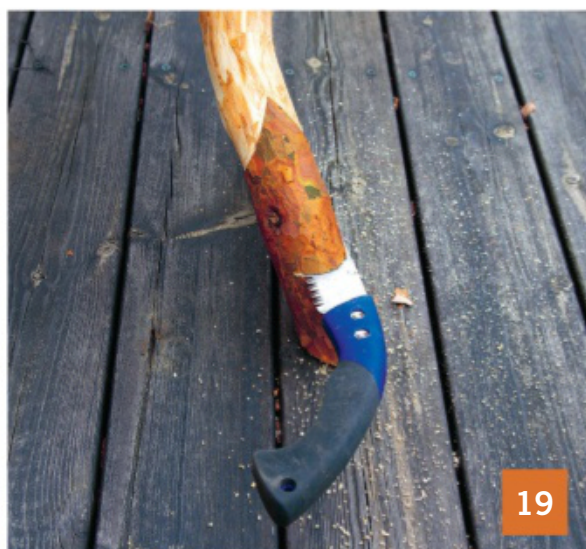
**19.** Mark the ends of the legs that are too long, and then trim with a pruning saw. Check that the chair seat is level.

**20.** Sand the seat smooth. If you don't have access to an electric sander, use sandpaper.

**21.** Choose two rounded branches to serve as armrests. Remove the bark, and cut the branches to fit the chair. Screw the armrests into the frame.

**22.** To decorate the back of the chair, find a lightly bent branch and remove its bark. Screw the branch to the back of the chair. Trim off any small branches, and the chair is finished! 🧰

*Marianne Svärd Häggvik is an engineer based in Stockholm and the owner of Heliconia Garden, a garden design company in Sweden. This is an excerpt from her book Rustic Garden Projects: Step-by-Step Backyard Décor from Trellises to Tree Swings, Stone Steps to Stained Glass (Skyhorse Publishing).*





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# COMPACT TRACTORS: WHAT TO CONSIDER WHEN BUYING

What things factor in to choosing appropriate compact tractors? *By Oscar H. Will III*

■ You've decided to take the financial plunge because your back just won't take all the lifting. You've put off those earth-moving projects long enough, but you need a machine that can do much more than dig. In two years, you want to make a little hay, but the driveway needs grading too. You've decided that a compact tractor will fit the bill, but there are so many choices. And what does shuttle-shift transmission really mean?

When it comes to choosing a first tractor, the process can be daunting, but armed with a little implement understanding and machinery know-how, you can learn to speak the dealer's language and get what you need.

Compact tractor models have proliferated in North America ever since Japanese manufacturers defined the market back in the 1960s. Today, the compact tractor arena is crowded with models that run the gamut from economy to entry level to fully tricked out. Add variations in chassis size and weight, widely ranging engine power, and transmission choices that are almost continuously variable, and you have a decision-maker's mess on your hands. Figuring out what you need is a little more difficult than figuring out what you want, but the process need not be as daunting as it initially appears.

## Begin with the Basics

Every tractor worth considering will have a clean, fuel-efficient diesel engine, transmission(s), rear 3-point hitch, rear drawbar, one or two power take-off (PTO) points, and a hydraulic system. Most of the tractors also will be equipped with four-wheel drive (if it's optional, I'd nearly always recommend investing in the option), a loader (invariably worth the money), and occasionally a backhoe or other mounted rear attachment. You should think of the tractor as a pulling/pushing machine as well as a platform for attaching and powering implements and other tools as diverse as emergency home generators, snow plows, and belly-mounted finish mowers. Basic tractors without any attachments will cost anywhere from about \$10,000 to well over \$30,000, depending on their power rating, size, and the level to which they're appointed with high-end engines, transmissions, and hydraulic systems.

## Power to the People

One of the first questions you'll need to answer in your quest for the perfect tractor relates to power—PTO power and pulling power. Unfortunately, most makers lead with net engine power, because it's a larger number than PTO power, but PTO power is important to know when you plan to run PTO-powered implements, such as rear shredder mowers and rotary tillers. The PTO power rating will determine the size of mower or tiller you can efficiently run with the tractor, not whether you can run one at all. If you need to mow with a 6-foot wide mower, you'll need more PTO horsepower than if you mow with a 4-foot-wide model. For most rural enthusiasts, PTO power in the 25 to 50 hp range should suffice.

Since many makers offer several tractor chassis sizes in overlapping hp ranges, you'll also want to consider the weight of implements and other devices you plan to push or pull with



the tractor. In general, the more the machine weighs, the more traction you'll have for moving and stopping. So, if you're like me and love the sound of a direct-injected, turbo-charged diesel engine's turbo spooling up, consider carefully whether you really need that extra power compared with the non-turbocharged engine. If you really don't need it, save yourself some money and buy what you need, rather than what you want. Likewise, if you need more PTO power, but not a heavier platform, consider making the power upgrade in a smaller chassis machine.

## Directional Forces

Compact tractor makers have gone to great lengths to market new machines that “drive just like your car.” What that really means is that designers have taken the traditional operating steps out of the operator's realm. There was a time when small tractors of all kinds had at least two, and sometimes three, gear selector levers: One controlled the speed range (high/low), one the speed (first through fourth gears), and many had a separate control lever for direction called a shuttle (forward/reverse).

For folks with plenty of tractor experience, this vintage-style setup makes complete sense, and the need to stop and clutch the tractor to change gears isn't an issue. Many of the more recent compact tractors have traded their traditional transmissions for a hydrostatic version that employs one or two pedals to control both speed and direction. An even newer variation on the pedal-controlled transmission theme is the continuously variable transmission (CVT), which uses mechanical speed modulation instead of hydraulic flow. In both cases, the “easy” transmission options add quite a bit to the tractor's price tag.

Generally, if you plan to do a lot of direction and speed changes, such as with intensive front-end loader work, the hydro or CVT will make that work

easier and arguably more efficient. The next best option would be a tractor with a synchronized or automatic clutching shuttle shift transmission. That way, you'd only need to slow and clutch for the directional changes. If money is worth more than convenience or your time, then you can go for the traditional straight gear transmission. You'll need to stop, clutch, and make a transmission shift to change directions, but in other operations, such as field mowing, the hydro, CVT, or shuttle options don't offer much advantage under most conditions.

## Dealing with Your Dealer

Face it, compact tractors simply aren't available from your local box store. It'll be difficult to make an anonymous purchase, as you'll have to interface with your local dealer. If your only dealership experience lies in negotiating for an automobile, try to put as much of that out of your mind as possible. A tractor purchase is the beginning of a long-term relationship (tractor service life is measured in hours and translated into decades in most cases, not years), and your dealer stands to make more profit from you over the years through the sale of parts, accessories, implements, utility

vehicles, and other extras. You can help ensure a good dealership experience by doing a little homework on the brand or brands you're interested in, and knowing exactly how you foresee using the tractor. Be upfront about what your spending range is, but know that there's some room for negotiation.

If the initial discussion makes you uncomfortable, feel free to admit that you don't know or understand something. Ask more questions, but resist the urge to finalize the decision during that discussion. Instead, take notes, go home, and do more research before coming back to the table.

Finally, insist on sufficient training and a significant test drive—most dealers will deliver a loaner machine to your place for a few days—before pulling the trigger. If you don't like the way a machine works, test drive another make or model. If you ultimately don't like the dealer, find another in your area. Once you make your purchase, read the owner's manual, keep safety your No. 1 priority, and turn all that farm work into fun! 🚜

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## A SELF-CARE ROUTINE FOR

# Spring

Craft a simple, skin-centric routine to stay invigorated from head to toe during this season of rejuvenation.

*By Janice Cox*

**Spring** is the season of renewal and celebration. The world is once again fragrant and green, the days are milder, and even the occasional rain shower is welcome because it helps plants and flowers flourish. After a long winter spent studying garden books and seed catalogs, I'm ready to get my hands dirty. In this season of change, however, shifts in the weather affect not only the land around us, but also our own skin. Exposure to stronger sunlight, warmer temperatures, and higher humidity means our bodies produce more sweat and oil, and our hands quickly get rough from work.

With a few simple self-care tips, you can easily adjust from the dry winter months to a new spring skin routine. Remember to always use a good sunscreen when you're outdoors. Consider a cotton neck scarf and a wide-brimmed hat to protect your skin from the sun. To keep your nails clean and supported, scratch a bar of soap or a lotion bar made with beeswax and coconut oil before putting on your garden gloves. Finally, learn to relax and take healthy breaks to increase your energy level. Try the following recipes, and enjoy the way your new body-care routine leaves you feeling refreshed.



# Recipes

## EGG MASKS

The egg mask, a classic facial, has been used for centuries. It consists simply of a raw egg spread on the face, left to dry, and then rinsed off with cool water. My grandmother used this mask once a week to keep her skin fresh and glowing. Below are a few variations on this at-home beauty staple. **Yield: 1 to 2 ounces, enough for 1 facial mask.**

■ **EGG MASK FOR DRY SKIN:** Mix together 1 whole egg and 1 tablespoon of honey.

■ **EGG MASK FOR OILY SKIN:** Mix together 1 egg white and 1 tablespoon of oatmeal. This mask is especially good for removing blackheads.

■ **EGG MASK FOR NORMAL SKIN:** Mix together 1 whole egg and 1 teaspoon of fresh sour cream. Sour cream is rich in lactic acid and helps soften and remove surface impurities and dead skin cells, leaving your skin soft and smooth.

**TO USE:** Spread on your face and neck, and let sit for 15 to 20 minutes. Rinse well with cool water.



## ALFALFA SPROUT SCRUB

Alfalfa sprouts are available in the produce section of most grocery stores. They make a vitamin- and protein-rich cleansing scrub that's beneficial for all skin types. They're also easy to grow at home. Use only organically grown seeds (available at most natural food stores and some garden shops).

**TO GROW YOUR OWN SPROUTS,** first wash  $\frac{1}{4}$  cup of alfalfa seeds, place them in a bowl or jar, and then cover with lukewarm water. Let stand overnight. Drain and rinse the seeds, and then drain again thoroughly. Place the seeds in a large glass jar, cover the top with

a piece of cheesecloth or nylon mesh, and secure tightly. Place the jar on its side, so the seeds form a thin layer, and leave in a dark, warm, humid place. Rinse the seeds at least three times every day by pouring lukewarm



water into the jar, swirling it around, and draining it. You should begin to see sprouts develop in 3 to 5 days. When small green leaves appear, you can place the jar in direct sunlight. When they're about 1 inch long, store the sprouts in the refrigerator, where they'll stay fresh for 3 to 5 days.

**Yield: 1 ounce.**

**1 tablespoon fresh alfalfa sprouts**  
**1 teaspoon rice flour or ground oatmeal (optional)**

Cut the sprouts into small pieces with kitchen scissors. For a smoother, cleanser-like paste, mix in rice flour or oatmeal and a little water.

**TO USE:** Wash your face with the alfalfa sprouts, and then rinse well with cool water. This treatment can be used all over the body.



An egg mask is an age-old facial.



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Circle #17; see card pg 81

### ELBOW GREASE

If you have dry, rough skin but long for it to be soft and smooth, you need to apply a little “elbow grease.” This oil-rich balm can be used anywhere you need a little extra skin-softening action.

**Yield: 4 ounces.**

- 1/4 cup grated cocoa butter**
- 2 tablespoons light sesame oil**
- 1 tablespoon avocado oil**
- 1 tablespoon grated beeswax**

1. Combine all the ingredients in a heat-resistant container. Place the container in a water bath, or in the microwave, and gently heat the contents until the cocoa butter and beeswax are just starting to melt.
2. Remove the container from the heat source, and stir until the oils and wax are combined. Pour the melted mixture into a clean jar, and allow it to cool completely.
3. Stir the cooled mixture.

**TO USE:** Massage into rough skin spots.

### THREE MUSKETEERS AFTERSHAVES

I named these three aftershaves after Alexandre Dumas’ popular musketeers, Athos, Porthos, and Aramis, whose famous motto—“One for all, and all for one!”—earned them an eternal place in literary history. In my opinion, they’re representative of three very distinct types of men.

■ **ATHOS** was a deep thinker and visionary who commanded great respect from his contemporaries. A born leader, Athos helped ground the group and keep them focused on the task or adventure at hand. For this man, I’ve created a classic aftershave made with dark rum and fragrant spices.  
**Yield: 4 ounces.**

- 1/2 cup vodka**
- 2 tablespoons rum**
- 2 dried bay leaves**
- 1/4 teaspoon whole allspice**



Oil-rich Elbow  
Grease softens skin.

- 1 small cinnamon stick**
- Zest from 1 small orange**

Mix all the ingredients together. Pour into a clean jar with a tight-fitting lid. Place the jar in a dark, cool place for 2 weeks. Strain off the liquid, and then pour it into a clean container.

■ **PORTHOS** had a zest for life. He was fun-loving and the center of any social gathering. Of the three musketeers, Porthos had the best sense of humor, so for him, we have an exhilarating menthol aftershave. Menthol crystals are found at drugstores and grocery stores, or you can substitute peppermint essential oil. **Yield: 4 ounces.**

- 2 tablespoons witch hazel**
- 2 tablespoons vodka**
- 1/8 teaspoon menthol crystals,**  
**or 2 to 3 drops peppermint oil**
- 1 teaspoon glycerin**
- 1/4 cup water**

Mix together all the ingredients, and pour into a clean bottle with a tight-fitting lid.

■ **ARAMIS** was handsome, religious, and poetic. He was the romantic of the trio, and his charm and passion for life infected all who surrounded him. For him, I’ve concocted a classic scent with light floral notes. **Yield: 8 ounces.**



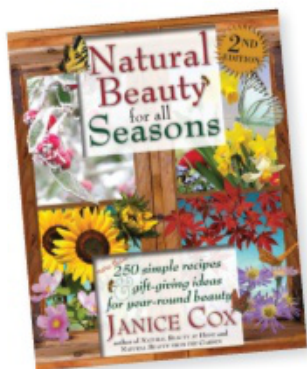
1/2 cup vodka  
 1/2 cup witch hazel  
 1 tablespoon dried lavender flowers  
 1 tablespoon dried sage leaves  
 1 dried bay leaf  
 4 black peppercorns  
 1 tablespoon glycerin

Mix together all the ingredients. Pour into a clean jar with a tight-fitting lid. Place the jar in a dark, cool place for 2 weeks. Strain off the liquid, discard any solids, and then pour into a clean container.

**TO USE:** Lightly splash on the face after shaving. 🍷

*Janice Cox is an author, the beauty editor for Herb Quarterly magazine, and a frequent speaker at Mother Earth News Fairs. These recipes are reprinted from her book, Natural Beauty for All Seasons, available below.*

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Circle #16; see card pg 81

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# Turkey Hunting

TIPS



Bag a bearded bird  
in no time at all  
by following this  
advice from an  
experienced hunter.

*By Dennis Biswell*

**I learned** to hunt wild turkeys through trial and error, beginning in 1988. I stuck with it, and after a few seasons of experimenting with calls, equipment, and techniques, I learned how to get close to this wary bird. If you're interested in doing the same, be sure to read up on your local turkey hunting regulations before you do anything else.

Wild turkeys are extremely skittish and moody. No single technique works on them every time. Consistently filling turkey tags requires learning several different techniques, being flexible, understanding all you can about your quarry, scouting the territory, developing your outdoor skills, and knowing your weapon.

## **Bearded Tom and Matted Hen**

Male turkeys have black, shiny, iridescent feathers; a beard, which is a clump of stringy feathers that grows from their chest; and spurs growing from the backs of their legs. While strutting, they change the color of the skin on their featherless heads to bright red, blue, and white.





As males age, their appearance changes. (See “Distinguish a Tom from a Jake,” Page 65.) Jakes are yearling males. They have short beards and spurs. The middle feathers in their fanned tails are longer than the outside feathers, forming an uneven fan. Toms are 2 years and older, and they have long beards and spurs. Their tail feathers form an even fan when strutting.

Hens are ground nesters, and, as a result, they need camouflage. They have dark-colored, matte feathers. Their featherless heads are pale blue; however, when they’re agitated, this can change to a dull red.

Most states allow the harvest of a bearded turkey during the spring hunting season.

## Jumpy Jakes

Wild turkeys have excellent eyesight and hearing. They’re food for many predators, and they know it. They travel in flocks, so there are always several pairs of eyes and ears watching and listening for danger.

They see color, just like us, and they can see ultraviolet light, which we can’t. To overcome the birds’ excellent eyesight, hunters should wear head-to-toe camouflage clothing. In my experience, the camo pattern isn’t as important as washing the clothing in a laundry detergent that doesn’t have ultraviolet brighteners, and sitting in places where you blend into the background. These advantageous places include against a tree that’s wider than your body, and in clumps of brush or other undergrowth. If ground cover is sparse, you may need to lay on your belly to hide, or use a blind. (For more information on blinds, see my article “Get Lost in Ground Blinds,” November/December 2019.)

Turkeys are extremely good at detecting unnatural movements. If you must move, do so slowly, when the bird isn’t looking directly at you. When stalking, don’t walk with the rhythmic pace of a human, and avoid letting your pant legs rub together as you step. Place each step wisely. Avoid dry vegetation and twigs. If you can’t avoid dry leaves, then walk like a feeding turkey: Use short, light steps. Pause and scratch the leaves on the ground. Learn to mimic the purrs of contented feeding turkeys, and use those calls while moving to avoid detection from your watchful prey.

TOP: The even fan and long beard is evident on this mounted tom.

LEFT: These spurs and beards, moving from small to large, were taken from jakes and older toms.

BOTTOM: Turkeys often roost in the large cottonwoods near the creek.

## A Typical Turkey Day

On a typical day, turkeys fly from their roost in the morning to forage for food and water and to preen. In the evening, they fly back into trees to roost.

Wild turkeys prefer to roost in tall, open-crowned trees. Here in northeast Kansas, those are cottonwood, sycamore, hackberry, and oak. These trees typically grow near water or along timbered hillsides.

Wild turkeys are opportunistic omnivores, and they eat a wide variety of plants, insects, small reptiles, and grains. Once they find a good feeding area, they’ll return to that place day after day. Dusting areas are





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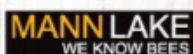
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Spurs of a mature tom



Turkey droppings



usually located on the edges of fields where they feed.

Spring is mating season for wild turkeys. In early spring, when the toms are trying to attract mates, they strut and fight each other to establish dominance. Strutting zones are in open places that are visible from long distances, so hens can see them. Later in spring, when the dominant toms have gathered a harem of hens, they'll follow the hens everywhere and drive away rivals. When the hens are nesting, the toms go back to their strutting areas, or move through their range looking for receptive hens.

■ **SCOUT IT OUT:** Finding roosts, feeding areas, travel routes, and strutting zones can all contribute to harvesting a tom. A good time to scout for roosts is mid-day, when turkeys are away feeding. Start by finding large open-crowned trees near water, and then look for turkey droppings on the ground. Turkey dung is typically  $\frac{1}{2}$  to  $\frac{3}{4}$  of an inch in diameter; up to 3 inches long; and white, gray, or green in color. Tom droppings will be thumb-sized and curled. Hen droppings are typically smaller and straight. Shed feathers will often litter the ground under roosts.

One of the best ways to hunt wild turkeys is to sneak into the landing areas near roosts well before daybreak and wait for the birds to fly down. Turkeys

## Distinguish a Tom from a Jake

Turkeys' flight feathers are shed and regrown a few at a time. A 1-year-old turkey has shed and regrown 4 to 6 tail feathers. This is why a jake's fan is uneven. At 2 years old, males have full-grown tail feathers.

Male turkey beards grow about 3 to 4 inches per year. If healthy, a jake will have a 2-to-4-inch-long beard in spring. A 2-year-old's beard will be roughly 6 to 8 inches. An older tom's beard will be 9 inches or longer. Maximum beard growth is determined by the environment.

Male spurs grow around  $\frac{3}{8}$  of an inch each year. A jake will have nubs. A 2-year-old will have round-tipped spurs between  $\frac{1}{2}$  and  $\frac{3}{4}$  inch long. At 3 years old, a male has 1-to-1 $\frac{1}{4}$ -inch spurs that are sharp, pointed, and beginning to curve. Length and curvature are added each additional year. Be careful when picking up a downed tom. Even in its death throes, a tom can deliver painful stabs with its spurs. Hens have the spur buds on their legs, but they don't grow long or sharp.

prefer to launch and land into the wind, so choose the landing zone based on wind direction. In other words, if the wind is from the south, choose a landing zone to the south of the roost. Roost areas are good places to hunt late in the day as the birds return.

If the land you hunt doesn't include roosts, then find feeding, strutting, dusting, preening, and travel routes, and sit in those areas. Finding these places will take a little more detective work, including walking game trails, sitting, watching, and listening. Like barnyard chickens, turkeys scratch when feeding. The ground in favorite feeding areas will bear the marks of this scratching. Dusting areas are typically on field edges where turkeys feed. They're shallow, turkey-sized depressions, where the soil has been turned to powder. Travel routes will have tracks, droppings, and shed feathers. They're often the same trails used by deer and other animals.

Look for terrain that you can use to move unseen from place to place. This includes creek beds and other low spots deep enough for you to hide in while traveling. Overgrown fence lines or ridgelines can also be good travel routes. Practice crawling from tree to



tree so if you find a tom and hens moving through the woods, you can approach while the birds aren't looking.

■ **TALKING TURKEY:** Turkeys are social critters that have their own vocabulary. Learning a few hen calls can often help bring in a tom. Toms make their presence known by gobbling and strutting, and expect the hens to come to them. Convincing a tom to come to a hen is going against their nature, but, fortunately, toms without hens will come looking for them.

The primary hen call is the yelp, a long-range call they use to locate each other. Typically repeated 5 to 7 times, yelps let other turkeys know the hen's location and that she's safe. If you learn only one call, learn to yelp.

Another helpful call is the feeding purr and putt. Turkeys use this short-range call to keep in contact and to let other members of the flock know everything is OK. I often use this call when moving, or to calm alarmed birds. When using purrs and putts, be careful not to putt aggressively. Loud putts are alarm calls that alert the flock to a predator. Excited hens will cackle, usually when flying down from the roost. When no other calls are working, sometimes cackling will bring in a tom.

Toms communicate too. The most iconic tom call is the gobble, which lets hens know where the tom is and calls them over. Toms will aggressively gobble from roosts and strutting zones. Strutting toms drum and spit. Both are quiet calls, and I can only hear them at short ranges. Drumming is a low-frequency sound that I feel more than hear. It sounds and feels like "thoomph, thoomph." If you feel and hear drumming, the tom's very close. When toms fight, they use fast, aggressive purrs. Fights gather

Jake and hen decoys



If you're hunting with a partner, have the caller move 80 to 100 yards farther away from the tom, with the shooter in between. If the tom comes looking for the hen, he'll walk up to the shooter.

a crowd. Mimicking a turkey fight will sometimes bring in toms.

The market offers a variety of manufactured calls, such as box, slate, push-button, and mouth. When calling, keep movement to a minimum. Mouth calls are best for this, as box,

slate, and push-button calls require hand and finger movements to operate. I've used all types of manufactured calls, but I enjoy learning and making sounds with my own voice. The advantage of voice calling is that I can mimic the emotion, tone, and tempo of the calls to match the turkeys'. Most inexperienced hunters call too often. Listen to what the turkeys are doing and base your calls on what you hear.

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When you're hunting fields and meadows, note that a tom will often stop and hang just out of range, expecting the hen to come to him. When this happens, stop calling and let him think the hen has lost interest. When he begins to move away, call softly like the hen has moved away.

If you're hunting with a partner, have the caller move 80 to 100 yards farther away from the tom, with the shooter in between. If the tom comes looking for the hen, he'll walk up to the shooter.

## To Decoy or Not to Decoy

I've used a variety of decoys, with mixed results. I've had times when toms ran to the decoys, and times when they saw the decoys and ran the other way. In my experience, decoys work best on early morning hunts and in areas where the turkeys don't have much time to study them.

Get the most realistic decoys you can afford. If you can only afford one, buy a hen decoy. If you can afford more, buy two hens and a jake. Set the jake decoy where you want to kill the tom. Set the hens off to the side, out of the line of fire. Sit about 20 yards from the jake in a spot where you're not directly within view of where you expect the tom to approach. If everything works, the jealous tom will run in to drive off the jake and court the hens. When it works, it happens quickly, so be ready.

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But be alert for other predators. I've had numerous coyotes, bobcats, owls, and hawks come looking for a turkey breakfast while I was trying to entice a tom.

## No Strut, No Rut

Whatever weapon you choose, practice shooting from different distances and positions. When using a shotgun, you'll aim for the turkey's head and neck, so shoot turkey targets at different ranges to see how many pellets hit inside the head and neck area.

I prefer to shoot a tom when his head and neck are extended rather than when he's strutting. To get a tom to break strut, I'll line up for the shot, push off the safety, and give a soft alarm putt. The tom will typically break strut and raise its head. If toms are in a group, you'll often have the opportunity to "double up," or kill



two birds. The toms are so intent on establishing dominance that any sign of weakness triggers an attack. After the shot, the startled birds will run a few steps. If they're still in range, another shot is possible. However, the toms will often come back to spur and wing whip the dying bird, giving you an opportunity for another shot. 🦃

*Dennis Biswell is a frequent contributor to GRIT. He's an avid outdoorsperson and turkey hunter.*

RICHARD BISWELL

An advertisement for Territorial Seed Company. The top half features a close-up photograph of various fresh vegetables, including garlic, onions, tomatoes, and bell peppers. Overlaid on the right side of the vegetable photo is the text "It all starts with a seed" in a white, serif font. The bottom half of the advertisement is a solid red banner. In the center of the banner is the company logo, "TERRITORIAL SEED COMPANY", in white, bold, serif capital letters. Below the logo, the text "ESSENTIAL SEEDS, PLANTS & SUPPLIES" is written in a smaller, white, sans-serif font. At the very bottom of the red banner, the text "FREE catalog • TerritorialSeed.com • 800-626-0866" is written in a large, white, sans-serif font.

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Take your culinary know-how to a new level with this DIY smoker.

*By Jake Levin*

**Cold** smoking is easier to manage than hot smoking because you don't have to worry about maintaining a consistent temperature; in fact, you don't even want heat from the fire to enter the smoking chamber—hence the name “cold smoking.” Once you've established a strong burn and a nice, steady stream of smoke, the process requires little attention. You'll only need to check the fire every now and then, and occasionally restock the wood.

However, building a cold smoker is a little more complicated than building a hot smoker, because you need to create two chambers: one that holds the food and smoke, and a separate chamber that holds the fire that generates the smoke. The two chambers must be connected to each other so the smoke can travel from one to the other while losing the heat of the fire.

The following instructions result in a smoker that's great for making cold-smoked bacon, fish, sausage, and smaller pieces of cured meat. It calls for using a 55-gallon drum, but any number of other objects will work, as long as they can safely hold a fire over a long period of time, are food-safe, and can be vented to exhaust the smoke. I've seen people use old garbage cans, kegs, large pots, terra cotta planters, cast-iron wood-burning stoves, and even a simple hole in the ground for a firebox. One creative and simple solution I've seen is connecting two grills together with piping—one grill serves as the firebox, and the other as the smoke chamber.



# Tools & Materials

- Power drill with ¼-inch step bit
- Reciprocating saw with metal-cutting blade
- Metal file or metal grinder
- 55-gallon steel drum with lid
- Paint, optional
- 1½-inch-long, ¼-inch-diameter, 20 TPI bolts with lock washers and nuts (4)
- Standard gate pull handle with appropriate hardware
- Fireproof vessel (woodstove, steel drum, etc.)
- 4 feet of 6-inch-diameter stovepipe
- 6-inch-diameter stovepipe elbows (2)
- 22½-inch-diameter grill grate

**1. Prepare your drum.** Remove any old paint or rust inhibitors from the drum. Once prepped, you can repaint the drum if desired. High-temperature paint isn't necessary, as your drum will never reach a high heat in cold smoking.

**2. Drill holes for the cooking grate.** Measure 7 inches down from the top of the drum. With the ¼-inch step bit, drill four holes equally spaced around the drum, about 18 inches apart. Make sure the holes aren't large enough for the bolt heads to slip through. Install the bolts from the outside so they stick out into the barrel. Fasten the bolts with nuts and washers. This is where you'll eventually place the cooking grate.

**3. Cut a hole for the stovepipe.** Flip the drum over so the closed end faces up. In the center of the bottom, mark a 6-inch-diameter circle. Drill a hole within the 6-inch circle, large enough to allow your reciprocating saw blade through. Using the reciprocating saw, cut out the 6-inch circle. This is where you'll feed the stovepipe in. Make sure you can easily slide the stovepipe into the newly cut hole. If not, file or grind the edges of the hole until you can.

**4. Drill holes for venting and the handle.** Measure 3 inches in from the edge of the lid and drill eight equally spaced, ¾-inch-diameter holes around the lid, about 6½ inches apart. Then, drill holes fitted to your gate pull handle, and install the handle on the lid.

**5. Choose a spot for your smoker,** preferably where the grade is on an incline. Decide where you're going to install your cold-smoke drum. The stovepipe should rise slightly as it goes from the firebox to the smoking chamber. Having a pitch on the stovepipe ensures that the smoke is pulled from the firebox into the chamber. Mark on the ground where you'll put the smoking chamber, firebox, and pipe. There should be at least 4 feet between the firebox and the smoking chamber.

Once you have your smoking chamber prepped, there are two different methods of installation to choose from. Below are the steps for both a buried installation and an aboveground installation.

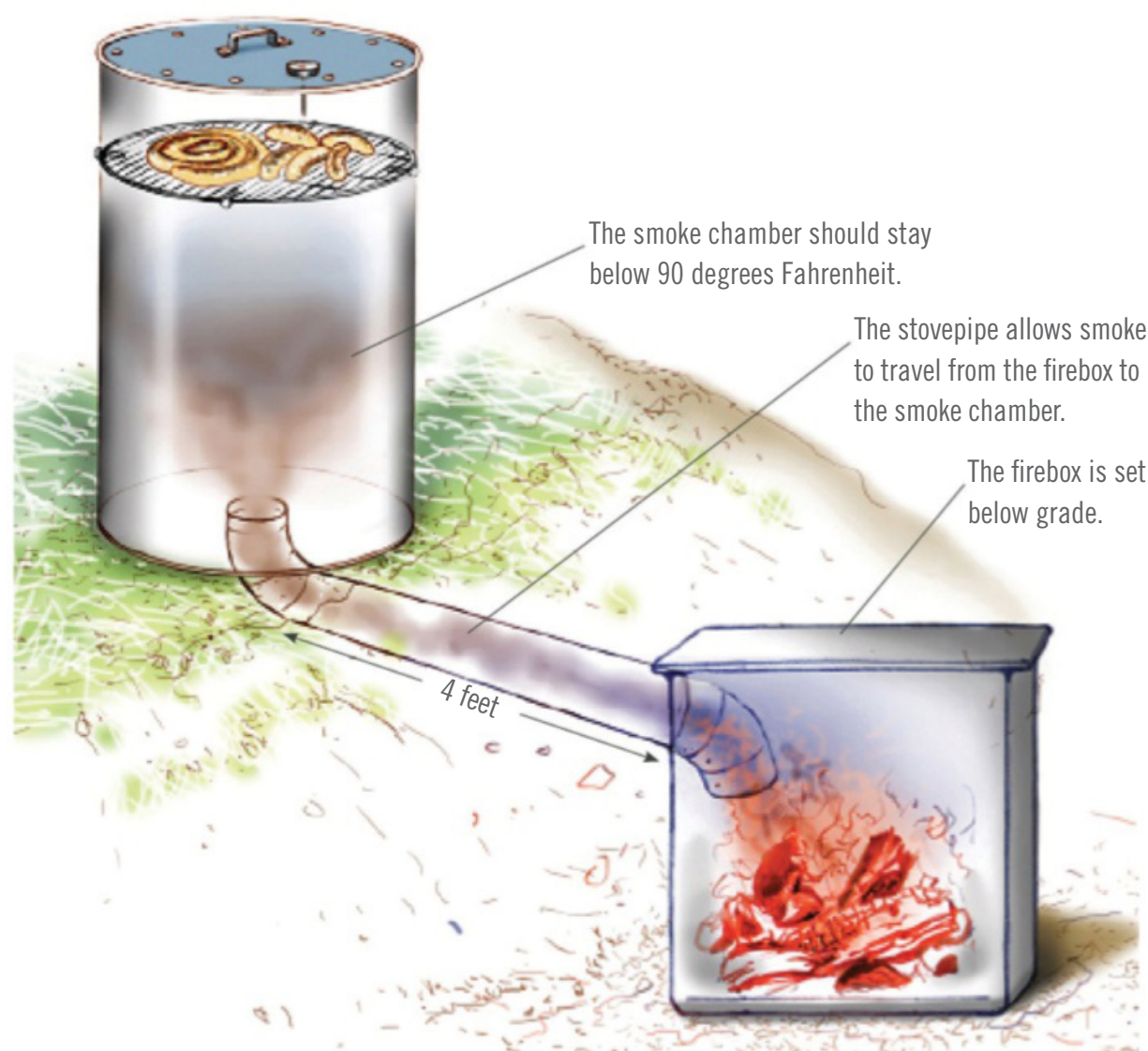
## Option 1: The Buried Firebox

If you want this smoker to be a permanent installation, you can bury some of the features, such as the stovepipe and firebox, in the ground.

### 1. DIG A TRENCH FOR THE STOVEPIPE.

The trench should be wide enough to fit the 6-inch stovepipe, and should keep a 5- to 10-degree pitch going upward from the firebox to the smoking chamber. Ideally, the trench will rise 1 inch for every foot, creating a 5-degree angle. At this angle over a 4-foot run, the stovepipe will be 4 inches higher at the smoke chamber than at the firebox.

**2. CHOOSE A FIREBOX.** Your firebox — the space where you burn the fuel to generate smoke — can be nothing more than a hole in the





An aboveground installation requires a man-made slope to ensure that the smoke chamber is 4 inches higher than the firebox.



ground. If you decide to just dig a pit, make it about 2 feet deep and 18 inches in diameter.

If you'd rather have a firebox less prone to flooding and erosion, however, use another steel drum, metal garbage can, cast-iron kettle, large terra cotta planter, or (one of my favorite solutions) a small wood-burning stove. Whatever you use for the firebox, it needs to be able to connect to the stovepipe, and it should be enclosed or coverable so that the smoke is forced into the stovepipe and up into the smoking chamber. The firebox should also be level at its base. A piece of scrap metal or a large, flat stone will work well as a lid.

**3. LAY THE STOVEPIPE AND SMOKING CHAMBER.** Lay the stovepipe so that it enters the firebox and reaches where you intend to place the smoking chamber. Attach the stovepipe elbows, with one elbow facing downward into the firebox and the other turned upward to where the smoking chamber will be. Carefully place the drum over the upward-pointing stovepipe, fitting the end of the stovepipe into the hole you previously cut on the bottom of the drum.

**4. INSTALL THE GRATE.** Install the grill grate in the smoke chamber by placing it on the bolts.

Cold smoking is easier to manage than hot smoking because you don't have to worry about maintaining a consistent temperature; in fact, you don't even want heat from the fire to enter the smoking chamber — hence the name “cold smoking.”



## Option 2: Aboveground Installation Without Sloping Site

If you want the smoker to be a temporary installation, don't feel like digging, or don't have a place in your backyard with a suitable incline, you can install it aboveground. The basic principles of installing it in the ground still apply: The pipe should rise 1 inch for every foot, creating a 5-degree angle, so that over a 4-foot run, the pipe will be 4 inches higher at the smoke chamber than at the firebox. This design requires lifting the smoking chamber onto cinder blocks to achieve the proper stovepipe angle.

**1. CHOOSE A FIREBOX.** A small cast-iron woodstove works well for this. These are relatively easy to find, inexpensive, designed to hold long-burning fires, and built to have the smoke piped out of them. Alternatively, you could use another steel drum, a metal garbage can, or anything that can hold a fire. Just remember that you'll need to connect the stovepipe to the firebox, and that you'll need to be able to cover the fire (if the firebox is open), forcing the smoke to travel into the stovepipe and up to the smoking chamber.

**2. CONNECT THE STOVEPIPE.** Fit the stovepipe to the firebox, using one of the stovepipe elbows.

**3. RAISE THE SMOKING CHAMBER.** Calculate the height of the smoking chamber end of the stovepipe based on the required pitch. This is the height at which the bottom of the smoking chamber should sit. Prop up the smoking chamber to the calculated height, 4 feet away from the firebox. I use cinder blocks because they're inexpensive and plentiful on my property. You can also build a wood frame or weld a metal frame. Be sure you don't block the hole cut into the bottom of the smoking chamber.



#### 4. CONNECT THE SMOKING CHAMBER.

Connect the smoking chamber to the firebox with the remaining stovepipe elbow.

#### 5. INSTALL THE GRATE.

Install the grill grate in the smoke chamber by placing it on the four bolts. 

*Jake Levin is a butcher and charcuterie expert. This is excerpted with permission from his book Smokehouse Handbook (Storey Publishing), illustrations by Michael Gellatly, available below.*

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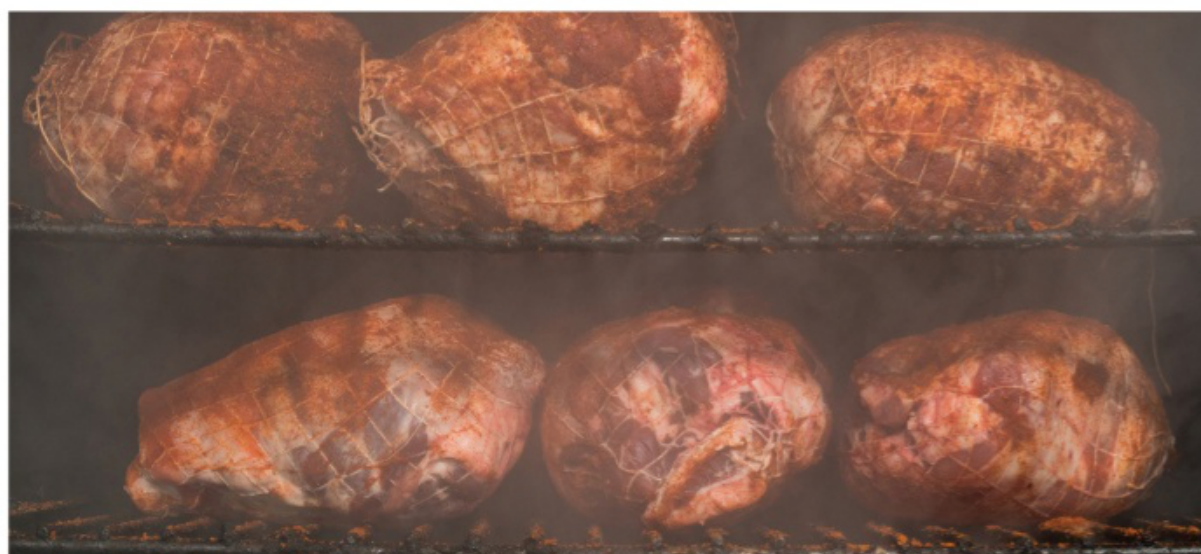


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Circle #3; see card pg 81





# TRUTHS ABOUT TURTLES

Familiarize yourself with the different types of prehistoric reptiles living in your pond. *By John Marshall*

Turtles have been around for more than 200 million years, making them among the oldest surviving land animals on Earth. We all have a picture of what a turtle looks like, but what makes a turtle a turtle?

The first distinguishing characteristic is its shell, which is formed by the fusion of the backbone, vertebrae, and ribs to form a box made of bone and cartilage. The top shell is called the “carapace,” and the bottom shell is known as the “plastron.” The two are joined by the “bridge.”

Another feature of turtles, as is the case with most reptiles, is that they lay eggs. Even aquatic and marine turtles that spend most of their lives in the water must come onto dry land to lay their eggs. The eggs are buried in the soil or under decaying vegetation, where they then incubate. Turtles don’t provide any care for their eggs or young; once the eggs are deposited, they’re on their own.

One more characteristic of all modern turtles is that, like birds, they don’t have teeth. Most turtles have beak-like mouths, and food is swallowed whole or crushed by their bony jaws.

There are more than 300 species of turtles worldwide, with more than 50 in the United States and Canada. They can be loosely grouped into five large categories: snapping, soft-

shelled, aquatic and pond, box turtles and tortoises, and sea turtles.

## Common Snappers

These truly ancient-looking animals have large heads, long tails, and hooked snouts, and they’re aquatic, only leaving the water to bask in the sun and lay eggs. There are two species in North America: the common snapping turtle (*Chelydra serpentina*) and the alligator snapping turtle (*Macrochelys temminckii*). The alligator snapping turtle is the largest freshwater turtle in the world, capable of reaching 200 pounds and more than 2 feet in length, and it has a distinctively ridged carapace. The smoother-shelled, common snapping turtle, while not as large, may still weigh as much as 35 pounds and have carapace lengths of 1½ feet.

Common snappers are found in slow, freshwater currents throughout the eastern and central U.S. and southern Canada. In peninsular Florida, the common snapping turtle is replaced by a different subspecies called the Florida snapping turtle. When on land, the common snapper is extremely aggressive if confronted by a predator (or human) and can deliver a nasty bite from its powerful jaws and hooked, beak-like mouth.

Alligator snapping turtles are found mostly in the southern U.S. They inhabit large, slow-moving rivers and swamps. Adult alligator snappers, while ferocious-looking, are much more docile than common snapping turtles. When cornered on land, alligator snapping turtles simply sit and gape open-mouthed—although their bite can still take off your finger.

Though both species are omnivores, unlike common snappers, alligator snapping turtles don’t pursue their prey. Instead, they catch their food by “fishing” for it with a worm-like appendage at the bottom of their mouth. This “lure” is wiggled to attract a curious fish, tadpole, or crayfish to its doom.

## Aggressive Soft-Shells

Perhaps the oddest of the turtles are soft-shells, so called because their plastrons are covered with skin instead of hard plates called “scutes.” There are four species of soft-shelled turtles across North America: the spiny (*Apalone spinifera*), midland



(*Apalone mutica*), Gulf Coast (*Apalone calvata*), and Florida (*Apalone ferox*). Soft-shelled turtles are relatively large, some with shell lengths of almost 25 inches, although 12 to 18 inches is more common.

Soft-shells inhabit large creeks, rivers, and farm ponds, where they feed on crayfish, snails, mussels, frogs, and fish. In addition to their distinctive, pancake-like shell, these turtles have long necks and pointed snouts with the nostrils at the very tip. Soft-shelled turtles are extremely aquatic in nature, rarely leaving the water except to lay eggs.

In shallow water, they typically bury themselves in mud or sand and extend their heads to the surface to breathe. In deeper water, soft-shelled turtles can remain submerged for long periods of time, thanks to their ability to absorb oxygen through their skin, and by pumping water in and out of their throats.

Soft-shelled turtles can be very aggressive when handled. Their long necks allow them to reach behind them or to the side and deliver a nasty bite. Their soft, leathery shells also make them difficult to hold on to. Like their cousins the snapping turtles, large adults in particular should only be handled by experienced professionals.

## Sliders, Sawbacks, and Cooters

The largest group of turtles in North America is pond and river turtles. This diverse group lives in a wide variety of aquatic habitats and includes pond sliders, map turtles, diamondback terrapins, river cooters, painted turtles, red-bellied turtles, sawbacks, bog turtles, Blanding's turtles, and chicken turtles. Most of these are medium to large in size, with shell lengths from 6 to 12 inches.

Perhaps the best known turtle globally is the red-eared slider (*Trachemys scripta elegans*), recognizable by the thick red stripe behind each of its eyes. This creature's native range covers the southern and central U.S., where it inhabits rivers, lakes, swamps, and farm ponds. However, red-eared sliders have also been widely sold as pets throughout the world, which has led to them being released into the wild in far-flung areas. They're now considered one of the world's most invasive species. Red-eared sliders feed on a variety of plants and animals, with

young turtles requiring more animal protein than adults.

Common map turtles (*Graptemys geographica*) are medium-sized reptiles found mostly in rivers and large lakes. Their name comes from their ornate carapace patterns that resemble the contour lines on a map.

Closely related to map turtles are diamondback terrapins (*Malaclemys terrapin*), so-called because of the concentric rings on their carapaces. They're unique as North American turtles go, in that they live only in brackish coastal marshes and estuaries along the Eastern Seaboard and Gulf Coast. They feed mostly on crabs, clams, and snails. Diamondback terrapins can live in strongly saline waters for extended periods of time and have special glands to secrete excess salt.

Unlike map turtles or red-eared sliders, chicken turtles (*Deirochelys reticularia*) are named for the flavor of their meat. They're also known for their unusually long necks and the yellow stripes on their thighs.

While most turtles thrive in warm climates, some species have adapted to cooler environs. The bog turtle (*Glyptemys muhlenbergii*) is North America's smallest, with full-grown adults reaching a mere 4 inches. They're found mostly in the northeastern U.S., with an isolated population in the southern Appalachians of Tennessee, North Carolina, and northern Georgia. As the name implies, their preferred habitat is bogs and wetland areas.

The Blanding's turtle (*Emydoidea blandingii*) is a medium-sized reptile



Page 74: An eastern painted turtle basks in the sun. Top: A common snapping turtle lays her eggs in a shallow, bowl-shaped nest, which she dug in a sunny and well-drained location. Bottom left: Like their cousins the snapping turtles, soft-shelled turtles can be aggressive when confronted. Bottom right: The Blanding's turtle can be identified by its bright-yellow chin and wetland habitat.



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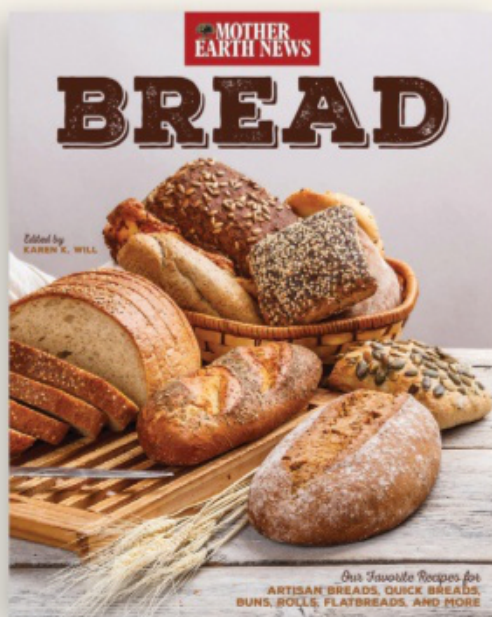
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found in the north-central U.S. and eastern Canada, especially around the Great Lakes. Blanding's turtles prefer wetlands and are distinguished by their bright-yellow chin.

## Boxy Turtles and Tortoises

While most turtles are associated with water, some have adapted quite well to life on land. Among these are box turtles and tortoises. The box turtles include the eastern box turtle (*Terrapene carolina*), which is found throughout most of the eastern and central U.S. These 4½-to-7-inch reptiles inhabit forested areas where they feed on a wide variety of foods, such as berries, insects, and mushrooms. The ornate box turtle (*Terrapene ornata*) inhabits prairies and shrub habitats, primarily in the Great Plains. It can be distinguished from its eastern counterpart by the bright yellow lines decorating its plastron and carapace, and its non-webbed feet.

All box turtle species get their name from the ability to pull their head and feet inside their shells and close up into a "box." This is made possible by a hinged plastron. This is the box turtle's response when in danger, as it protects them against most predators.

Tortoises in North America are represented by four species, all found in the extreme southern U.S.

The gopher tortoise (*Gopherus polyphemus*) inhabits primarily the dry forests of coastal areas of the southeastern U.S. This is the only North American tortoise found east of the Mississippi River. It feeds on grasses and other herbaceous vegetation.

The desert tortoise (*Gopherus agassizii*), as its name implies, is found in the Mojave and Sonoran deserts of southern California, Nevada, Utah, Arizona, and northern Mexico. It feeds on succulent plants, such as cacti.

The Texas tortoise (*Gopherus berlandieri*) lives in extreme southern Texas and areas of northeastern Mexico. At about 8½ inches long, Texas tortoises are the smallest North American tortoises. They feed on grasses and whatever succulent plants might be available, such as the prickly pear cactus.

The Bolson tortoise (*Gopherus flavo-marginatus*) is the largest North American species, with a carapace length of about 1½ feet. Sometimes called the giant Mexican



tortoise, this herbivore lives in the isolated deserts of north-central Mexico. It's only been known to science since 1959.

As the scientific name implies, these tortoises dig like gophers, making burrows in which they live and escape heat, cold, and fire. The one exception is the Texas tortoise; it either uses the burrows of existing animals (such as armadillos), or digs a shallow depression at the base of a tree or shrub.

## Deep Sea Divers

The largest of all turtles are the sea turtles, of which there are seven species. Six of these are found in North American waters: the leatherback (*Dermochelys coriacea*), the green sea turtle (*Chelonia mydas*), the loggerhead (*Caretta caretta*), the hawksbill turtle (*Eretmochelys imbricata*), Kemp's ridley (*Lepidochelys kempii*), and the olive ridley (*Lepidochelys olivacea*).

By far the largest species of sea turtle—and indeed, one of the largest living reptiles on Earth—is the leatherback, reaching up to 8 feet long and weighing as much as 2,000 pounds. As the name implies, leatherbacks don't have a bony carapace and plastron. They have thick, leathery skin ridged with bone, and though they're mostly black, each adult has a pink spot on the top of its head. Leatherback sea turtles are masters of the deep, having been documented diving to depths of up to 4,000 feet. They cover vast distances in their travels and can range from the Caribbean to New England and the Maritime Provinces. Jellyfish are the main staple of their diet.

The other species of sea turtles are found mostly in tropical and warm, temperate waters. They live most of their lives in the ocean, coming ashore only to lay their eggs. As with most other turtles, the sex of the young is determined by the temperature at which the eggs incubate. Warm temperatures produce mostly females, and cooler temperatures result in mostly males.

Green sea turtles are tropical and found mostly in shallow seas offering plenty of algae and seagrass to eat. This green diet gives the turtle the green body fat for which it's named.

Characterized by a large head with blunt jaws, loggerhead sea turtles are wide-ranging and might live near shore or hundreds of

miles out at sea. They feed on a wide range of marine organisms, including the Portuguese man-of-war with its stinging tentacles.

Decorated with splashes of yellow, orange, and reddish-brown, by far the most colorful and tropical species of sea turtle is the hawksbill. Hawksbill turtles are most associated with coral reefs, where they use their long, pointed beaks to pry food from the crevices of corals and feed on sponges.

The Kemp's ridley turtle is considered the smallest of the sea turtles, with a maximum carapace length of less than 30 inches. It feeds on a wide variety of marine invertebrates in shallow coastal waters.

The olive ridley is found throughout the Pacific, Indian, and southern Atlantic oceans. They're the second smallest of the sea turtles, behind the Kemp's. They feed on fish, invertebrates, and algae. Along with the Kemp's, olive ridley sea turtles are especially known for their unique and synchronized nesting ritual known as *arribada*, meaning "arrival by sea," during which

thousands of females nest simultaneously over small stretches of beach.

## Turtles in Trouble

Many turtle species are in trouble, both in North America and around the world. The causes include the over-hunting of both adults and eggs for food; over-collection of the animals for the pet trade; pollution; and most notably, habitat loss. Other species, such as the red-eared slider, are doing quite well and have even become pests in the parts of the world where they were introduced.

Species with limited habitat requirements and geographic distributions are especially susceptible to population declines. But even widespread species, such as the sea turtles, have declined dramatically throughout their range. 🐢

*John Marshall is a stormwater inspector for the city of Mobile, Alabama. He lives on the eastern shore of Mobile Bay with his wife and family.*



Top left: The small bog turtle has orange-yellow patches on the sides of its head. Top right: Diamondback terrapins are named for the concentric rings on their carapaces. Bottom left: Land-dwelling box turtles can pull their heads and feet into their shells and close up into a "box." Bottom right: North American *Gopherus* tortoises dig burrows, like gophers, for security.



**23**



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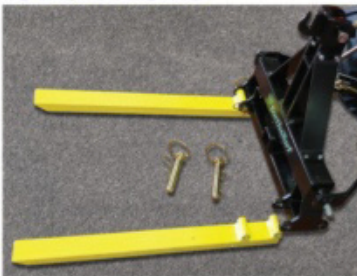
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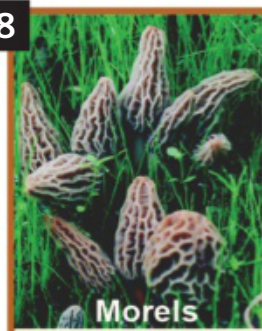
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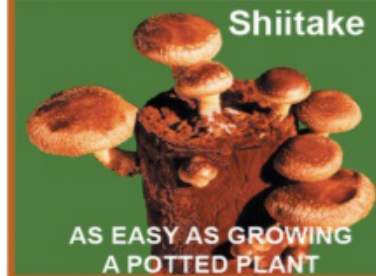
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*Story and photos  
by Jeannette Beranger*

**Sheep** come in all shapes, sizes, and colors, but among them, the British longwool breeds are considered royalty. The Lincoln is the largest of the longwools, and over the years, I've had the pleasure of visiting several flocks in the U.S. and Canada. I still remember the first time I looked at one of their fleeces, so brilliant it shined like foil in the sun. But fleece alone doesn't make a sheep, and this old British breed also offers some culinary delights. Good things can come in big packages, and the Lincoln seems to have it all, wrapped up in one versatile sheep breed.

### **Long-Reigning Longwool**

The history of British longwools dates back to the Roman occupation of Great Britain. Longwool sheep were documented on the European continent as early as the second century, and the Romans are thought to have brought them over to Britain, though the sheep persisted for centuries after the Romans left. They were famously depicted in the *Luttrell Psalter*, an illuminated manuscript commissioned by Sir Geoffrey Luttrell, Lord of the Manor of Irnham in Lincolnshire in the 1300s.



In the 1700s, famous livestock breeder Robert Bakewell became interested in Lincoln Longwools. Bakewell was intent on creating a new and improved Leicester sheep breed, which we know today as the Leicester Longwool. He crossed Lincolns with other native stock to breed productive animals with unbelievably lustrous coats. New Leicester rams were later crossed with old Lincoln ewes to produce an improved breed of Lincoln. More refinements and improvements were made to the breed over time to produce today's highly productive meat animals with glorious fleeces that made many flock owners in Lincolnshire rich.



Corn-based diets can ruin even the best of heritage breeds, and will tend to give the meat a gamy taste. For ideal flavor, animals should be raised entirely on grass and natural forages — with little to no corn — to ensure the highest quality.

### A Hefty Heritage Breed

Lincoln Longwools are massive, with rams topping 300 pounds and ewes weighing in at just over 200 pounds. Thankfully, despite their impressive size, they have a gentle disposition. Their wool grows quickly, reaching lengths of about 12 inches per year, with each animal producing 12 to 16 pounds of wool

annually, if managed properly. Good nutrition and careful management of the fleece will produce strong and lustrous fiber. Renowned author and fiber artist Deborah Robson writes in *The Fleece & Fiber Sourcebook*: “For sturdiness in a wool, for length, and for large fleeces, it’s hard (dare we say, impossible?) to beat a Lincoln Longwool.”

My first encounter with Lincolns was on the farm of Brian Larson in Michigan. Larson is a former president of the National Lincoln Sheep Breeders Association and a recognized master breeder. He described the Lincoln as “high volume” sheep with big rumens, large bodies, strong and wide loins, and good bone mass. The breed comes in white or natural-colored fleece. Larson prefers the white because it accepts dye beautifully and can be more versatile. For those not wanting to use dye, the naturally colored sheep offer some beautiful choices, with some including silver, brown, and even black in the same fleece. The British don’t recognize the natural-colored Lincolns, but fortunately all colors are accepted in the U.S. and are managed separately in two studbooks for the breed.

“The Lincoln is a large breed, so you have to be ready to handle animals of their size, and have enough space to accommodate them properly,” Larson says. They’re easy keepers, he says, and the lambs are born long and lean, which allows for ease of birthing.





White fleece



White wool

## The Fall of the House of Mutton

No discussion of the Lincoln would be complete without exploring the culinary properties of its meat. The sheep are particularly famous for hogget, which is most often defined as the meat from a sheep between 1 and 2 years of age.

Larson was kind enough to share half legs and a shoulder roast of his Lincoln hogget so I could experience the taste and aroma of this amazing meat. I did quite a bit of homework and came up with a cooking strategy based on the low-and-slow philosophy to bring out the best in this kind of grass-finished meat. The plan was to prepare the meat and then serve it to the staff at The Livestock Conservancy office so we could have a group discussion about its qualities.

I decided to prepare the cuts of meat using two different methods, taking some inspiration from one of my favorite sheep books, *Much Ado About Mutton* by Bob Kennard. This book is an amazing resource that expertly dispels the myths arising in the mid-20th century that caused hogget and mutton to be viewed as inferior to lamb. Prior to that time, if you wanted to impress someone with a fine dinner, you would serve a nice piece of mutton. A quote in the book from Pierre des Essarts, an 18th-century French actor, sums up the past sentiment of mutton: “Mutton is to lamb what a millionaire uncle is to his poverty-stricken nephew.”

The reputation of this once highly regarded meat was destroyed through a cruel act of fate during World War II. Sheep were hastily butchered, prepared, and canned to send to the troops, with little regard for hang time. Ultimately, the taste of the meat was ruined, making it barely edible for the hungry soldiers, who were then left with nothing else to eat. Afterward, the mere mention of mutton was an unpleasant reminder of wartime canned meat. Mutton rapidly lost favor as tastes swayed toward the much milder flavor of lamb.

It's said the keys to good hogget or mutton are breed, diet, and hang time. Lincoln has long been reputed as a fine producer of hogget. Corn-based diets can ruin even the best of breeds, and will tend to give the meat a gamy taste. For ideal flavor, animals

## Longwool Links

For more information on Lincoln Longwools and working with hogget or mutton, visit:

■ National Lincoln Sheep Breeders Association, [www.LincolnSheep.com](http://www.LincolnSheep.com)

■ The Livestock Conservancy, [www.LivestockConservancy.org](http://www.LivestockConservancy.org)

■ Much Ado About Mutton, [www.MuchAdoAboutMutton.com](http://www.MuchAdoAboutMutton.com)

should be raised entirely on grass and natural forages—with little to no corn—to ensure the highest quality. After that, it's a matter of hang time for the carcass at the abattoir. Ideally, 1 to 2 weeks hang time is perfect for mutton and hogget. (Older sheep require longer aging times in the refrigerator. Many butchers don't like to hang that long, because the meat takes up space needed for incoming product.) We purchased a large cooler to finish aging the meat at home and a commercial-



Prepped leg



Cooked leg



grade vacuum sealer so the meat could be packaged and stored for up to a year in a freezer without the threat of freezer burn.

## An Arresting Aroma

I prepared the 2-pound shoulder roast using a modified version of a recipe I found in *Much Ado About Mutton* for slow-baked mutton shoulder. I started with lightly browning three thickly sliced onions in a little olive oil in a cast-iron Dutch oven. I removed them, and then rubbed the meat with salt and pepper and browned it on all sides in the same pan. Once browned, I added garlic, white wine, and some stock (you can use either lamb or chicken). I then cooked the roast, covered, in the oven at 325 degrees Fahrenheit for about 2 hours, and I basted it every 30 minutes. When it was finished, I made sure the juices from the meat were running fairly clear. Then, while the meat was resting, I took the leftover liquid, along with the onions, and used an immersion blender to mix it into a light and velvety velouté sauce to accompany the meat.

For the 3-pound leg roast, I went with one of my favorite coatings for all things sheep: Julia Child's recipe for a mustard marinade for lamb. The mixture includes Dijon mustard, soy sauce, ginger, rosemary, and olive oil. I coated the meat with this marinade and placed it, uncovered, on a rack over a pan with stock to keep the roast moist. Since the basting process, cook time, and oven temperature were the same for the leg and shoulder, I was able to cook them at the same time. This produced a well-done shoulder and a medium-rare leg, both of which were moist and perfectly cooked. I also made a sauce for the leg with the remaining liquid. I decided to make it a little heavier than the shoulder sauce, so I mixed a little flour and water, and then poured it into the boiling liquid to produce a thick gravy.



I allowed the meat to rest for about 30 minutes while I made my way to the office filled with eager taste testers awaiting its arrival. The first thing everyone noticed about the meat was its rich aroma, which filled the room almost immediately after I took the meat out. The carving caused more than a couple of mouths to water in anticipation. When we began to sample each roast, it was clear they had very different flavors. Of the two cuts, the shoulder had the stronger flavor. One person noted that the shoulder meat was similar to steak and very flavorful, while others commented on the milder but delicious leg roast. Both cuts had great texture. One taster commented, "I'd be proud to have either of these roasts on my table!" In the end, the group was evenly split but equally satisfied.

## Getting Started

The Lincoln breed is blessed to be supported by the National Lincoln Sheep Breeders Association. This active group works to market the breed and cultivate the next generation of breeders, with members who can help mentor newcomers to the breed and put them on a clear path for success. The best piece of advice I can offer is to take time to visit a Lincoln breeder and get to know this majestic sheep up close and personal. They're beautiful and useful creatures that won't disappoint. 🐑

*Jeannette Beranger is the senior program manager for The Livestock Conservancy. She maintains rare breeds on her North Carolina farm, and is the coauthor of An Introduction to Heritage Breeds, available below.*

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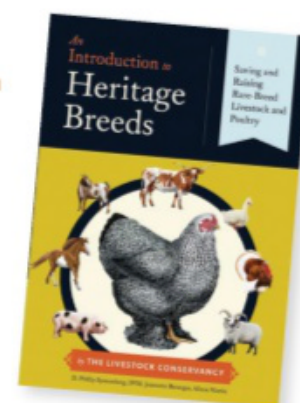
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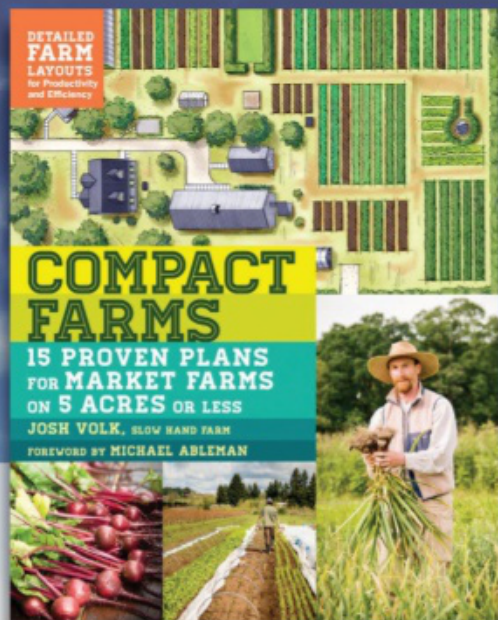
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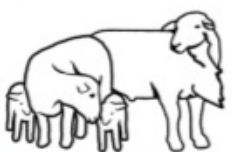
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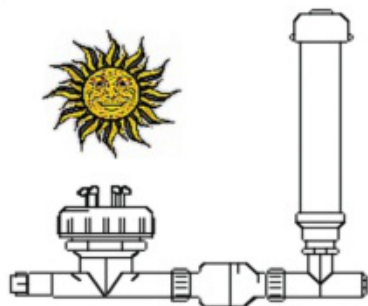
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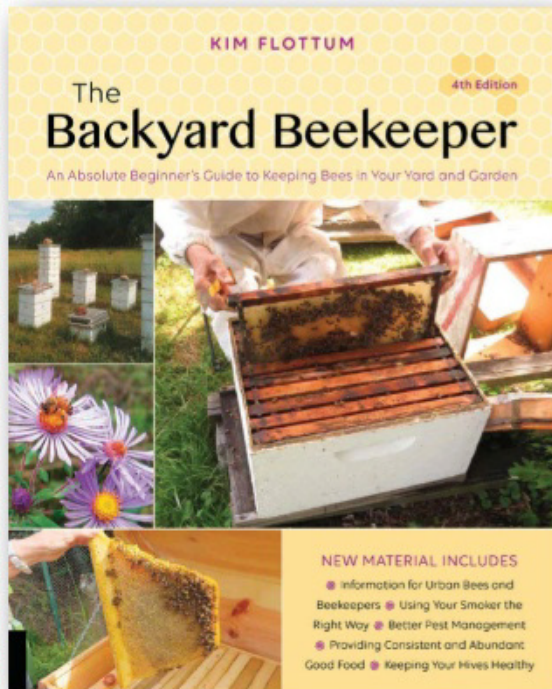


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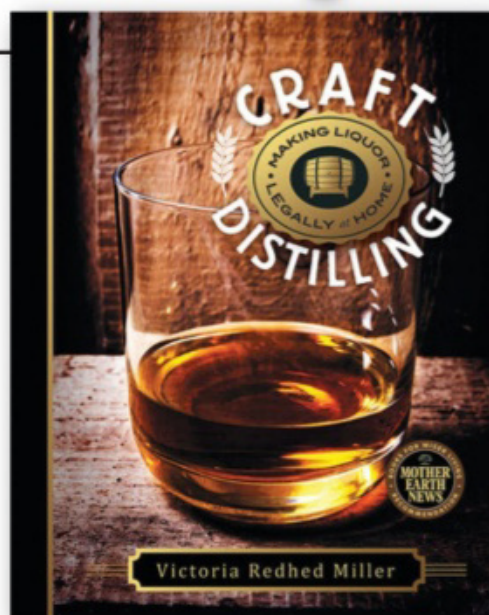
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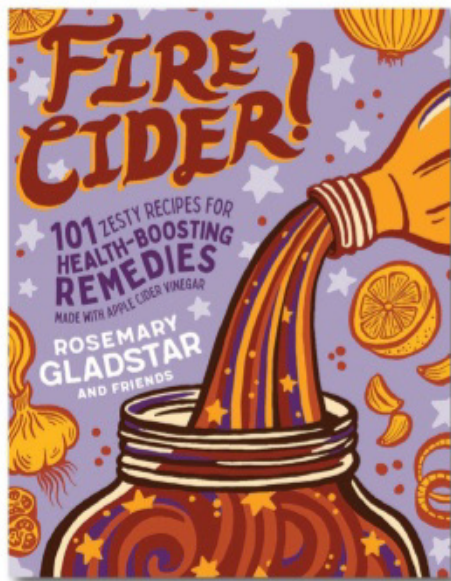
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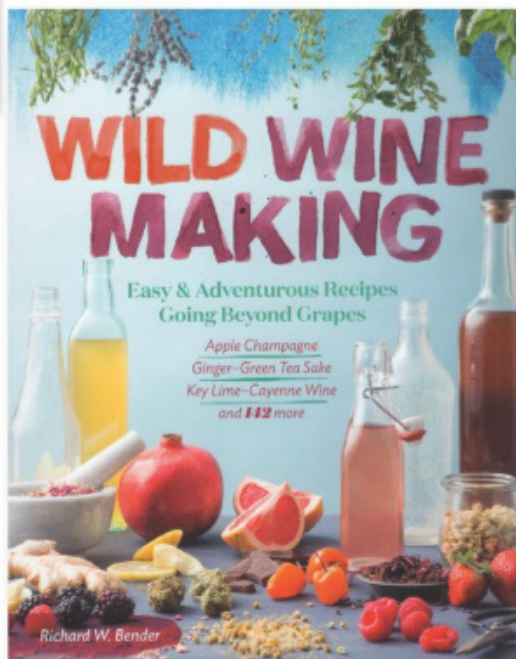
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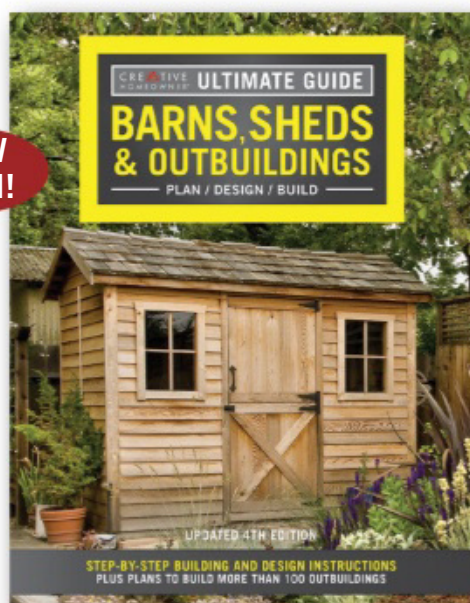


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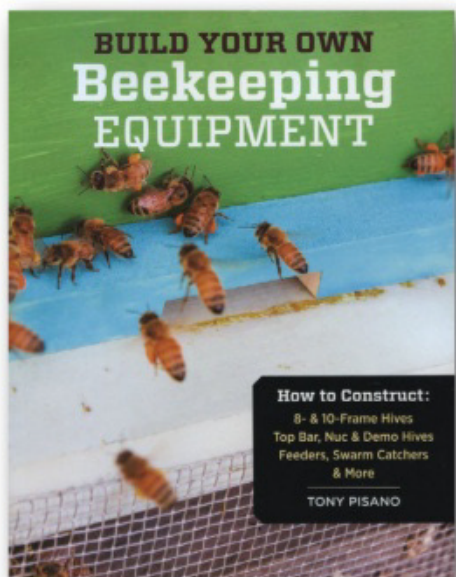
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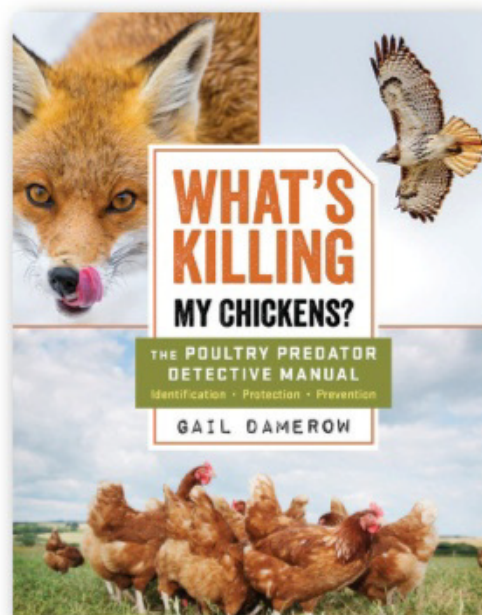
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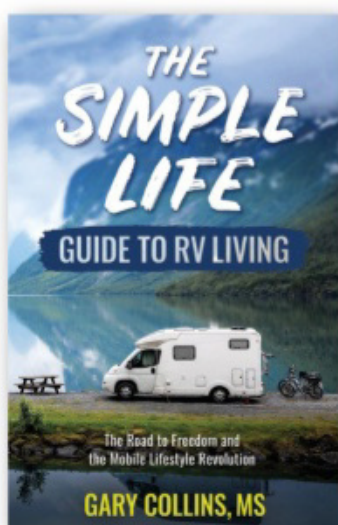
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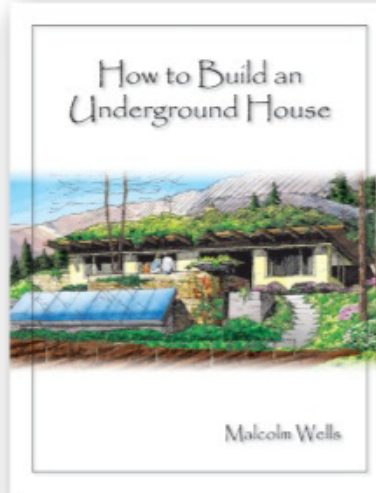
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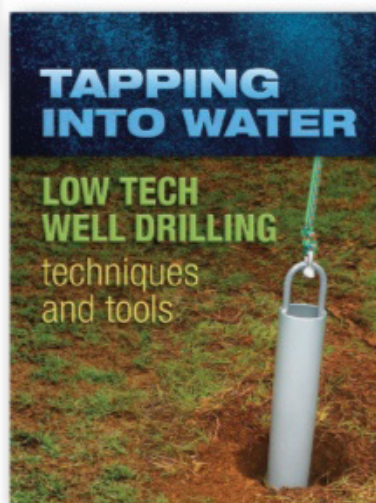
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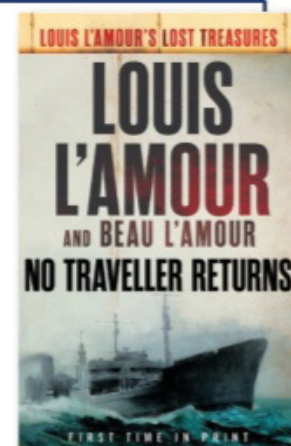
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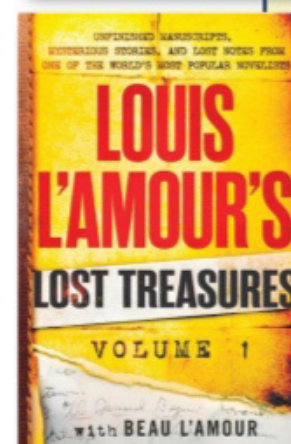
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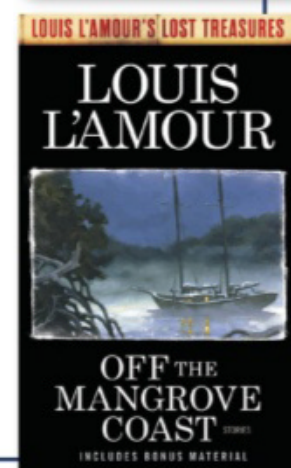
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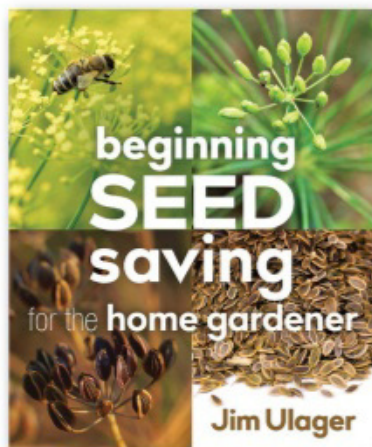
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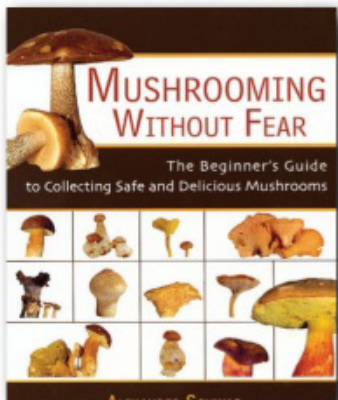
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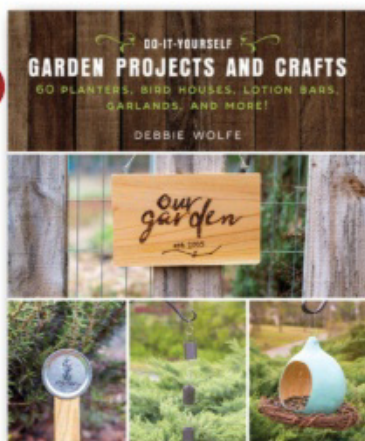


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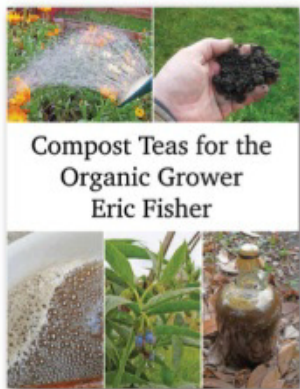


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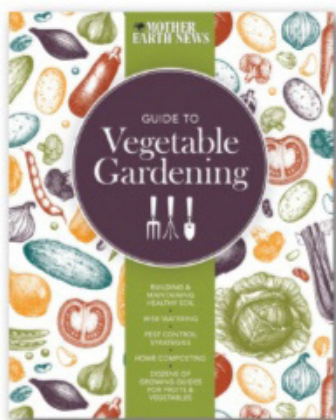
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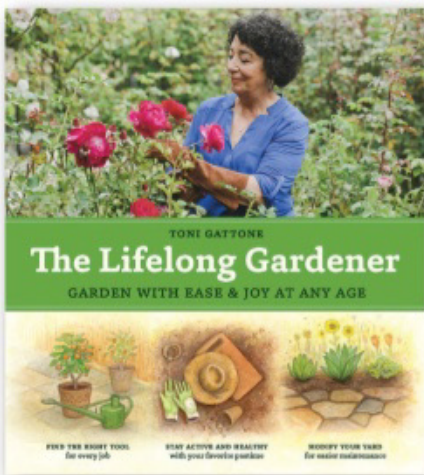


NEW  
ITEM!

## THE LIFELONG GARDENER

In *The Lifelong Gardener*, adaptive gardening expert Toni Gattone shares her proven methods for making your favorite hobby easier on your aging body. Her techniques will help you garden smarter, not harder! Eliminate the physical strain of gardening through this helpful guide's dozens of tried-and-true methods.

#9924 ~~\$19.95~~ \$16.96



## POLYTUNNEL SUPERDOME

Similar to a cold frame or greenhouse, the polytunnel "superdome" provides optimal protection from frost and extreme heat for your delicate young seedlings. Shading material sewn into the roof of the polytunnel protects young seedlings against the midday sun and heat, while two side openings allow for ventilation, easier plant care, and watering. Dimensions: 2.6 by 2.3 by 9.8 feet. *This product is only available for shipment in the continental United States.*

#9941 ~~\$59.99~~ \$53.99



## SOIL BLOCKER SET

This Soil Blocker Set is the perfect way to eliminate plastic while starting seeds. Create perfect soil blocks for starting seeds inside with the Micro 20, and then when you're ready to move them outside, switch to the Mini 4, both included in this set along with cubic inserts for the Mini 4. *Please allow two weeks for delivery. Available for shipment to continental U.S. addresses only.*

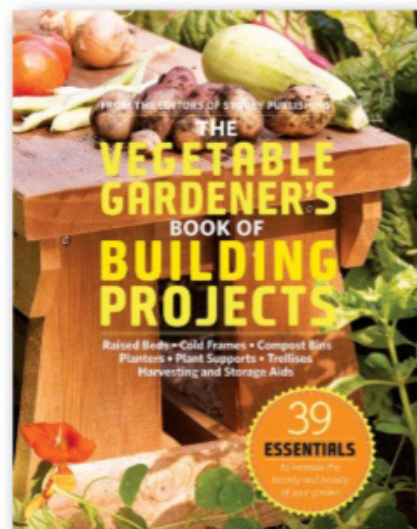
#10047 ~~\$67.58~~ \$61.06



## LED GROWLIGHT GARDEN, BLACK

The LED Growlight Garden is ideal for growing microgreens and herbs, or showcasing your favorite plants, while ensuring they get all the water and full spectrum of natural light they need to grow and thrive. Measuring 24 by 16 inches, the attractive tabletop design fits perfectly in the home or office, just add your favorite seedling mix, seeds, or transplants and enjoy your indoor garden all year-round! *Please allow two weeks for delivery. Available for shipment to continental U.S. addresses only.*

#9488 ~~\$199.99~~ \$179.99



## THE VEGETABLE GARDENER'S BOOK OF BUILDING PROJECTS

Make your food garden more productive and more enjoyable! These 39 simple-to-make projects include cold frames, compost bins, planters, raised beds, potting benches, gates, trellises, storage containers, outdoor furniture, and more!

#4507 ~~\$19.95~~ \$16.11

TO ORDER, CALL TOLL-FREE: 866-803-7096 (OUTSIDE U.S. AND FOR CUSTOMER SERVICE: CALL 785-274-4365)



**NEW  
ITEM!**



## ELDERBERRY SYRUP KIT WITH RAW HONEY

You can make delicious elderberry syrup at home! This kit has all the supplies you need to make one pint of elderberry syrup in the comfort of your kitchen. Includes:

- Organic dried elderberries
- Organic chai spice blend (ginger, cinnamon, allspice, cloves, and orange peel)
- Raw honey
- Cheesecloth (for filtering the syrup)
- Elderberry syrup recipe

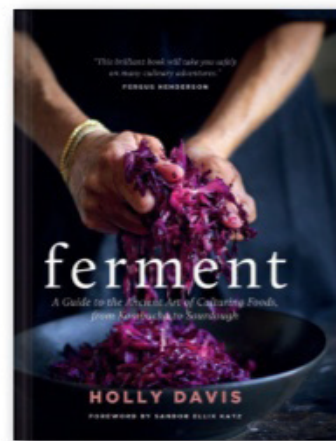
#9943 ~~\$24.95~~ \$22.46



## MOTHER EARTH NEWS GUIDE TO SUPER HERBS

Reboost your health with hundreds of tips from the *MOTHER EARTH NEWS Guide to Super Herbs*. Inside this 96-page guide you'll learn more about elderberry, turmeric, ginger, thyme, and more herbs for good health. Learn about the top six medicinal essential oils; natural dental and allergy remedies; herbs and nutrients for a better night's rest; gardening for medicinal health, emotional well-being, and improved digestion; growing ginger and turmeric; and more.

#8629 ~~\$6.99~~ \$5.59



## FERMENT

In this extensive collection, fermentation pioneer Holly Davis shares more than 120 recipes for familiar (and lesser-known) cultured foods, including yogurt, pickles, kimchi, umeboshi, scrumpy, and more. This inspiring resource contains more than 100 photographs, plus plenty of helpful how-tos and informational charts offering guidance on incorporating fermented ingredients into the diet.

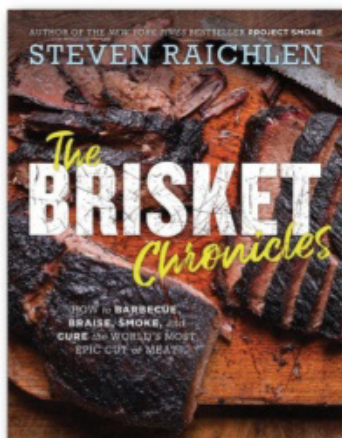
#9408 ~~\$29.95~~ \$25.46



## SMOKEHOUSE HANDBOOK

In *Smokehouse Handbook*, author Jake Levin demystifies the process of selecting the right combination of meat, temperature, and wood to achieve the ultimate flavor and texture. Detailed step-by-step photos show the various techniques, including cold smoking, hot smoking, and pit roasting.

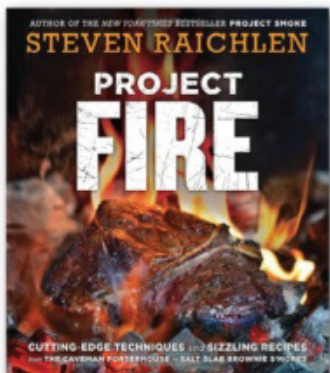
#9360 ~~\$24.95~~ \$21.21



## THE BRISKET CHRONICLES

Take brisket to the next level: 'Cue it, grill it, smoke it, braise it, cure it, boil it, and even bake it into chocolate chip cookies. In dozens of unbeatable tips, author Steven Raichlen shows you just how to handle, prep, and store your meat for maximum tenderness and flavor. Plus, he provides plenty more recipes that are pure comfort food, perfect for using up leftovers

#9838 ~~\$19.95~~ \$16.96



## PROJECT FIRE

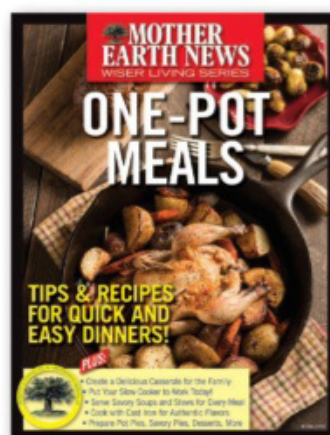
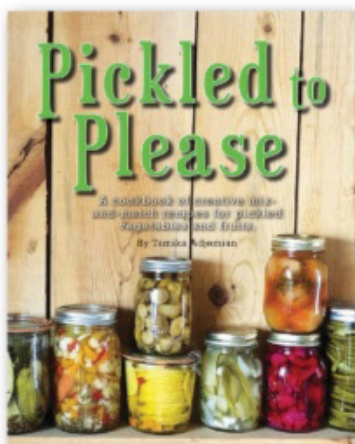
*New York Times* best-selling author Steven Raichlen brings you his new, stunning, full-color celebration of the best of contemporary grilling. America's master of live-fire cooking, Raichlen presents 100 inspired recipes that capture the full range of what grillers want to cook today. From classic T-bone to breakfast, cocktails, and dessert, *Project Fire* is a radically righteous new take on some of our nation's favorite foods.

#8830 ~~\$22.95~~ \$19.51

## PICKLED TO PLEASE

If you've been considering canning your own pickled products, *Pickled to Please* is perfect for you! Author Tamika Adjemian has put together a well-rounded collection of methods and recipes for your first foray into canning that will make it easier than ever. Intended for new and experienced home canners, this book covers food preservation methods and safety information, as well as teaching the "mix and match" approach that demonstrates the easy way to swap out seasonings and spices, vinegars and brines, and fruits and vegetables!

#9505 ~~\$24.95~~ \$18.71



## MOTHER EARTH NEWS ONE-POT MEALS

Every chef knows that a big part of cooking is what you use to prepare the meal. In *MOTHER EARTH NEWS One-Pot Meals*, you'll learn how to cook with every type of pot, from pressure cookers to cast-iron Dutch ovens. Every page in this issue is packed full of tips and recipes to cook for your next meal.

#9203 ~~\$7.99~~ \$5.59



## ARTISAN SOURDOUGH MADE EASY

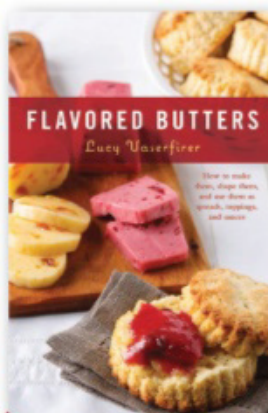
With *Artisan Sourdough Made Simple*, Emilie Raffa removes readers' fear and proves that baking with sourdough is easy and can fit into even a working parent's schedule! Any new baker quickly accrues questions, and Raffa has the answers.

#9877 ~~\$21.99~~ \$18.69

## STAINLESS STEEL BUTTER CHURNER

Want to add that old-school flair to your kitchen, but without the backbreaking work of a classic butter churner? Try out this stainless steel butter churner, a sophisticated and easy-to-use device that lets you turn whipping cream into real butter in minutes. Simply place the cream into the churner, turn the handle, and in as little as 10 minutes you can enjoy fresh and delicious butter!

#9927 ~~\$39.99~~ \$37.99



**NEW  
ITEM!**

## FLAVORED BUTTERS

Lucy Vaserfirer's *Flavored Butters* provides the recipes and techniques for homemade flavored butters. In 50 recipes, she offers up ideas that are amazingly quick to execute in the kitchen and transformative in the flavor they impart.

#9946 ~~\$14.99~~ \$12.45



**NEW  
ITEM!**

OR VISIT: [Grit.com/Store](http://Grit.com/Store) Mention Promo Code: MGRPAKZ6 SALES ENDS 4/13/20



"I like jelly and I like jam.  
I like grasshoppers and I like ham.  
I like okra and collards, and grits have their due.  
But don't you ever speak of chicken cordon bleu."  
"Well, it's better than last year's song, at least."







# AGGRO WINCHES



4500 LB SYNTHETIC ROPE | \$409<sup>95</sup>

3500 LB SYNTHETIC ROPE | \$349<sup>95</sup>

2500 LB SYNTHETIC | \$294<sup>95</sup>

4500 LB WIRE ROPE | \$349<sup>95</sup>

3500 LB WIRE ROPE | \$294<sup>95</sup>

2500 LB WIRE ROPE | \$239<sup>95</sup>



WHERE TO BUY: VISIT OUR DEALER LOCATOR AT [MOOSEUTILITIES.COM](http://MOOSEUTILITIES.COM)

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