

The magazine of modern homesteading

COUNTRYSIDE

& Small Stock Journal

Volume 105 • Number 2
MARCH/APRIL 2021

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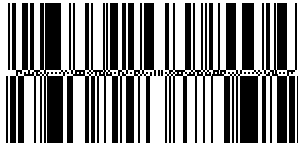


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I AM COUNTRYSIDE

FEATURING FRECKLED FEATHER HOMESTEAD — AMBER MILLER

FRECKLED FEATHER HOMESTEAD

SOMETIMES IN LIFE, WE ARE CALLED to the most unexpected paths. If you would have told Mr. Freckled Feather or me 10 years ago that we would be homesteaders, we would have laughed hysterically.

When we moved in six years ago, we immediately put in a raised bed garden and started growing the more common vegetables like tomatoes, summer squash, peppers, and cucumbers. Each year, I experimented with more and more, trying fruits, beans, broom corn, melons, flowers, luffa gourds, pumpkins, and lots of herbs. We are in the process of expanding the garden area by building more raised beds and adding trellises for vertical gardening. We have also been collecting glass and windows in hopes of building a greenhouse soon.

Pekin ducks were the first two animals on the homestead. They jump-started the animal adventure! We rescued them from a campground we were staying at (someone abandoned them) and the camp host said, "If you can catch them, you can keep them." When we were driving them home, we Googled "how to raise ducks." Ha ha!

A few months later, we built the white coop and brought home baby chicks. I knew I wanted an array of beautiful birds and colorful eggs. Gathering fresh eggs has been one of my favorite activities to do with the kids each morning. We enjoyed our feathered friends so much that we built another coop to accommodate more chickens and ducks. One day, we hope to add Nigerian Dwarf goats, Kunekune pigs, and honey bees to the homestead.

Gardening is rewarding and the sense of pride I get from preserving food from our harvests is humbling. I



want my children to experience the freedom of running barefoot and to feel the earth under their feet. I want them to know and to respect where our food comes from, and to not take it for granted. I want them to make mud pies, help nurture animals, and love nature, all while making wonderful childhood memories. We want to help our earth by making eco-friendly decisions. Most of all, I want to slow down and create wholesome family time. Our evolving philosophies on life slowly led us to the moment of naming this place we love. The title "farm" and "farmette" did not seem to fit because I felt like a whole lot more was starting to happen here. In that moment, I had realized homestead was the perfect fit and that was the lifestyle we were set to embark upon.

Homesteading can be challenging, messy, hard work, and yet very rewarding. With blood, sweat and tears, we have built everything from the ground up. I had grown up on a farm, but had pretty much everything to learn about homesteading. Since starting, I have learned a wealth of knowledge! I love sharing it with people in hopes I can inspire or help others that are looking for a homestead lifestyle change. For me, homesteading is a way of life that makes daily strides to live more intentionally and sustainably. Some homesteaders live off the land, some are completely off grid, some are urban homesteaders, some are modern homesteaders like us. I have learned that this lifestyle comes in all different forms, and that is the beauty of homesteading! 🌱

Previous Page: Sunset on the homestead.

This Page Bottom Left: Orange plum jam.

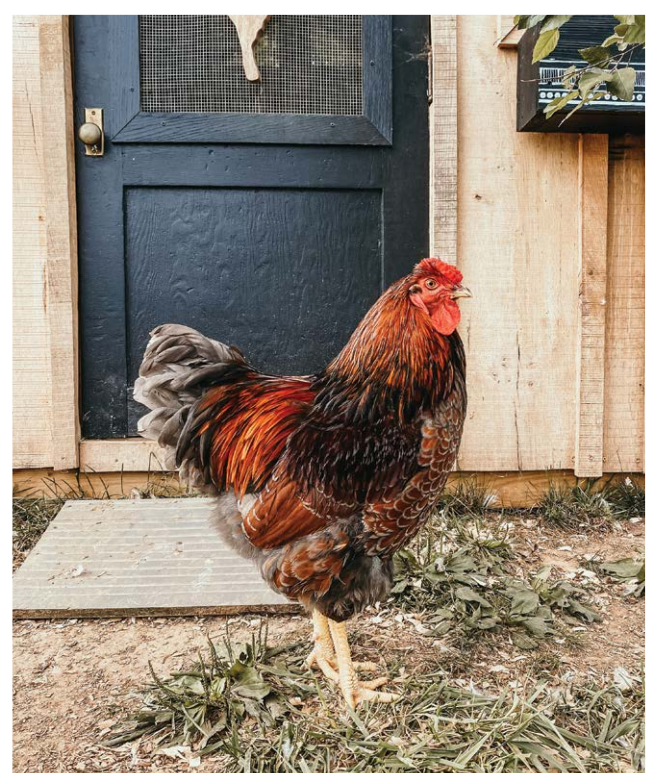
This Page Top Right: Amber and Mr. Freckled Feather.



Follow Amber on Instagram
[@dolledupandmuddy](https://www.instagram.com/dolledupandmuddy)



Top Left: The Flock House (accommodates ducks and chickens). Top Right: Amber's work bench.
Below Left: Trellis garden. Below Right: Kilo the rooster.



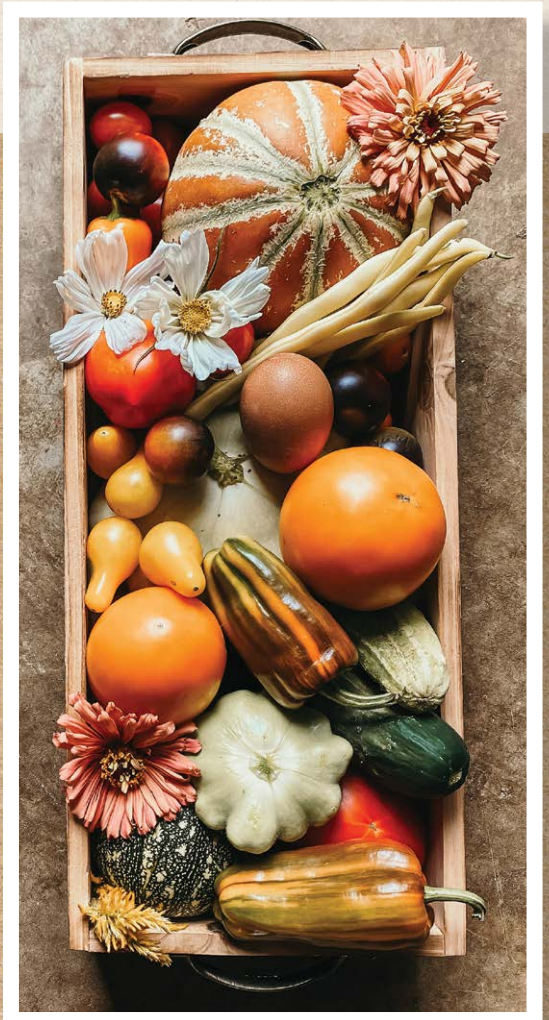


Above Left: Clutch of rainbow eggs.

Above Right: Meet the family.

Below Left: The Chick Inn.

Below Right: Summer harvest.



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ON THE COVER | Beans vining up corn stalks in a three sisters garden.
Photo by Stacy Benjamin @5rfarmoregon. See more on page 36.

Join the *Countryside* Community!

Tag us on Instagram, share your stories on Facebook and find new inspiration on Pinterest. We read all the comments and love the feedback!





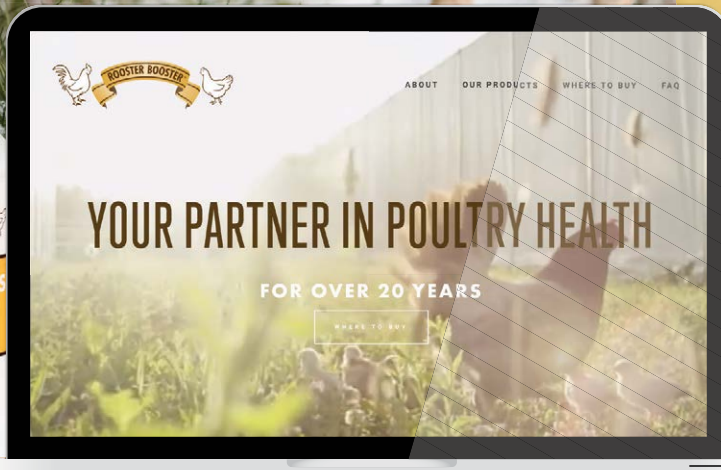
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Our Philosophy

At *CountrySide*, our purpose is to inspire self-reliant living on any level.

We acknowledge that the path to self-sufficiency is as unique as the person who accepts the journey.

We strive to strengthen the homesteading movement by sharing the diverse voices and knowledge of today's practitioners.

We teach our readers how to grow and raise their own food; build, fix, and craft with their own two hands; and walk as gently on this planet as possible.

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FROM THE EDITOR



SPRING IS THE TIME WHEN LIFE comes alive again. Seeds sprout, hibernating creatures come out, brown turns to green, and the sunlight sheens. For those of us who experienced a long, cold winter, the sights and sounds of spring are more than welcome in our lives.

My garden plans are in full swing as I impatiently wait for the snow to melt and the soil to warm. My seedlings are under grow lights and look so happy to be alive while they continue to grow like crazy. Their new home in the warm sun will be ready for them soon.

If you haven't planned out your garden yet, you will want to check out Stacy Benjamin's Three Sister's Garden article for a practical approach to companion planting. If you're looking for a plan to add more vertical interest and color to your garden, this is for you!

Janet Garman joins us with part two of her six-part series on retirement homesteading. This installment discusses buying the perfect homesteading land for different situations. There are several important obstacles that should be considered before making a purchase.

Are you raising chicks this spring? Be aware that you'll need a protected place for them to live outside of your home. Amy Fewell shares her ideas on repurposing a small coop, an old rabbit hutch, a

stock tank, or a doghouse. If you wish to create an outdoor brooder, she explains what you will need to do so while making it safe for your growing chicks.

Since keeping bees is becoming quite a popular hobby/business, we have ramped up our section on beekeeping not only to help those who are just beginning but also for those who are more accomplished beekeepers. In this issue, Kristi Cook explains why and how to feed pollen patties, and for you pollinator enthusiasts, Leah Grunzke has some suggestions for helping out solitary bees. Rusty Burlew answers beekeeper's questions in her Ask the Expert pages and you will learn how to install package bees in a Langstroth hive.

These are just a few of the informative articles you will find within the pages of this new, spring issue. Happy Spring!



Ann Tom
Editor, *Countryside*

HAVE AN IDEA OR STORY TO SHARE, A QUESTION TO ASK, PERHAPS AN ANSWER TO A QUESTION? WE WANT TO HEAR FROM YOU!

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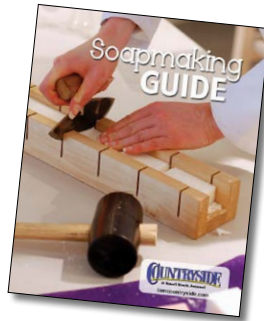
Country Conversation & Feedback

Contact us at: P.O. Box 566, Medford, WI 54451; editor@countysidemag.com

Soap Cutter

Where can I purchase the soap cutter that is on your soapmaking e-guide?

— Marie Morrison



Hi Marie,

Just about any supplier that sells the fragrances, colorants, and oils specifically for soapmaking will also sell a soap cutter similar to the one shown on our e-guide. However, if you shop on Etsy, you can knock up to \$100 off the price for a product that works just as well.

Good luck!

— Marissa Ames, Countryside Editorial Assistant and Longtime Soapmaker

Our Soapmaking Guide is available at: iamcountyside.com/soap-making-guide

In response to “Selling Eggs as a Business on the Homestead” (Jan/Feb 2021)

Thank you for the informative article on selling eggs. I’ve wanted to sell my girls’ eggs for some time as I always have an abundance of them during the summer months. I learned several great tips and am going to give it a shot this year!

Thank you, Countryside.

— June B., Indiana



Some Tennessee hair sheep. Taken December 28, 2020.

— Gloria Gordon

In response to "What are your favorite soup or chili recipes? (Sept/Oct 2020)"

Easy Homemade Chili

- 1 lb. hamburger (I use venison hamburger)
- 2 lb. frozen, chopped tomatoes or canned tomatoes (adjust to your liking)
- 16 oz. (½ bottle) Bloody Mary mix (I use Zing Zang — it has a little kick to it)
- 1 package McCormick chili mix
- 1 medium onion
- 3 stalks celery
- 1 can pinto beans (can use two)

Brown hamburger, drain, and add to stockpot. Add the rest of ingredients and boil until celery is soft. May add more chopped or stewed tomatoes and green chiles. Serve with shredded cheese and sour cream on top.

— Susan, Wisconsin

In response to "Homesteading After Retirement: Part 1" (Jan/Feb 2021)

I just read your article in *Countryside* magazine. Thank you for doing this series! I am looking forward to reading future articles. "Homesteading" is something I have been considering and researching for three years since I retired.

— Julia Gates

Thank you for the feedback, Julia! Watch for the rest of the series in the coming issues of *Countryside*, including part two in this issue. — Editor



In response to "Farmhouse Quiche" (May/June 2020)

Thank you for the tasty recipe, Farmhouse Quiche. The flavor was great with herbs baked into the quiche. The aroma was also salivating. We cannot improve this recipe. Thank you again!

— Emerson and Deborah Smith, Texas

If you missed the recipe in print, all-access members can read it online: iamcountryside.com/issues/countryside-may-june-2020/



OUR COUNTRYSIDE COVERS TELL YOUR STORIES!

From coops and farms to kitchen creations; do you have photos that you feel are cover-worthy? We would love to see them!

For your chance to be front and center on an upcoming issue please email vertical, high-resolution photos, with details about the image to:

editor@countrysidemag.com

The Bird Nest

Near the kitchen window was a tall tree. One day, two little birds began building a nest right at the very top of the tree. My great-grandchildren wanted to help them. At the foot of the tree, they laid small sticks, grass, straw, tufts of goat hair, and bright colors of yarn brought from the house. Soon the birds had finished the nest. The mother bird laid her eggs while the father bird brought her food.

For awhile it was quiet and peaceful. Then one morning I began hearing a great bird racket so I hurried outside. The two birds were flying frantically over their nest, calling desperately for help! Under their nest was a long black snake. He was just turning to go back down the tree. In seconds he was on the ground and had crawled under the fence into the field. The little birds circled over their nest a time or two, then flew away. That snake had swallowed their eggs! I felt sad.

Fall came, the tree lost its leaves, and the wind blew the nest down. The girls picked it up. It was woven of the things the girls had picked up — a work of art.

— *Pauline McKenzie, Florida*

March/April Question of the Month

As the days get longer and the sun gets warmer, it's time to start planning this year's garden. A lot of gardeners have come up with hacks to make their gardening season easier and more productive.

What gardening hacks do you use to make your life a little easier and your plants a lot happier?

We'd love to hear from you and share with the rest of the Countryside community.

Send your hacks to:

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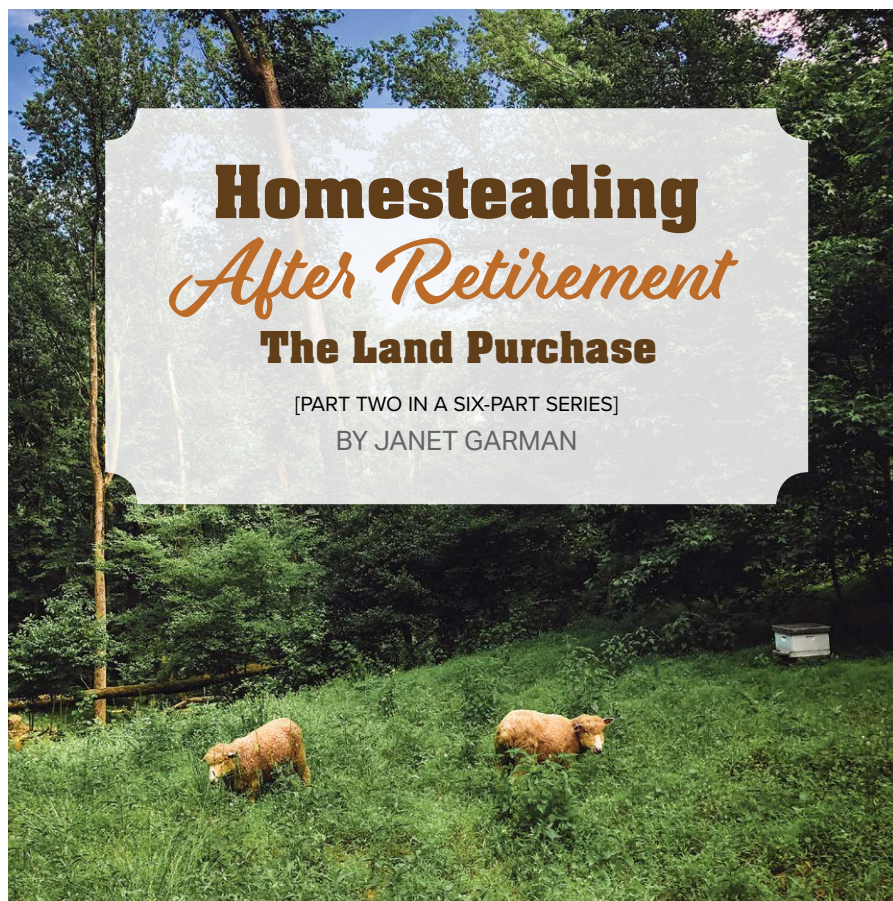
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Homesteading After Retirement

The Land Purchase

[PART TWO IN A SIX-PART SERIES]

BY JANET GARMAN

and present your plan. With so many different agencies, and state and local policies, it pays to be certain that your plan and your potential property fit together.

How is the Weather?

Is the area where you are searching for land a comfortable fit for you? Homesteading in the Upper Peninsula of Michigan may sound wonderful in July. But are you able to withstand the cold, dark winters? Most livestock can adjust to any climate, but they still need a caretaker to make sure that thawed water and hay are available. Do you feel that this is a good fit for you? On a personal note, I do not tolerate heat and humidity well. There are weeks of each summer where my mind even considers throwing in the towel! I wish our farm was not in such a humidity-prone area. If you and your spouse or partner differ regarding what climate is comfortable, make sure you discuss this before settling on your dream farm.

How Much Land?

It sounds great to own acres and acres. A large buffer between you and a nearest neighbor can be a welcome thought after living in a neighborhood or city. There are certain considerations on this subject.

Upkeep of the Land

Fencing and mowing, planting, and growing is an iconic scene! It is also hard physical labor. The bigger the property, the more you will have of these tasks. Buying 200 acres is also quite an investment. Look carefully at the options available for that much land. Is there the option of leasing grassland to hay farmers, or leasing property to a tenant farmer for crops? If a small garden and a few chickens are your idea of a retirement homestead, consider the smaller rural properties, too. One of the

BUYING LAND OR AN ESTABLISHED FARM property is one of the first decisions facing you after deciding to homestead after retirement. First, research the area where you would like to settle. Having a network of fellow homesteaders is a great place to start. Family ties and friends can also weigh in with some ideas you may not think about on your own.

An important consideration concerns how close you want to be to services. Being further off the beaten path adds serenity to your life, no doubt about that. It also means longer drives to pick up supplies and slower access to emergency services. This may not be a concern of yours and I am not stating that it must be concerning. Just keep it in mind if you like a certain amount of interaction with other people. Church, recreation, and schools are usually centered in towns.

Look at each property from the unique perspective of what you hope to accomplish. Make a list of your most important land features. Do you need flat grazing land for cattle, sheep, or goats? Shady, tree-covered property, or plenty of open garden space? How will you irrigate crops or provide water for livestock? Certain properties might have improvements already in place, which is wonderful. If the land is raw, remember to add the cost of a well being drilled, permits to do so, and all the associated inspections.

Future market garden plans can easily be derailed by Mother Nature. Will you require a greenhouse to get your seedlings started early? Again, I must mention the dreaded "permit" word. It may turn out to be a simple procedure. My advice is to ask the realtor or landowner, but also verify that what you are told is correct. Contact the local zoning office



concerns is resale. Should you need to resell the property, a smaller piece of land will sell quicker than a large, higher-priced property.

Historic Properties

I love to look at the older farmhouses and lands. The history of the property comes through in the buildings and the tall mature trees. When looking into purchasing a historic farm property, make a list of what improvements you would want made to the house or outbuildings. In some areas, a historic preservation society may have stipulations on what can be done with historic buildings.

Insurance

Look into the options for property insurance. A friend of mine purchased an incredibly old farm that needed renovations and restoration. Before closing on the property, she had trouble finding an insurance company that would insure the farm and buildings because they were so old.

Insect damage, prior flood damage, fencing that needs repair, and trees that are about to fall are a few other pitfalls to look for before signing the paperwork. It does not have to be a deal breaker, but taking off the rose-colored

glasses and knowing what you are facing is the best approach.

One last story from our personal experience:

We found a property on our quest that seemed to fit all the needs of our family. The farm was partially wooded, had grazing land for cattle, a beautiful home with room to grow, and many extras we did not really require. It was a dream farm property. Except there was only one access driveway to the home and it crossed a river via a low bridge. We were concerned enough about this fact that we looked for other access points and had the realtor contact the neighboring farm about a possible access road being added. During this time, we had heavy storms and flooding in many areas of the east coast. The area, where this farm was located, suffered damage and many roads were washed out.

One day we decided to take a drive to see how the river and bridge were holding up. The short story is that they were not holding up. The bridge was under water. The river was rushing and full of rapids. If we had been out during this storm there was no way we could have returned home until the waters receded. That property was crossed off our list.

The purchase of a farm or homestead property has many facets. While the dream of finally living a homestead retirement life can make us a little quick to make a decision, taking the time to think about all the different obstacles of each property can ensure that your dream and your future remain positive. ©

All-access members can read the first installment of this series online: iamcountryside.com/homesteading/homesteading-after-retirement-part-1/

JANET GARMAN is a farmer, writer, instructor, and fiber artist living in central Maryland on the family's farm. She loves all subjects related to small farms and homesteading. Raising chickens, ducks, sheep, and fiber goats led her to write her most recent books, *50 Do-It-Yourself Projects for Keeping Chickens*, (Skyhorse Publishing 2018), *The Good Living Guide to Raising Sheep and Other Fiber Animals*, (Skyhorse Publishing 2019), and *50 Do-It-Yourself Projects for Keeping Goats* (Skyhorse Publishing 2020).

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How Solar Could Drive Your Homestead

BY JOHN G. MOORE

IN 2014 WHEN MY WIFE and I decided to power our five East Texas acres with solar, an electric vehicle was not part of the plan. But a couple of thoughts changed our minds. 1) If we made our own electricity, our homestead would have an endless supply of renewable energy for our home and workshop. 2) If we made our own electricity and owned an electric vehicle, we'd have a never-ending supply of fuel for our car. I believe if more homesteaders entertained those same two thoughts, both solar power and an electric car would be part of their daily lives.

When I worked for the government, a coworker pointed out that the American electrical grid is old, in dire need of upgrades and repairs, and could be hacked and turned off. Imagine waking up one day and the electricity is off — everywhere. It's scary, but it's quite possible.

It takes electricity to pump fuel at the gas stations and to operate the manufacturing facilities that make gasoline, diesel, and other fuels.

But we knew almost nothing about electric cars. Were they reliable? What might be the downsides

of owning one? We didn't know, so while we worked toward adding solar power to our homestead, we took our time and researched the electric car idea.

First, we had to choose the right company for installing the solar-powered system. The owners needed to be certified experts who had installed these systems for a long time, show us some of their work, and let us talk to their customers. Even though solar-powered systems have a long lifespan, we wanted to make sure the company would be around if we had issues down the road.



We went with Wright-Way Solar, based in Tyler, Texas. My wife and I wanted solar panels, a battery back-up system, and a propane-powered generator all tied together so that we could operate without the grid for a long time if necessary. Wright-Way has installed systems for many years and their clients raved about them.

After we installed the solar, a trip through Oklahoma pushed ahead our plan to add an electric car to our homestead. We passed a car dealership featuring a sign that said, "Nissan Leaf — Electric Vehicles Now Available." My wife and I looked at the sign and then back at each other.

But, I was the one who pushed the idea. We discussed how an electric car made a lot of sense, but she wanted to know a lot more before spending additional money on something else solar.

Honestly, after spending the money to fit our existing home with solar, buying an electric car needed to make sense. As we kept driving, I suggested she researched on the web whether electric vehicles could be purchased with tax incentives.

We drove along Oklahoma's high-



ways in excitement as we talked and she continued to research the advantages of owning an electric car.

She looked up all the manufacturers at that time and their track records. We researched reliability (the Leaf had been in production for four years at this point), cost of maintenance, repair, and operation.

When we learned that the reliability was excellent, that there was essentially zero repair or maintenance costs, and for about \$20 a month, we could charge and operate the car, I was sold.

After we visited the local dealership, talked to the sales department, and test-drove a new Leaf, we bought a new 2015 model.

We had our solar installer add a 220-volt plug in the garage (the car comes with a standard wall outlet

plug-in charger, but the 220 charges much faster and more efficiently), and we began driving it. Everywhere. For just about everything.

You don't need gasoline or diesel; there are no oil changes, filters, or much else.

After five years, the only money we've spent on the car is a set of tires, and replacing the \$137 12-volt battery under the hood. Even an electric car relies on a standard automotive 12-volt battery for basic functions. The main batteries on a Leaf that operate the drive train are located under the floor.

We love this car. Our mileage is approximately 119 mpg using the conversion if it were a gasoline vehicle. Our range is about 100 miles per charge, but the newest models' range is much better.

I drive it to buy just about every-





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I drive the Leaf to buy just about everything we need on the homestead.



thing we need on the homestead. The Leaf has a hatchback, so loading and unloading are easy.

We got a few looks at the stores when we asked them to load the fish food or the bags of peat moss, "... into the back of the electric car out front."

At the time installed solar and bought the car, there were a number of tax incentives. In many states, there still are. Check with local authorities to see what's available where you live.

The good news is that since we installed the first phase of our solar electrical system in 2014, the prices of many of the components have become more competitive.

In our system, the batteries are American made. Canadian solar panels were the best value when we began our project, and the inverters were made in Germany. It seems that the world was and is still collaborating to make renewable energy work.

So, no gas or oil, no filters, and virtually no maintenance? An electric car can really seem too good to be true. In some ways it is. We've saved thousands of dollars and we never have to stop for fuel.

Consider an electric car for your homestead. I think you'll get as much of a charge out of owning one as we have. ♻️



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JOHN G. MOORE is a native of Arkansas, but he has called East Texas home for over 30 years. He is the owner of One Moore Production, a recording studio where he voices books for Audible. His weekly column, Moore Thoughts, appears in a dozen newspapers in Arkansas, Texas, and Louisiana. John is the author of two books - *Write of Passage: A Southerner's View of Then and Now* - Volumes 1 and 2. You can reach him at John@TheCountryWriter.com.

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LIFE ON THE HOMESTEAD POST COVID-19

BY ANITA B. STONE

THE COVID-19 PANDEMIC has disrupted many lives and livelihoods. Many of us have spent time hunkering down in our homes, eating too many goodies, wearing jammies and sweatpants with t-shirts, and swiping online apps, only to see hundreds of messages accumulate while we quarantine ourselves. It is a time that revealed just how dependent we are on many basic things as food, water, and entertainment. But for some, it isn't that way. Some people have accepted the challenge by becoming more self-sustaining to get through the pandemic with much less stress. This group of people, who don't experience the total unrest we see around the country, are called "homesteaders."

Homesteader and author, Tasha Greer says, "Homesteading is something you can do at all different levels. It is about finding ways to do more yourself so that you are not at the mercy of external whims or events

like COVID-19. Homesteading is a skill you learn so you have more food put away for tough times. If you prepare to buy things to put in a shelter, you will have more options." Greer adds she can live off the grid at any moment, but she doesn't because she likes her comfort.

Practice off-grid cooking using solar, campfire methods, grills, wood stoves, and fire pits.

According to Shawn Harding, President of the North Carolina Farm Bureau, "Self-reliance is a key factor to homesteading, as well as keeping a strict level of vigilance." Harding adds, "Farms did not survive the last several months alone, and connections made with the public highlight how much we really do rely on each other and what we can accomplish for a

strong resilient food supply chain."

The question that is asked frequently is, "What can we expect from post COVID-19?" The answers show us what homesteaders are currently doing and will continue to do even after the pandemic releases its grip on the nation.

Homesteaders are known as “preppers,” and have the essentials to move forward.

Deborah Nieman of The Thrifty Homesteader believes, “When people ask me if I’m a prepper, my answer is: I don’t give myself that label, but if there was a zombie apocalypse, I would know where my next meal was coming from.”

Finding ways to increase self-sufficiency is a homesteader’s life. This includes making sure they know where their next meal is coming from by growing their own food, which is what homesteaders do exceptionally well. The misconception is that several acres are needed to grow crops.

Whether you live in the city or on a farm, suburbanites have shown incredible creativity changing habits on ways of using space. It can be a roof or a sunny windowsill in the kitchen. Changed habits are easy to apply. For example, Mee-gan Fotner suggests planting a fruit tree in a bucket that is sitting in the corner of your garage. “Just drill holes in the bottom, fill the bucket with dirt, and place a seedling fruit tree into the soil.” She then sets it outside.

Homesteaders utilize resources by researching the internet, communicating with neighbors and friends, speaking to farm owners, and contacting local agricultural offices.

Some homesteaders have built pantries to stash away canned goods, paper goods, and necessary toiletries. If homesteaders are concerned about electric usage or any issues that may arise, they are the first to practice off-grid cooking using solar, campfire methods, grills, wood stoves, and fire pits.

Another issue practiced by homesteaders is water conservation. “We will be creating a berm for runoff water so it will be directed to follow the pathways and structure of our crops,” states homesteader, Adrianna Champella.

Nearby, in an eastern county, homesteader Logan Parker built a

cistern. “We can lower water bills and don’t have to depend on anyone for water,” Parker says.

In an area known as Seven Lakes, North Carolina, several residents have set up a series of rain barrels for water collection systems. They have also constructed cold frames, built worm bins, and made use of solar power.

Looking ahead to planting, post COVID-19 shows movement toward soy because it has a low intensity of inputs, which would be ideal if there were issues in getting things such as fertilizers. Welfare animal feed manufacturers have implemented flexible work arrangements and have restructured work shifts, such as Tractor Supply Company, to help workers maintain safe distances. This structure will also enable homesteaders to collect feed

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supplies as essential goods.

Prepping increased when Wall Street stocks became depleted. Many became proactive and used outside resources, which is a fundamental of homesteading. "Being less dependent is always a goal," states Champella. "You have to stay on top of things in order to ride the waves."

Those who didn't own goats and chickens recently purchased animals for supplies of eggs, milk, and meat. Economist Scott Irwin states, "When the grocery store runs out of eggs, it's hard to have omelets — unless you have your own chickens."

Post COVID-19 has created a new lifestyle, even for homesteaders. It does not, however, give way to worrying about the virus. It is about how homesteaders change habits that bring more self-sufficiency to the family.

Because homesteaders are spending more time at home, they are purchasing plant starts or seeds and growing more food. The garden industry has grown appreciably since the pandemic began. An example is written by T. Dodrill, author of *New Life on a Homestead*. The author writes, "Instead of planting flowers,

plant lettuce or purple tomatoes." Dodrill suggests, "Homegrown or purchased food can be canned, dried, frozen, or pickled for the future."

The impacts of COVID-19 will linger for some time. To become more financially solvent during the pandemic, many homesteaders are creating new fields of opportunity. Some are setting up outdoor vegetable and fruit stands, selling to neighbors and passers-by, even selling crops door-to-door. Many homesteaders have begun growing and selling potatoes and squash or a continuous harvest of beets, radishes, carrots, and turnips while others have grown herbs and distribute them to restaurants and suburbanites.

Several computer-savvy homesteaders have been offering and will continue to offer online classes and virtual lessons on a variety of topics, from raising farm animals for profit to growing plants for biofuel, an industry with less impact on gas emissions.

Homesteading, the environment, people, and animals are like the four seasons — always there, always challenging and one step ahead, offering everyone a bounty of skills, green space, and self-sufficiency. ©

ANITA B. STONE is an eco-friendly journalist who nourishes her traditional habit of nature and horticulture. Her love of the land and passion for teaching at the local community college and at senior retirement centers fills her time. She is always searching for new methods of improving the environment, growing food to benefit people, domestic animals, and wildlife. She is an author and Master Gardener in North Carolina, teaching others how to farm sensibly, making life easier and fulfilling, and admits she will always stay young-at-heart, just like her grandchildren.

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Why and How to Feed Pollen Patties

How to Make Your Own Pollen Patties

STORY AND PHOTOS BY KRISTI COOK

OF ALL THE HONEY BEE FEED SUPPLEMENTS available on the market, pollen patties are, perhaps, the most commonly explored supplement in today's apiaries. And while many opinions do exist — like anything beekeeping related — there are a few tenets on how to feed pollen patties to honey bees that are good to adhere to as you learn what works best in your own bee yard.

To best utilize pollen patties, an understanding of pollen's use in the hive is in order. Just as in human diets, bees need a carbohydrate source and a protein source. For bees, carbs come from honey and/or sugar syrup. These carbs provide the energy needed for adults to conduct their day-to-day business such as foraging, house duties, and guarding the hive.

Protein, on the other hand, comes from pollen and is consumed primarily by larvae with very little going to adult bees. Protein is so important that in the absence of sufficient pollen, brood production drops significantly, even coming to a complete halt in many cases. This dependence on a sufficient protein source is the driving force behind the idea of adding pollen patties to one's hives.

And this is also where the differing opinions come into play. To oversimplify, bees don't always need tons of pollen in the hive because while there are specific times when pollen is crucial to a hive's continued existence, there are times when an abundance of pollen may actually be detrimental to a hive.

Let me explain. During times of intense population buildup, such as late winter and spring, colonies strive to maximize colony size before the first anticipated nectar flow, which usually occurs in early to mid-spring. This buildup phase is akin to having a house full of growing teenage athletes with an unlimited need for food. If an apiary is in a locale with limited pollen availability during spring buildup, the colony will suffer. The problem here is that spring buildup begins shortly after the winter solstice, a time when many areas may experience a lack of natural pollen, making the use of pollen patties a justified management option.

However, before plopping that patty down in the hive, understand there is a significant risk involved. The more brood a hive has, the more food that hive needs, and the faster they will run through their winter stores. Compounding this issue is the necessity of increasing the temperature around the growing brood. In a broodless hive, clustering bees maintain a central temperature of around 70 degrees F while a hive with brood requires a temperature closer to 94 degrees F. Think in terms of heating your house. If you bump up your heat by 24 degrees F every day, your energy bill is going to go through the roof. So does the colony's need for energy and thus the need for more food. This puts the hive in danger of running through their stores too fast and starving to death before the nectar flow begins. Because of this, many beekeepers elect to NOT supplement pollen, allowing nature to run its course with the bees only building up once they determine there is sufficient naturally available pollen.

Another concern for adding pollen patties too soon is prolonged cold spells during build up. The larger the brood pattern, the more adult bees are needed to maintain the correct temperature. If the brood pattern outgrows the cluster size —

easy to do as the aging winter bees slowly dwindle away — bees may be spread too thin during a long cold spell and risk death by freezing and starvation. Again, yet another reason that many choose to not supplement.

If you're on the fence about pollen substitutes, the best way to determine if your girls need supplemental pollen is to jump in and give it a try while keeping the aforementioned concerns in mind. For the first experiment, I recommend waiting until after the winter solstice at a minimum to reduce the chances of growing too much too soon. Each area is different with early spring pollen availability varying by as much as three months or more across the U.S., so experimentation will be key here.

DIY patties are easy to make with any leftover patties going into the freezer or a spare refrigerator until needed. Bees are notorious for tossing out any items they deem unnecessary to their survival, so if your colonies don't need the extra help, you'll likely find patty crumbs scattered on the landing board.

To get started making your own patties, you'll need a recipe. Many are readily available online with many folks adding various supplements such as essential oils, amino acids, or probiotics. However, it's often best to begin by keeping it simple. The most basic recipe calls for nothing more than a container of pollen substitute that's readily available through many bee supply companies and either 1:1 or 2:1 sugar syrup and a mixer or sturdy spoon.

There are no explicit quantities of either ingredient for patties. What you're going for is an end product with a firm consistency that can be placed on a sheet of wax paper and flattened. Depending on how many hives you want to feed, pour about one cup into the bowl per hive to get you started. Then add just enough sugar syrup to make a malleable dough. Some beeks

The spring brood buildup begins shortly after the winter solstice, a time when many areas experience a lack of natural pollen, making the use of pollen patties a justified management option.

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create firmer patties that resemble biscuit dough while others make a peanut butter cookie dough texture. It's really a matter of preference, so experiment with what you and your bees like best.

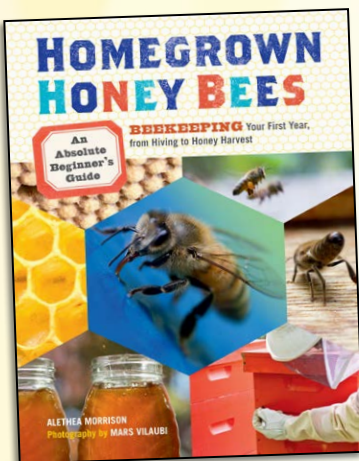
Once you have your dough ready, simply scoop a portion out and flatten between two sheets of wax paper using your hands or a roller. Place immediately in the hives on the top bars of the brood frames so nurse bees have easy access. Some folks prefer to remove all of the wax paper while others leave the bottom section of wax paper to rest upon the frames. Either way works, so again it's up to your preferences.

The amount of time a patty lasts in a hive depends on the needs of the bees and how interested they are in removing unwanted patties. The one problem to watch for is small hive beetles (SHB) in areas that have these pests, particularly during warm weather. SHB adore patties and believe you made these just for them. It is often recommended to remove any uneaten patty within 72 hours to help prevent SHB buildup instead of bee buildup if beetles are a concern.

That's basically all there is to know regarding how to make your own pollen patties with a brief overview of the how and why of pollen substitutes. One of the keys to beekeeping success is to continue learning how to provide the best nutrition we can for our bees and be willing to experiment a bit with what we learn. 🐝

Beekeeping Your First Year, From Hiving to Honey Harvest

By Alethea Morrison • Photographs By Mars Vilaubi



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KRISTI COOK lives in Arkansas where every year brings something new to her family's journey for a more sustainable lifestyle. She keeps a flock of laying hens, dairy goats, a rapidly growing apiary, a large garden, and more. When she's not busy with the critters and veggies, you can find her sharing sustainable living skills through her workshops, articles, and blog at tenderheartshomestead.com.



Plastic Frames With Wax Moth Damage

Dave D. asks: *I have some plastic frames that had severe wax moth damage; they were also never fully drawn out. I have scraped them down to the plastic as much as practical and am wondering if there is a way to rehab them that is worth the effort.*

Rusty Burlew replies:

Freezing is the very best way to kill wax moths on frames, whether it's made of wood or plastic. Freezing is effective because it kills all life stages of the moth: eggs, larvae, pupae, and adults. If your freezer is very cold, an overnight freeze is usually sufficient, but if your freezer is less cold, two or three days may be necessary. As a general rule, a chest freezer is colder than the freezer unit in a refrigerator.

However, once the moths are dead, the frames need to be inserted into a strong colony or stored in a place where flying wax moths can't get to them. Freezing has no protective action. Once the frames return to room temperature, they must be kept away from egg-laying adult moths.

When dealing with wax moths, it helps to remember what they want. Just like all animals, they need a source of carbohydrates, protein, fat, vitamins, and minerals. Wax moths get these from detritus in the brood cells — the cocoons, feces, dead bees, and parasites that accumulate there. Usually, cells that never contained brood, such as honey cells, don't attract the moths.

Wax moths are no match for a strong colony, so they are opportunists, always seeking out the weaker colonies that don't have enough bees to raise brood, store honey, and defend the hive. These are the types of colonies that succumb to moths.

The frame in your photo doesn't look like it has much to offer a wax moth, so don't be afraid to re-use it. If you want to freeze it, that's fine, but you probably don't need to. As long as you keep your colonies strong, the wax moths will move on, searching for easier pickings.

By the way, my husband has used my IR camera to find studs in the walls, water pipes, and check for faulty electrical connections. They have many uses beyond the beehive. 🐝



RUSTY BURLEW is a master beekeeper in Washington State with an undergraduate degree in agronomic crops and a master's degree in environmental studies with an emphasis on pollination ecology. Rusty owns HoneyBeeSuite.com, and is the director of the Native Bee Conservancy of Washington State.

Ask the Bee Expert!

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How to Support Your Solitary Bee Population

Solitary Bees Play a Critical Role in Pollination



BY LEAH GRUNZKE

BEES ARE PROFOUNDLY IMPORTANT to our larger ecosystem. And yet, many of us are only familiar with a tiny branch of the bee family. There is a rich depth to the world of bees, with an incredible diversity of unsung heroes — solitary bees — waiting to be discovered.

Honey Bees and Bumblebees Form Social Colonies

We are all familiar with the charismatic honey bee — the poster child of the *Hymenopteran* family, which includes bees, wasps, ants, and termites. Honey bees are social insects with highly structured colonies. Queens, drones, foragers, guards, nurses, builders, and so on; each individual plays a key role in collectively raising the hive's brood. All honey bees, whether in managed hives or wild colonies, are of the species *Apis mellifera*, imported to North America from Europe in the 1600s for use in honey production and, later, crop pollination. While certainly the most famous, *A. mellifera* is far from the only species of bee in the world.

Bumblebees are also beloved and familiar to most of us. Bumblebees, like honey bees, form social colonies to collectively raise their offspring. There are about 50 species of bumblebees (*Bombus sp.*) native to North America, where their large bodies are well adapted to the cold northern climates. They're important pollinators of *Solanaceae* plants — potato, tomato, pepper, petunia, and many others.



Leafcutter bee.

Understanding Solitary Bees

There are more than 20,000 species of solitary bees. Native to nearly every corner of the globe, they are adapted to a vast diversity of climates and habitats. More than 4,500 species are native to North America, with the number ever growing as new species are discovered and identified.

These bees range from the size of peppercorns to over an inch long. Some resemble their honeybee and bumblebee cousins; others look like wasps, houseflies, or winged ants. Some people ask: Do solitary bees sting? They don't make honey, and without a hive to defend, they rarely if ever sting.

Three-quarters of native bee species dig tunnels in the ground to build their nests. The rest find nooks and crannies to lay their eggs in — woodpecker holes, beetle tunnels, even crevices in buildings. Life cycles of different species vary but follow a pretty consistent pattern.

How Long do Solitary Bees Live?

In temperate climates, solitary bees emerge in spring and summer. Males are the first to come out,

and wait nearby for the imminent rush of females. The male's life outside is short and sweet; he'll spend his entire life mating and be gone within a week or so. Females live closer to six weeks and get to work immediately building and provisioning their nests.

After finding a suitable tunnel or cavity (maybe the one they just emerged from!) they start by laying an egg. A bundle of food is tucked along with it — pollen for protein and nectar for carbohydrates. The lot is wrapped in a protective cocoon and sealed off into an individual cell using mud, leaves, tree resin, or other natural materials. Each female will build 10-20 of these brood cells over the course of her life. The eggs inside hatch into larvae, and later pupate into their adult form. The young bees overwinter in their sheltered nests and emerge the following season to start the process anew.

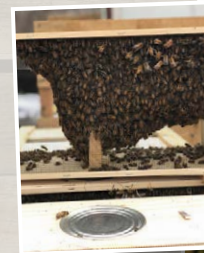
Solitary bees are incredibly efficient foragers, whose importance as pollinators cannot be overstated.

With their enormous diversity in species, there are wild bees adapted to fill a vast array of



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ecological niches. There are species that emerge very early in spring, or are most active late in the season, covering a wide range of bloom times. Being native to their region's climate, they're able to withstand weather conditions

Solitary bees include mason bees, leafcutters, carpenter bees, miner bees, sweat bees, and others. Solitary bees are largely docile and overlooked, but they play a critical role as pollinators.

imported honey bees may not. Solitary bees are the exclusive pollinators of some plants, like alfalfa, and critical players for others like melons, stonefruits, legumes, and the bulk of native flowering plants. Not only do solitary species play a key role in many of our food crops, they are also responsible for pollinating the plants that wild animals, rodents, and birds feed on. Without wild bees, our native plants and the herbivores they support would be in serious trouble.



Bee watering station.

Solitary Bees Are Under Attack

Solitary bees face some of the same threats to their population as honey bees do. Parasites and disease can be a problem, as can the widespread use of toxic chemicals in the environment. Climate change is creating subtle shifts in breeding and bloom seasons that have far-reaching impacts. And loss of habitat is perhaps the single biggest threat to wild bee populations. Large expanses of ecologically barren grass lawns, urban sprawl, and city planning that doesn't prioritize green space all result in a loss of the floral biodiversity and suitable nesting sites critical to these essential insects' survival.

How to Support Native Bee Populations

Whether you live in a rural or urban setting, there are simple steps you can take to support native bee populations.

- Use caution and restraint with chemical fertilizers or pesticides. They are often unnecessary and toxic to beneficial insects.
- Maintaining lawns is expensive and time-consuming. Consider converting turf areas to biodiverse landscapes that provide food for pollinators.
- Wild gardening mimics nature, and nature can be untidy. Provide shelter and nesting materials with standing snags, brush piles, and natural, permeable mulch. Leave some soil bare to encourage ground-nesting bees.
- Don't forget water! A pie plate filled with stones provides a perch for insects to take a drink without falling in.
- Plant a diversity of flowering plants, opting for species native to your area rather than hybrids or imports. Aim for variety in flower color, shape, and bloom times. Bees love blue and white flowers, tubular blossoms, and wide landing pads like those in the sunflower family.



Brood cells.

- Pay attention to the shoulder seasons, and choose plants that flower in early spring and late fall when other pollen sources are scarce.
- Educate your urban planners! Rooftop gardens, pollinator-friendly roadside plantings, and native landscaping in parks are all meaningful ways to support wild bees in the city.

The world of bees is wide and full of fascination. Resources like The Xerces Society and Pollinator Partnership provide many opportunities to learn more, and programs like The Great Sunflower Project and Insight Citizen Science let you get involved and contribute valuable data on these understudied insects. Happy bees make a happy world, so keep learning! 🐝

LEAH GRUNZKE, originally from Minnesota, has spent the last 20 years working and playing in Montana. She earned degrees in Horticultural Science from MSU-Bozeman and Nonprofit Administration from UW-Missoula. She runs Flora Montana, an independent business dedicated to backyard wildlife conservation and building habitat for native pollinators.



BUILD YOUR OWN BEE HOUSE

“Insect hotels” readily attract mason bees, leafcutters, and other cavity-nesting species, and are a fun way to observe solitary bees up close. Houses for bees may be elaborate or very simple; just remember these tips to create your own!

- Provide tubes made from paper straws or hollow plant stems. Bamboo works great, but you’ll find hollow stems in a wide variety of garden perennials, especially plants in the carrot family. Tube diameter should be around ¼-½". Cut tubes to be at least 4" in length, but not longer than 8". This ensures females will lay enough of both male and female eggs to support the population next season.
- Place tubes in a sturdy frame with a back on it. Instead of tubes, you can also choose to drill holes in a block of wood using a ⅜" bit. Cedar is said to repel insects, but most other untreated scrap wood will work fine. Avoid toxic paints and varnishes and instead brush on mineral oil, which gives an excellent protective finish to tube frames and drilled blocks.
- Hang your bee box facing east toward the rising sun, in a spot with some protection from heavy winds and rain. Cover the front with small-gauge chicken wire if woodpeckers are a problem; their long tongues can reach deep into the cavities where young bees are developing.
- Native bees are adapted to your local climate, so there is no need to take your nesting box inside for the winter. To avoid buildup of pests or disease, replace old tubes and clean out drilled holes with a pipe cleaner dipped in a 5% bleach solution every couple of years.
- Provide plenty of bee-friendly plants for forage, then sit back and enjoy watching your busy native bees at work!

INSTALL PACKAGE BEES IN A LANGSTROTH HIVE

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Learning how to install package bees isn't all that difficult, but if you are new to beekeeping, it can be helpful to review the process from start to finish.



SUPPLIES FOR INSTALLATION DAY

Spray bottle with sugar water

1:1 sugar water for feeder

Mini marshmallow (one per queen cage) — if your queen cages don't have a candy cork

Small piece of clean cardboard (minimum 6"x6" should be plenty)

Hive tool

Pocket knife

Veil

Suit

Gloves

Lit smoker (optional)



PICK UP YOUR PACKAGE BEES

You'll want to pick up your bees as soon as possible from your local dealer or from the post office. To control temperature and ward off any stray bees flying around your vehicle, a big sheet comes in handy. Keeping them in a trunk is acceptable as well, as long as it isn't an exceptionally hot day. If you are unable to install them promptly, keep them in a temperate location (not too cold or hot), like a dark, draft-free basement, garage, or outbuilding. If they have run out of feed — generally a tin can inserted into the package — you can mist the outside of the package screen twice a day with a 1:1 sugar syrup in a clean spray bottle.

OKAY, LET'S INSTALL!

1. Remove the telescoping cover, inner cover, and three to four middle frames and set them aside.
2. Mist your packages with sugar water. If it's below 60 degrees F, avoid this step as you don't want to chill your bees. This gives the bees a little boost after a long journey.
3. Give the package one forceful shake to knock as many bees as possible to the bottom.
4. Remove the feeder container from the package.
5. Place a piece of clean cardboard or some other "lid" to prevent the bees from flying out at this point.
6. Grab the tab or the queen cage and shimmy it out. Remove the queen cage and inspect her (without releasing her!). She will have other bees clustering around her. You can brush them off gently with a feather or your gloved hand.
7. Replace the cork with a mini marshmallow. This gives the colony time to get used to their new queen while they eat through the marshmallow.
8. Place your queen cage. Position her evenly between two frames. If your queen cage has a metal tab, bend it around the frame. Otherwise, you can rubberband the queen cage around the frame until the queen is released.
9. Next, dump the bees into the hive.
10. Place the nearly empty package near the hive entrance and let the bees make their way into the hive throughout the day.
11. Gently replace the frames until all of your frames are back and evenly spaced.
12. Place a pollen patty on top of your frames between the inner cover or the top feeder, depending on your setup.
13. Place your feeder of choice — Boardsman, top feeder, in-frame feeder, to name a few. Fill your feeder with 1:1 sugar water and Honey B Healthy.
14. Return your inner cover and telescoping cover. You'll want something heavy on top — like a brick — to protect against predators or a windy day.

BACKYARD BEEKEEPING

ASK THE EXPERT: RUSTY BURLEW



Is Fondant Actually Detrimental to Bees?

David D from Massachusetts writes: *I heard from someone who should be a reliable source that fondant has been found to be detrimental to bees. Is this true? Secondly, I have a big block of purchased fondant that is very difficult to divide into smaller sections. So if fondant is safe, can I just put it out in the yard and let the bees feed on it as the weather allows?*

Rusty Burlew replies:

Common table sugar (sucrose) is a disaccharide made from two simple sugars: fructose and glucose. When you cook sugar or add an acid such as vinegar or cream of tartar, you break the molecular bonds that hold sucrose together and end up with the two simple sugars. It's the fructose portion that causes the problem. When fructose is heated it produces hydroxymethylfurfural (HMF), which is toxic to bees. So these days, more and more beekeepers avoid adding heat or acidifiers to sugar.

Beekeepers have been cooking syrup and making fondant for generations, yet this toxicity only became apparent relatively recently. Feeding cooked syrup will not kill a colony, but researchers have found that HMF may shorten the lifespan of some bees in the colony, depending on how much HMF they've eaten. The fear is that if you lose, say, 5% of a colony to HMF, and 8% to nosema, and 30% to viruses, you eventually reach a tipping point that may kill the entire colony. So, to reduce total risk, you can avoid cooked sugar products.

If you search online for HMF in sugar syrup, you should find plenty of articles. In addition to increases in HMF due to heat and acidifiers, just the process of aging increases it. Honey is mostly glucose and fructose, and as honey ages, it too produces HMF. Lots of beekeepers still cook syrup, so you can expect to hear other opinions. The harmful effects of HMF are well-supported, but how much damage it does is still debated.

In my opinion, feeding your bees the fondant you already purchased will not do noticeable harm, but



you may want to avoid it in the future. I started using only no-cook feeding techniques about 10 years ago and I've had excellent success with overwintering. Not only is it better for bees, but it saves a lot of work.

You can put your block of fondant outside, although bees don't fly much once the temperature drops below 60 degrees F, so make sure they have plenty to eat within the hive. Also, don't put the food too close to the hive because it may attract predators toward the hive, including bears, if you have them. 🐻

RUSTY BURLEW is a master beekeeper in Washington State with an undergraduate degree in agronomic crops and a master's degree in environmental studies with an emphasis on pollination ecology. Rusty owns HoneyBeeSuite.com, and is the director of the Native Bee Conservancy of Washington State.

Ask the Bee Expert!

Visit backyardbeekeeping.iamcountryside.com and get answers to your beekeeping challenges through our live interactive chat. You can also email us at editor@countrysidemag.com or mail your inquiries to **P.O. Box 566, Medford, WI 54451**.

How to Grow a THREE SISTERS GARDEN

BY STACY BENJAMIN



Young three sisters planting (with artichoke in the background).

IBELIEVE IN TAKING A PRACTICAL APPROACH TO GARDENING that should reward your efforts with a bountiful crop at the end of the season. That's why I focus my summer garden on growing vegetables that I know will do well in my climate. After all, there's no sense in spending all that time starting seeds and weeding and watering the garden all summer only to have vegetables fail to produce because the growing season isn't long enough for crops that require long hot summers. There are a lot of beautiful fruits and vegetables that I've just about given up on trying to grow. Colorful peppers, melons, and those beautiful arch trellises covered with exotic-looking gourds and luffa vines just don't do well for me with our relatively short growing season.

But that doesn't mean I don't experiment with new things every once in a while just for the fun of it. A few years ago, I was looking for a way to add some vertical interest to my garden and more color to my garden harvest. That's what led me to try growing the beautiful heritage corn and bean varieties that I had been swooning over after seeing them popularized in my social media feed. I was also interested in trying the traditional method of growing these crops with the three sisters method used in Native American agriculture. The three sisters is a companion planting consisting of corn, beans, and squash, with each plant supporting and complementing the others. I was delighted with the beautiful focal point the three sisters planting made in my garden, as well as the harvest, and now I grow a small three sisters garden every year.

The Three Sisters

There are many corn, bean, and squash varieties that can be used in a three sisters planting, so you can select the varieties that suit your preference and your available space. For the corn, you can grow a sweet corn for eating fresh as corn on the cob, or you can grow one of the beautifully colored heirloom types of corn that are used as popcorn, grinding into corn meal or flour, or simply for decoration. For the bean, you will need to use a pole bean variety so that the vines will grow up the corn stalks. You can grow a green or snap bean variety that are eaten fresh, pod and all, or you can grow a shelling-type bean, which are eaten either fresh or dried. Don't use a bush bean variety because not only will it not grow up the corn, it will be so short that it will be shaded out by the corn and won't produce well. There are almost endless varieties of beautiful heirloom beans that you can use in your three sisters garden. If you have plenty of room to let the squash sprawl, you can plant any type of winter squash. If you have more limited space, select one of the mounding or smaller varieties of summer squash.



Stacy in her mature three sisters garden.

Here are the varieties that I plant in my three sisters garden.

GLASS GEM CORN

Glass gem corn produces an amazing array of kernel colors in every color of the rainbow. You won't believe your eyes when you peel back the husks on the first ears that you harvest. You may even let out a scream of excitement; I know I did! The plants are usually six to eight feet in height, with each stalk producing two ears of corn on average. The ears are smaller and narrower than those of sweet corn and are usually five to eight inches in length. I typically get a couple dozen ears of corn from my small three sisters garden.

GOOD MOTHER STALLARD BEAN

Good Mother Stallard bean is an attractive maroon and white speckled bean. They are a shelling-type bean that is eaten after the beans are dried. They are great in soups, where they keep some of their speckled beauty and they have a nice creamy texture. I typically harvest a few cups of beans each year. It's not a lot, but it's fun and I enjoy having them for a few special meals.

SUMMER SQUASH

I grow my three sisters garden in a fairly small area, about 10 feet in diameter, so I use the smaller mounding types of summer squash. I plant zucchini and crookneck squash since they tend to stay in their allotted space better than some of the more vigorously growing squash varieties.

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Right: Beans vining up the corn stalks.

Below: A rainbow ear of glass gem popcorn.



give them supplemental supports. I use cut branches or bamboo poles placed in a triangle and tied together at the top. Plant the squash along the outer edge of the corn and beans, and the large squash leaves will shade the ground to conserve moisture and prevent weeds.

Harvesting

If you are growing popcorn or one of the heirloom types of flint or flour corn you can let the corn ears mature and dry on the plant. Wait to harvest the ears until the husks are dry and brown. If you are growing a sweet corn, you'll want to pick the corn earlier in the season while the kernels are still tender and sweet. If you are growing soup beans, you'll leave the bean pods on the plant until the bean pods turn brown and harvest them when the pods are dry. If you are growing a green bean or a snap bean, you'll want to harvest them earlier when they are at their peak of freshness. Summer squash can be harvested as they are ready, of course. If you are growing a winter squash, wait to harvest until they are fully mature, have a hard rind, and the stem is dry.

Planting Instructions

The three sisters are warm-season plants, so wait to start the seeds until soil temperatures are warming in the late spring and plant in full sun. Plant the corn first, spacing them between six and 12 inches

apart. Wait to plant the beans until the corn is several inches high so that it will be strong enough to support the faster-growing beans. Interplant the beans approximately three inches from the corn. The bean vines tend to grow quite tall so I

I hope you will give the three sisters garden a try and enjoy growing some of the beautiful varieties of heritage corn and beans for enjoying through the winter! 🌱

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STACY BENJAMIN lives on 4.5 acres in St. Helens, Oregon with her husband and her flock of four dozen-ish chickens and heritage Narragansett turkeys. She is an avid gardener who enjoys preserving her garden harvest, as well as making handmade soaps and other natural products. Find her on Instagram @5farmoregon and @5farmsoap and on her website www.5farm.com

Pomona's Strawberry Prosecco Jelly

Recipe by Allison Caroll Duffy

Ingredients

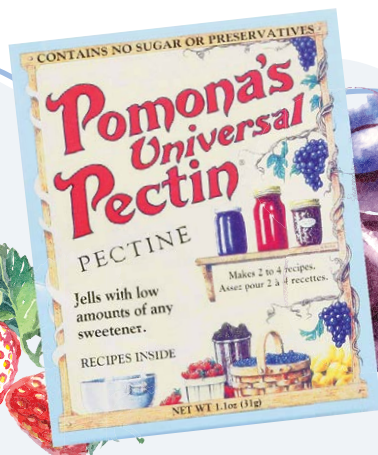
- 3 pounds strawberries (~3 level quarts)
- ¼ cup lemon juice
- ½ cup water
- 4 teaspoons calcium water
- 1 cup prosecco
- 1 cup sugar
- 4 teaspoons Pomona's pectin powder

Before You Begin

Prepare calcium water — To do this, combine ½ teaspoon calcium powder (in the small packet in your box of Pomona's pectin) with ½ cup water in a small, clear jar with a lid. Shake well. Calcium water should be stored in the refrigerator for future use.

Directions

- 1 Wash and rinse jars, lids, and screw bands. Set screw bands aside until ready to use. Place jars in boiling water bath canner with a rack, fill at least 2/3 of the way full with water, and bring to boil. Boil jars for 10 minutes to sterilize (add 1 additional minute of sterilizing time for every 1000 feet above sea level), then turn down heat and let jars stand in hot water until ready to use. Place lids in water in a small pan, bring to a low simmer, and hold there until ready to use.
- 2 Rinse strawberries and remove stems. Combine strawberries and ½ cup water in a sauce pan. Put a lid on the pan and bring to a boil over high heat. Reduce heat and simmer, stirring frequently and mashing as you go, until berries are soft and have released their juices – about 2–4 minutes.
- 3 Remove pan from heat and thoroughly mash berries. (Potato masher works well for this.)
- 4 Transfer mashed berries into a jelly bag. (An impromptu bag made from layers of cheesecloth wrapped around the mashed fruit and gathered at the top works) Suspend jelly bag over a large bowl and allow the mashed fruit to drip juice into the bowl until you have accumulated at least 3 cups of strawberry juice. This will likely take 2–4 hours. After accumulating the necessary 3 cups of juice, discard the berry pulp, or use it for something else.
- 5 Measure out 3 cups of strawberry juice. Pour the measured quantity of strawberry juice into a sauce pan. Add prosecco, calcium water, and lemon juice, stir to combine.
- 6 In a separate bowl, combine sugar and pectin powder. Mix well and set aside.
- 7 Put the sauce pan on the stove and bring strawberry mixture up to a rolling boil over high heat. Add sugar-pectin mixture, then stir vigorously for 1–2 minutes, still over the highest heat, to dissolve pectin. Return jelly to a boil, then remove from heat.
- 8 Remove hot jars from canner and fill with jelly, leaving ¼ inch headspace. Remove trapped air bubbles, wipe rims with a damp cloth, and put on lids and screw bands, tightening only to “fingertip tight” (until resistance is met, and then just the tiniest bit more).
- 9 Place jars in the hot water, on the rack inside the canner. (Make sure jars are upright, not touching each other or the sides of the canner, and are covered with at least 1-2 inches of water). Place the lid on the canner, return to a rolling boil, boil for 10 minutes. (Add 1 minute additional processing time for every 1000 feet above sea level)
- 10 Turn off heat and allow canner and jars to sit for 5 minutes. Then remove jars from canner.
- 11 Allow jars to cool undisturbed for 12–24 hours. Then confirm that jars have sealed. Remove screw bands from sealed jars, rinse off outside of jars if necessary, label jars, and store for later use.



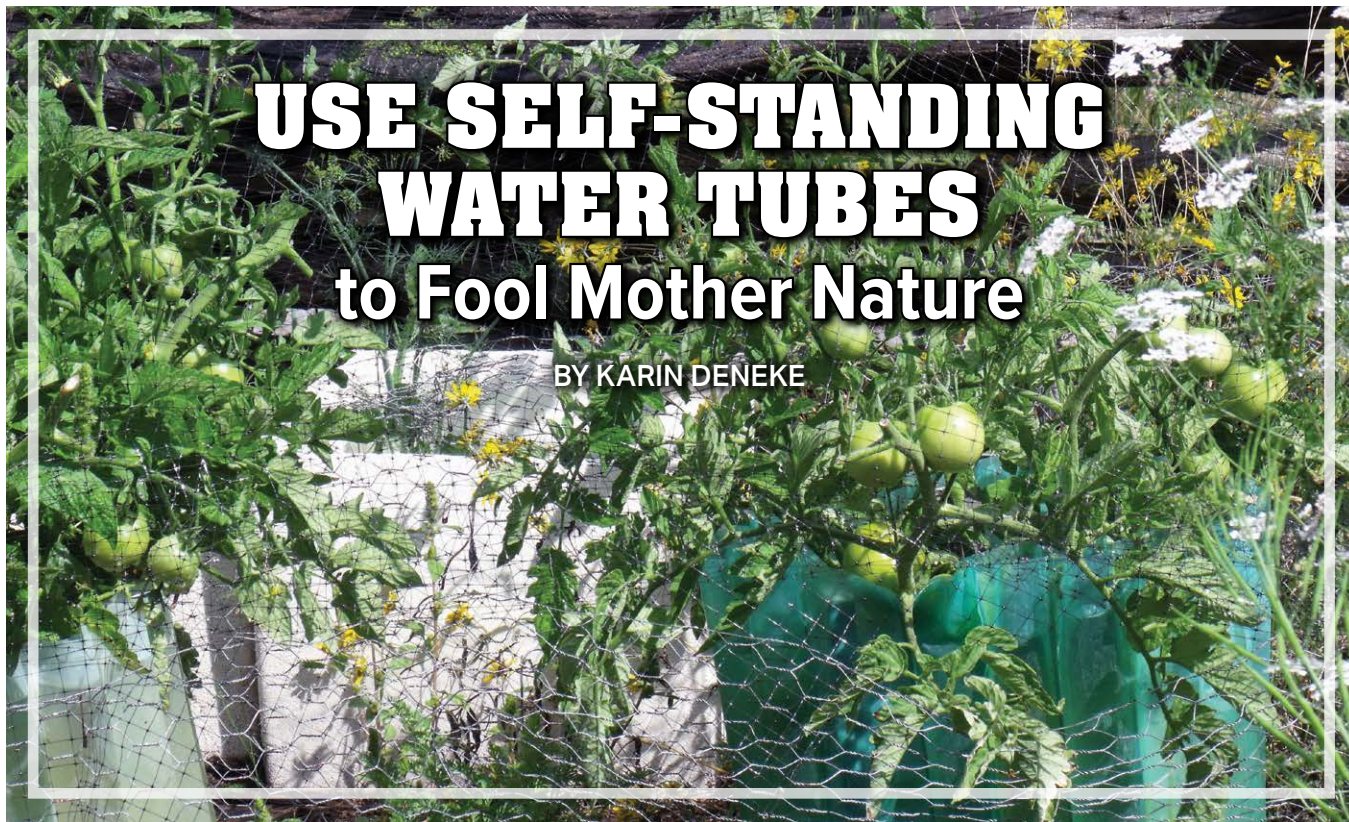
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USE SELF-STANDING WATER TUBES to Fool Mother Nature

BY KARIN DENEKE



PLANNING YOUR NEXT GARDEN REQUIRES MORE than looking at pretty pictures in the seed catalogs. If you are an old pro, you are familiar with the relative length of your growing season and what plant varieties to select. If you are new at this, you should learn which produce varieties can safely be raised at your location — what time to expect the last night frost in spring and the first killing frost in fall.

Our changing climate is making it more difficult to follow the old rules. If you are buying seedlings from a nursery or garden center and transplant these too early when there is still the danger of a late frost, there is a good chance they may perish. And that possibility becomes even greater if you do not allow those seedlings to acclimate at your location by setting them in a sheltered spot for a few days prior to planting. A friend of mine, who was too eager to get his garden in, twice in one season lost most of his nursery transplants and was forced

to return a third time to replace his plants.

I prefer planting mostly seeds that take 10 days or longer to germinate depending on varieties. These plants will be more acclimated to the existing conditions as they emerge. Seeds of certain hardy varieties can be planted early, and those that are super sensitive to cold spells a week or so later.

Guidelines published in your seed catalogs are helpful and should be observed. Most catalogs publish the USDA Plant Hardiness Zone Map. Color-coded, it defines the various planting zones based on annual minimum winter temperatures, separated by 10 degrees F each. For example, Zone 5 is 10 degrees colder than Zone 6; Zone 4 is 10 degrees colder than Zone 5. Most states have more than one hardiness zone. Wyoming, for instance, has four sub-zones.

Elevation, rainfall, wind, soil type, and average days of sunshine all enter into the picture. For instance, if you reside in the high-elevation San

Luis Valley of Colorado, count on an average growing season of three months. Your frost-free days, give or take a few, range from the middle of June to the middle of September. This short growing season puts a limit on the annual produce varieties you can raise.

Surprisingly, there are perennial varieties such as rhubarb, horseradish, and asparagus that do well at this location as long as you provide water when needed.

In areas with a short growing season, potatoes, beets, cabbage varieties, and an assortment of greens do well. When it comes to nightshade plants, such as tomatoes, which are extremely sensitive to frost, you can fool Mother Nature by protecting the fragile transplants. You may have raised them from seeds in your windowsill with shelters during the early part of the growing season, so you've given them a lot of love and don't want to see them freeze.



A good way to protect your plants from frost is to use self-standing water tubes. Sold in packages of five, they are made of strong plastic and are 18 inches high, with 18 water wells each. But they do require a little patience to set up. It's best to line up these helpful items before getting started. That would include using a five-gallon bucket with handle removed, or a similar container, four to five 2"x 2" wooden stakes at 2' in length, a small sledgehammer, and a watering hose ready to use.

Carefully transplant your seedling and then cover it with the upside-down bucket. The bucket protects your plant while you install the water tube, which you pull over the bucket. Fill each of the 18 wells by using your hose. By the time all tubes of the shelter are filled, it is free-standing, and you can remove the bucket. To make the shelters sturdier, support them from the inside with your wooden stakes. In high-wind areas, this is a must.

Now your seedling has green-



house-like protection, open at the top to allow rain to enter. The semi-transparent water-filled cells are heated by solar energy during the day, releasing it gradually during the night. Even on cloudy days, there is a certain amount of solar gain. It will take a few weeks for your transplants to emerge from the shelter. During that period, it has already brought forth a few blossoms and is fruiting. Once it protrudes from the shelter, it will grow rapidly. At my elevation, I preferred not to remove the shelters.

When the growing season comes to an end, there are always a number of green tomatoes left on the vine — do not discard these. Fried green tomatoes can be a special treat when sliced and fried to a golden brown. You can also wrap green tomatoes in newspaper and store them in a box in a cool room where they will ripen slowly and last for weeks. ©



KARIN DENEKE has a background in soil science and is an advocate of the USDA Soil Survey. She resides at 9,000 feet in the Sangre de Cristo Mountains of Colorado in an energy efficient, passive solar/hybrid home, constructed with a Douglas fir timber frame, stuccoed exterior straw bale walls, and interior adobe walls separating the individual rooms.

Plant Some Sun in Your 2021 Garden

BY JULIA HOLLISTER



LOOKING FOR A CROP THAT'S BEAUTIFUL, EASY to grow, simple to germinate, and not a water guzzler? Maybe, it's time to rediscover sunflowers.

"I plant sunflowers and many other flowers as well, both annuals and perennials," said Colorado physician Eileen Milvenan. "The sunflowers attract bees for nectar and birds for the seeds. The 'volunteer' sunflowers come up all over the property, from seeds deposited in bird poop."

She typically orders seeds from Fedco, (a cooperative seed company in Maine) or Johnny's Selected Seeds, which is a big company that supplies seeds and many farming tools and products. The super-tall sunflowers are Russian Grey Stripe Sunflowers from High Desert Seeds, a local seed company in Montrose, Colorado.

"We have an organic garden farm in which we grow a majority of the vegetables and fruit that we eat, and we preserve our summer harvest by canning and freezing," she said. "Our sunflower area is usually

about 9x25 feet."

The sunflower, *Helianthus annuus*, is native to North America; the Native Americans prized it as an important, high-energy food source. Sunflower oil is a healthy choice; it is light in taste, supplies more vitamin E than any other vegetable oil, and delivers low levels of saturated fat.

Sex and sunflowers, who knew? Researchers affirm the production of hybrid sunflower seeds involves planting male and female (male sterile) lines in the same fields, usually alternating with six rows of females and two rows of males. Males generally possess multiple flowers on a stalk, compared to the single composite female flower.

Dr. Milvenan admits she had some variability in seed germination, especially last year. Most of the first seeds she planted directly into the soil did not come up. Shopping for more seeds, she was happy to find the giant variety. Once a plant has a good start, they grow well, as long as there is adequate sun and water.

"There are so many varieties, including dwarf-sized (two to three feet), but I believe the typical range is usually five to 10 feet," she said. "The size of the stalk is so thick and stiff, it's hard to imagine that it developed in just two to three months from a single seed!"

A word of warning: sunflowers are called "allelopathic," meaning that they secrete a material that can be toxic to other plants growing near them. As a result of this possible negative effect in the garden, sunflowers are grown in one block, always with the corn.

Tip: Sunflowers need to be planted at the back of the garden, and they definitely need full sun. Depending on the moisture in the soil, if the ground isn't warm enough to germinate a seed within about a week, then the seed will just rot and not germinate.

"It would be hard for me to quantitate the benefits of these tall beauties, but they add to the diverse growing environment on our property," Dr. Milvenan said. "We don't eat the seeds, but let the birds enjoy

them, initially on the plant, once seeds have developed from the pollination efforts of the bees.”

When fall clean-up comes along, she cuts off the blossoms that have seeds remaining and saves them in a bin. Then in January and February, she spills them out onto the deck and watches the birds dine. House finches and other finches, redwing blackbirds, magpies, mourning doves, jays, and sparrows enjoy the feast.

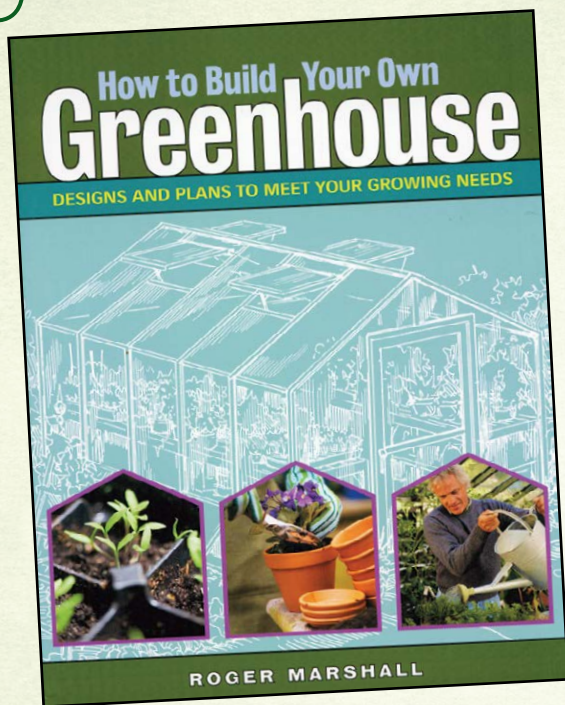
California growers Greg and Coco House have another use for sunflower seeds.

“Chickens love the sunflower seeds,” Coco said. “It takes about 120 days for the heads to turn from green to yellow and finally to brown and the seeds harden. We cut the heads off and toss them into the chicken coop to the waiting beaks.

“The treat seems to keep the chickens active and provides some entertainment for us.” ©

JULIA HOLLISTER is a longtime journalist with a passion for all things sustainable. Raised in a rice growing family on the Texas Gulf Coast, she quickly learned the value of living off the land. Julia once taught gold panning in the Sierra Foothills and loves finding ways to stretch a dollar by finding new uses for everyday household items.

TIP: Sunflowers need to be planted at the back of the garden, and they definitely need full sun. Depending on the moisture in the soil, if the ground isn't warm enough to germinate a seed within about a week, then the seed will just rot, and not germinate.



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Setting Up An Efficient Outdoor Brooder

BY AMY FEWELL

EVERYONE NEEDS AN OUTDOOR CHICKEN BROODER, and I'll tell you why. I can't stand having chicks in my house. There, I said it. I said what everyone wants to say but won't say. The dust, the smell of chick poop (mostly when they are older), and the peeping just isn't the most convenient thing. The cute chick stage from hatch to about seven days old is just fine. It's when they reach the "I want to fly out of the brooder and poop all over everything" stage that simply isn't for me. So, we created an outdoor chicken brooder.

What we didn't realize is that we could utilize this brooder for so many other things as well! When you're not using it for chicks, you can use it for a sick hen, a broody hen, and even a quarantine area. The best part is that you don't really need chicken brooder plans to set this up. It can be as simple as utilizing a rabbit hutch or stock tank, or as complicated as building your own brooder in your chicken coop.

Types of Chicken Brooders

There are a few ways you can set up an outdoor chicken brooder. First, you'll need to figure out what structure is good for you. Each chicken keeper will have different needs based on their location and property. Here are some ideas to consider.

RABBIT HUTCH: Something as convenient as a rabbit hutch makes a great outdoor brooder. Wire flooring will make it convenient for you to keep the area clean, and you can often find rabbit hutches locally for a great price.

SMALL COOP: One of the quickest ways to set up an outdoor chicken brooder is to buy a small, pre-fabricated coop. Most of these small coops have chicken runs attached, which is a great way to get your chicks on pasture as soon as possible. These will cost you anywhere from \$200 up.

GALVANIZED STOCK TANK: Most commonly seen at your farm store during chick season, you can use these outside as well. Just make sure they are in a covered area out of the wind and elements. You'll also need to make some type of sturdy cover out of lumber and wire so that no predators can get into the tank, including mice and rats. These will generally start at \$85 and go up from there, depending on the size.

OLD DOGHOUSE: Our very first outdoor brooder was made out of an old doghouse on our property. We built it up so that a heat lamp could be securely hung from the ceiling.

MAKE YOUR OWN BROODER: If you can't find what you're looking for, or you want to make your own brooder, that's possible too! I'd recommend making sure your homemade brooder has wire flooring. Trust me when I say, this is a lifesaver. Wire flooring is even safe enough for little chicks.



The safest way to use a heat lamp in any outdoor brooder is to have the heat lamp far enough away so that the chicks can't jump into it, or to place a layer of wire between the lamp and the chicks.

CHICK BEDDING

Most popular, pine shavings are a great bedding option no matter the brooder. You can also use straw or organic material, like dry leaves, from your yard.

FEED AND FEEDER

Make sure you are using a quality feed for your chicks — medicated or non-medicated is personal choice, though we prefer non-medicated. Have your feed on hand and ready to go before your chicks arrive. Along with the feed, you'll need a feeder or two, depending on how many chicks you have.



I can't stand having chicks in my house. There, I said it. I said what everyone wants to say but won't say.

What You'll Need for Your Outdoor Chicken Brooder

There are a few things you'll need when setting up your outdoor chicken brooder. Some are obvious things, and then there are not so obvious things.

HEAT LAMP AND LAMP HOOK

While there's some debate on whether or not you should use a heat lamp outside, we use a heat lamp in our chick brooders because we have chicks in an outdoor chicken brooder with temperatures as low as 20 degrees F at night. Along with the heat lamp, you'll need a lamp hook. This is the only way to make it safe. Clamping your heat lamp on isn't safe in any situation. You'll need to secure the lamp onto the hook (by hanging it) rather than clamping the heat lamp inside of the brooder. We also prefer to use large livestock heat lamps with large cages around them rather than the common heat lamps you get from your farm store.

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Managing Your Chicken Brooder

Now that you have your brooder set up, it's time to put the chicks into the brooder and begin the management process. With a properly set up outdoor brooder, your chicks can go outside as soon as they arrive. However, if I am hatching chicks, I typically keep the chicks inside close to me for about four days and then take them out to the brooder.

One of the most important things to remember is the weather. If it's extremely cold, check on your chicks more often. But if it's summertime, you may need to turn the heat lamp completely off during the day.


Once your chicks have been transferred to the brooder, you'll want to check on them several times a day the first two days to make sure they are warm enough and acclimating nicely. If they

aren't warm enough, they will huddle together constantly. If they are too hot, they will stay away from the heat lamp or they will be panting with wings spread out. Adjust your heat lamp accordingly.

One of the most important things to remember with an outdoor brooder is the weather. If it's extremely cold, you'll need to check on your chicks more often. But if it's summertime (which is really the best time for outdoor

brooder chicks), you'll often find that you need to turn the heat lamp completely off during the day.

No matter what brooder you decide to utilize, you'll find yourself wondering why you didn't create an outdoor brooder sooner! The ease of transition from coop to flock is astounding, especially if you raise your new babies beside your existing flock. And the cleanup is a breeze!

Put this on your chicken to-do list for the next time you purchase or hatch chicks. You won't regret it! 

AMY FEWELL is the head chicken wrangler and homesteader at The Fewell Homestead. Along with her family, she resides in the foothills of the Blue Ridge mountains in Virginia. She is the founder of the Homesteaders of America conference and organization, and the author of the books, *The Homesteader's Herbal Companion* and *The Homesteader's Natural Chicken Keeping Handbook*. thefewellhomestead.com

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Why Breaking a Broody Hen is Often Necessary

BY ANN ACCETTA-SCOTT



This is the hard truth. As stewards to our livestock and property, there are times when we must step in and say, enough is enough.

I HAVE RAISED POULTRY FOR THE PAST SIX YEARS, and I've had my share of broody hens. What I've learned is this: people love seeing photos of mother hens and chicks. A fluffy chick, duckling, or turkey poult with its mother melts the human heart.

The ability to raise mother hens and chicks together is a process which we truly appreciate on our homestead. I also love sharing this experience with others. However, the experience isn't always perfect, making it necessary to prevent a broody hen from hatching out eggs. Shocking, I know.

I often hear from individuals that it's unfair to prevent a broody hen from hatching eggs. I am told more times than not, "Just give your broody hen eggs." I shake my head and remind myself that these individuals may not realize why it is necessary to break a broody hen. And I can promise you, it's not because we are uncompassionate to the hormonal hen's needs. Oh, no, not at all!

So, before you think I'm cruel, I will share why it is often necessary to not allow a hen to remain broody.

What Causes a Hen to Become Broody?

Hormones. The increase of daylight encourages the hen's body to release a hormone from the pituitary gland known as prolactin. This increase causes her to become fixated on hatching eggs. And sometimes this fixation becomes quite extreme, requiring the poultry keeper to intervene.

Why Break Broody Hens?

This is the hard truth. As stewards to our livestock and property, there are times when we must step in and say, enough is enough.

The Health of a Hen

A broody hen leaves the nest once a day to drink, eat, dirt bathe, and drop waste. The rest of the time she is on the nest, which can be an issue when the temperature is extremely high. The heat can cause a nesting hen to overheat, become dehydrated, and even die.

Extreme cases of broodiness may result in deterioration of the hen's

health. A hardcore broody may not leave the nest for days on end, whereas some may not leave at all, starving themselves or dying due to dehydration.

A stubborn broody hen will often defecate in the nesting box. The waste draws flies, which in turn can lead to flystrike on a nesting hen.

Unfertilized Eggs

Let's be realistic. If there is no rooster available to fertilize eggs, there is no reason to allow a hen to remain broody. The hen will monopolize a nesting box for 21 days, many times longer. The process of allowing her to "sit it out" is unnecessary, especially during the warmest part of summer.

City Zoning Ordinances

Offering fertilized hatching eggs may seem like a kind act to the broody hen, but many cities have strict laws regarding how many poultry can be kept on the property. Hatching chicks could exceed allocation based on city livestock ordinances.

Also, rehoming poultry is not always easy, especially if there are cockerels in the mix. Prior to allowing a broody hen to hatch eggs, make sure to have a solid plan in place to rehome chicks.

Aggressive, Inattentive Mother Hens

Speaking from experience, not all hens make good mothers. They may make excellent broodies, but when it comes to raising chicks, their behavior often turns aggressive. Aggressive mother hens tend to peck and even abandon chicks, resulting in injury or death.

Inattentive mother hens are a major cause of death to chicks, crushing them due to stepping or laying on them.

Broodiness is Contagious

Though not scientifically proven, poultry keepers often claim broodiness tends to be contagious.

Egg production is nonexistent during the period which a hen is broody. Allowing a hen,

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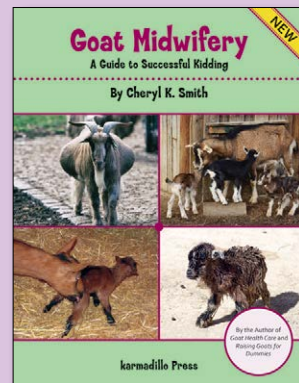


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A hardcore broody may not leave the nest for days on end, whereas some may not leave at all, starving themselves or dying due to dehydration.

especially in a small flock, to remain broody reduces the amount of eggs. Imagine if two or three flock members become broody at the same time.

The Best Broody Breeds to Avoid

Hatching chicks should be intentional. My preference, as a homesteader, is to keep breeds which are prone broodiness in order to have them hatch eggs and

then care for chicks. I specifically selected duck, turkey, geese, and chicken breeds to perform this task. These specific breeds generally become broody at least once between spring through fall.

If you're not prepared to deal with a broody hen, avoid adding the following breeds to your property. And remember, all poultry breeds can become broody, but those on this list are highly susceptible.

Chicken Breeds

Our Java, Orpington, French Black Copper Marans, and Speckled Sussex are extreme broody hens, which means I must watch them closely while they sit on a clutch.

- Silkies
- Orpingtons
- Speckled Sussex
- Javas
- Cochins
- Brahmas

Duck Breeds

We have had Welsh Harlequin, Cayuga, and Khaki Campbells

become dedicated broodies throughout the summer months. The Welsh Harlequin breed tends to be quite extreme, refusing to leave the nest for days at a time. The Muscovy breed is highly prone to broodiness and will often set on clutches two to three times a year.

- Ancona
- Cayuga
- Domestic Mallard
- Khaki Campbell
- Muscovy
- Welsh Harlequin

Turkey Breeds

Heritage turkey hens, once mature, often go broody at least once between spring through fall. Out of all our poultry breeds, turkey hens appear to be the most intense broody of them all. Their determination to hatch eggs often results in potential health risks due to neglecting their needs. Turkeys should be watched closely throughout the time a hen sits on eggs.

Geese Breeds

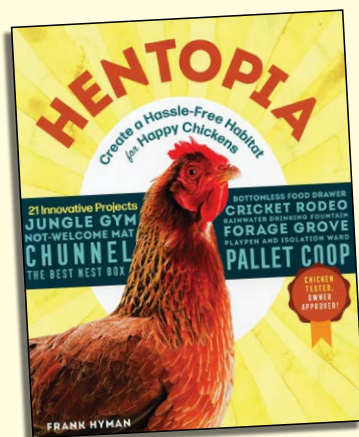
The Chinese goose tends to be more broody than other goose breeds.

As you can see, it's not all peaches and cream when it comes to allowing a hen to "just hatch eggs." Poultry keepers must be aware of our birds' behaviors, as it may save the life of the hen and her chicks. ©

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ANN ACCETTA-SCOTT homesteads on two acres in Washington State, raising poultry, goats, and rabbits. She is an educator and encourager of all who are seeking to live a more sustainable lifestyle. Ann is also the face behind the website *A Farm Girl in the Making* and author of *The Farm Girl's Guide to Preserving the Harvest*.
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How Long do Chicks Need a Heat Lamp?

Because they don't have feathers to self-regulate temperature, newly hatched chicks depend on mothers to keep them warm. Darting beneath wings when they're cold, and coming out to eat and drink, babies thrive on the mother-to-chick relationship.

Brooder chicks must have appropriate heat sources, and humans must closely monitor them with thermometers and good judgment. Install a thermometer within the brooder to monitor temperature. But determining whether chicks are warm enough (or too warm) isn't difficult. A well-set-up brooder has warmer and cooler areas, where chicks sleep in the beam, but water sits at edges where it won't evaporate so fast. If chicks huddle together in the beam, lower the lamp closer to the brooder. If they move away from the beam to sleep, raise it up.

And if you see chicks panting, that means they're overheated and need cooler temperatures quickly.

The ideal temperature for chicks, seven days old or younger, is 95 de-

grees. Week two is 90, week three is 85. Each week declines by five degrees until chicks are ready to live outside.

CHICKEN AGE	TEMPERATURE	CONSIDERATIONS
0-7 Days	95°F	Now is not the time to let babies stay outside the brooder more than a couple minutes.
Week 2	90°F	Babies start flying very early! Be sure the heat lamp is secure and can't be reached.
Week 3	85°F	Chicks can make short trips outside, if the weather is nice and warm.
Week 4	80°F	Let chicks enjoy more time outside, but keep a close eye on them.
Week 5	75°F	Is your house 75F? Turn off the heat lamp.
Week 6	70°F	Start acclimating the chickens, letting them spend all day outside unless the weather is cold and rainy.
After 6 Weeks	Ready for outside!	Fully feathered chicks can endure 30F and lower. Acclimate them before putting outside for good. Be sure coops are draft-free.

PIGS

THE PERMACULTURE PAL

*How Pigs Can
Work for You in a
Permaculture System*

Duroc and KuneKune weaners clearing the orchard of windfalls and weeds.



Piglets dam-raised in woodland.

BY TAMSIN COOPER

Permaculture is a holistic method of observing the ecosystem and farming in harmony with nature's processes. It aims to protect the environment while reducing labor and improving the quality of harvest. Various methods and technologies are employed within its philosophy, including no-dig gardening, companion planting, and pasture rotation.

Amy and James Russell have embraced the restoration of biodiversity on their homestead. The 50-acre farm in northwest France consists of a mixture of woodland and pastures. The Russells integrate vegetable, fruit, and perennial cultivation while alternating crops with pig and poultry grazing. Pastures and woodlands are sustainably managed by rotating animals frequently through a string of small paddocks. Motivated to grow healthy, sustainable food, and having read about the plight of livestock in industrial farming, they chose to prioritize high welfare standards, natural methods, and the preservation of natural resources, including wildlife habitats. They sell their products on-site and at markets to customers seeking top-quality organic products.

The Value of Heritage Breeds

The Russells find their pigs to be invaluable helpers for clearing the land of unwanted plants and leftover produce, and for preparing new growing beds. Traditional breed pigs live free range on a varied

diet, producing unique and flavorsome products for which the couple has built up a loyal customer base.

Inspired by permaculture innovators, such as Sepp Holzer (an Austrian farmer in the Alps), the Russells have found that the natural behavior of pigs enables them to farm the land with less effort. Natural pig foraging behavior has beneficial effects to the land and ecosystem while keeping the animals happy and healthy.

Sepp Holzer keeps old breed hogs on his mountain farm who live outdoors all year round. He finds old breeds hardier and more in touch with their instincts, which make them useful workers and productive mothers. Modern breeds have sadly lost the full expression of some of these survival traits. The pigs stay in family groups and are not overstocked. Holzer makes sure that each paddock provides all they need to be comfortable, healthy, and safe: shelter, water, wallow, and forage. They are regularly moved on so that the pasture is not overgrazed. In this way, they need minimal husbandry, avoid parasites and stress, and stay contented and healthy.

Jobs for Hogs

Each paddock presents a new job to do. This may be digging up an overgrowth of weeds: feed can be scattered among the plants to encourage the pigs to concentrate on those patches. It could be turning over the earth to make way for a new crop: their digging loosens compacted soil and aerates it. Pigs can also help keep down grass and weeds in orchards, as they do not damage trees, and they consume windfalls, thus avoiding the proliferation of mold. As omnivores, pigs eat bugs and grubs, so are useful for pest control. Once they are trained to eat snails (by mixing snails in feed), pigs will readily seek them out. In conservation areas, pigs can



A sow appreciates the seclusion of a rewilded ditch.



Amy Russell serving customers in her mobile outdoor farm shop.

improve plant diversity by breaking up overgrown areas and allowing pioneer species to germinate.

After they leave each paddock, Holzer sows a mixture of crops, avoiding monocultures at all times. After these are harvested, some are left in the soil for the pigs to root up when they return. Jerusalem artichokes do very well in this system, as digging stimulates their spread, and pigs relish them.

Preparing a Crop Bed

The Russells have adopted this model for their pigs. They regularly create new beds for mixed cultures of annuals, as previous beds are often given over to cultivating perennial vegetables and fruit bushes.

They plan ahead for next year's plot. In the spring they fence off the plot with three low wires of electric fencing, including any areas within the plot they do not want the pigs to dislodge (e.g., fruit canes, perennials). The pigs grub up grass, roots, and other plants, while they loosen the topsoil. They enjoy healthy, natural activity and a varied diet, while the soil benefits from their manure. All paddocks need a water source and shelter, and a wallow in the hotter months. You can choose the best site for their shelter by first observing where the pigs normally rest. Alternatively, place their hut where you plan to rot compost: although pigs keep their bed clean, they will trample bedding into the soil, forming an ideal base of organic matter.

Once the work is done, the pigs move onto a new plot and chickens move in to scratch and spread their dung, consuming parasite eggs and larvae. The Russells then plant a cover crop over summer, then mulch it over winter, for readiness the next spring.

Natural Motherhood

For efficient natural living, piglets need to learn foraging and survival skills from their mother. When farrowing, sows move to the woods, where they can



Woodland shelter.

build nests in natural comfort. Log cabins are available, but sows often choose a thicket and bring in grass and plant matter as bedding.

The Russells' hardy Berkshire and Mangalitsa sows have been marvelous mothers in this system. Piglets are dam-raised in the woods,

then moved on to work pastures and orchards as they mature.

Adapting to Difficult Times

Both breeds develop a tender, flavorful, marbled meat over time. Although output is not prolific, it is high quality. Despite the popularity of their pork, customers demanding leaner meat led to the purchase of a commercially bred Belgian boar of Piétran stock. Although an endearing fellow, he took time to adapt to outdoor life and needed considerable training to become self-reliant. Then the threat of African swine fever led to changes. New biosecurity requirements made breeding pigs financially unfeasible for a small producer. In response, the farm is now limited to buying and raising weaners to supply their customers. Duroc and Kunekune weaners are doing a great job of grazing the orchards and working the soil. While they are maintaining their market, the return on their investment will be slower. Fortunately, farm cottage rentals allow the family to keep afloat during hard times. Farm stays include an educational nature/farm walk open to residents and customers, allowing safe and healthy outdoor activity in an era of social distancing. ©

Sources:

- Amy and James Russell, *De La Terre, Mayenne, France* | delaterrefrance.com
- Holzer, S. 2004. *Sepp Holzer's Permaculture: A Practical Guide for Farmers, Smallholders & Gardeners*. Permanent Publications | seppholzer.info

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TAMSIN COOPER keeps goats and chickens on her smallholding in France, where she aspires to live as sustainably as possible. She follows the latest research on farm animal behavior and has mentored on animal welfare courses.

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BY HEATHER SMITH THOMAS

WEANING TIME HAS TRADITIONALLY BEEN TRAUMATIC for calves and mama cows and also the people weaning the calves. In the past 30 years, however, many stockmen have found less stressful ways to wean than sticking the calves in a corral and taking the cows away.

Weaning is physically and emotionally stressful for a calf, and the emotional trauma is just as hard on him (maybe harder!) as suddenly being deprived of milk. A big calf doesn't need milk anymore, but he still feels dependent on mama, and insecure without her. When taken away from Mom and put into a weaning pen, calves pace the fence and bawl, running frantically back and forth. If corrals are dry, this kicks up dust that irritates the respiratory tract and opens the way for infections. The calf is very susceptible to respiratory problems at this time because stress hinders the proper functioning of the

immune system. It's much better to wean calves in a grassy pasture, if possible, rather than in a corral.

Green pasture is a more natural environment than a corral, and there's no dust to irritate the respiratory system. Calves do better on good green grass than when suddenly taken off milk and fed hay (and maybe expected to eat grain — which is a foreign type of food). They are accustomed to eating grass. They don't go off feed as much as when they have to eat something new and different. If the grass is drying out, pasture can be supplemented with a little good-quality alfalfa hay.

About 30 years ago, some ranchers started experimenting with fenceline weaning, putting cows and calves in pastures next to one another. If calves and cows can be adjacent for a few days during the weaning process, they are not as stressed. Even though they cannot nurse, and may bawl, the calves have the security of their mothers,

nose to nose at the fence. By the third day, the pairs are not so desperate to get back together.

This works well if fencing is secure enough to keep the animals from going through it. A pole fence, or netting that's tall enough that the cows can't reach over to mash it down, or several strands of electric wire, will generally work. Just about any fence, fortified with an electric wire, will keep calves on their own side. Even if cattle are not accustomed to a hot wire, if you put the wire on the calves' side of the fence, they won't go through it. Situate the hot wire about one foot away from the fence (and at a height the calves can readily check it out) so they encounter it first — and then they won't press the fence again.

To successfully fence-line wean on pasture, it helps if you move the pairs into the pasture a day or two ahead of weaning so the calves will become familiar with that pasture. Then when you separate the pairs, you can keep the calves in a familiar and take the cows to an adjacent pasture.

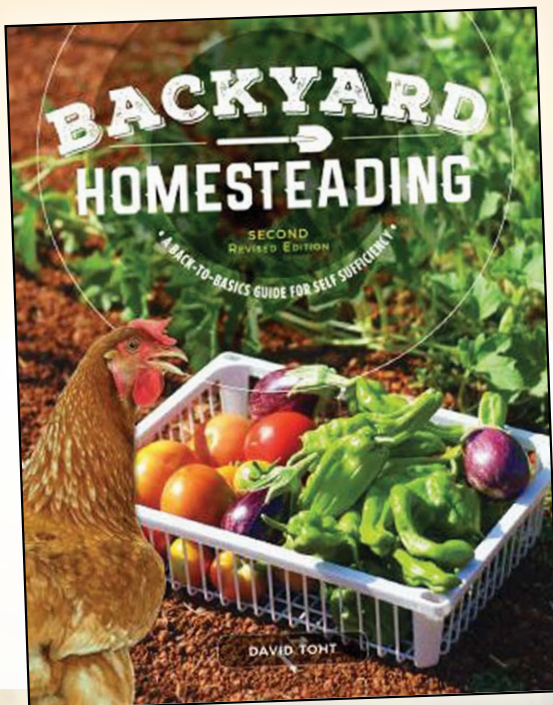
The pasture where you'll leave the calves should have good grass. It might be new lush regrowth in a hayfield that was harvested earlier in the summer or a pasture that was grazed early and allowed to regrow so the grass is green and high in protein. Make sure you have a pasture that's high quality for calves. Plan ahead and manage that pasture so it has

the highest quality and the best forage it can possibly have at that particular time. You want it at the right stage of growth to be abundant and highly palatable and nutritious.

If you put the pairs in that pasture a day or two ahead of when you

take the cows away, the calves will locate the water sources and perimeter fences while still with their mothers, and learn the boundaries. The primary water source should be near the fence and close to the adjacent pasture where their mothers will be after the separation. The dividing fence should be safe, without corners where the cows or calves might bunch up.

On weaning day, let the pairs keep grazing awhile in the morning so they will be relatively full and content.



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On weaning day, let the pairs keep grazing awhile in the morning so they will be relatively full and content. Mid-day you can quietly bring them to wherever you plan to sort. You might leave them there awhile to mother up and nurse one more time. Then when you come back to sort the cows off, they are relaxed and just loafing around, and not upset.

It's ideal if your sorting corral is situated next to the adjacent pastures and you can quietly sort the cows out one gate into their pasture and let the calves out another gate into theirs. Most cows will be ready to head out to their new pasture when you open their gate because they know they are going to fresh grass. If you take your time, the herd will sort without any effort on your part. Calves are easy to hold back because they are a little timider, and the cows will walk on past you to their gate. After the first cows have left the corral you can let a few calves out the other gate, then let out a few more cows, and so on.

If cattle trust you, it's easy to sort them. If you haven't sorted the calves off the cows this way before, you can give them a little practice when you are moving the herd a day or two before — into the pasture where you want to wean. Have someone stand in the gate and take a little extra time to just let the cattle trickle by, and stop them a bit. Then they are prepared to sort easily the next time when you are separating them for weaning.

Cattle are smart, and readily learn what you want them to do. Every time you put them through a gate, it pays to have someone stand there so they have to walk past a person. That way they learn to calmly walk through. They aren't being

chased or harassed. Training them to quietly walk past you to go out a gate makes it easy to count them, check them closely for sickness or lameness, etc. It pays to have them easy to handle.

The easiest and least stressful way to sort cows from calves if you have them all together in a big pen is to let them quietly walk back out through an alley in which you've taken off the bottom fence pole or plank. The calves can pass right under the fence into the adjoining pen, trying to follow their mothers. They can walk a distance with her along their side of the fence. They sort themselves, with no stress at all.

After the calves are in their pasture and the cows are in the adjacent pasture, they may go to the fence to see where mom or baby is, but if grass is good, they spend most of their time grazing. Since the calves went back to the same pasture they came from, they usually aren't bothered very much and it may take a couple of hours before they think they need to look for mom. Eventually, the cows and calves search for one another, but when they meet at the fence, they are not very upset. When they aren't grazing, they may lie down next to each other on opposite sides of the fence.

Some stockmen leave one or two older animals (usually dry cows or a yearling) with the calves to provide reassurance and to be a role model. This can give the more insecure calves an adult to bond with. The pairs on opposite sides of the fence periodically go graze and then come back to the fence to check on one another. After about three days, fewer cows come back to the fence. They know where their calves are but are less concerned about them and their milk is drying up.

The calves begin to realize they don't need their mamas anymore. By the fourth or fifth day, you can move the cows somewhere else if you need to take them to a different pasture. By that time, they are usually eager to go to new pasture and are not worried about their calves anymore, and the calves are fully weaned. ©

HEATHER SMITH THOMAS ranches with her husband near Salmon, Idaho, raising cattle and a few horses. She has a B.A. in English and history. She has raised and trained horses for 50 years, and has been writing freelance articles and books nearly that long, publishing 20 books and more than 9,000 articles for horse and livestock publications. Find Heather online at heathersmiththomas.blogspot.com.



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Rowdy the Buffalo

BY GINA STACK



AFTER DRIVING DOWN THE LONG DRIVEWAY past two large pastures and a small herd of bison, we arrived. We walked through a large expanse of fresh-cut green grass in front of the house and onto a large and sturdy, welcoming porch. We were greeted at the door by Don Solwold of Quarter Master Buffalo.

Don, who is 87, explained that he was working on fence plans as his herd of 17 bison had found a breach earlier that morning and had been grazing in the lawn we had just walked through. They like fresh-cut grass because it is sweeter, and apparently, they don't care much for fences!

Rowdy, the herd bull, now eight years old, used to hang out on the porch while being raised. At two months old, he was mistaken for a statue by a neighbor, but as he stood up, she ran back to her car.

This last winter as the snow deepened and became packed down, Don found Rowdy standing in front of the glass door on the porch looking in. Since his head is almost the size of the door, I'm sure this was a sight to see! Don led the almost 2,000 pound bull to jump off the side of the porch, fearing, since he is front heavy, he would fall trying to navigate going back down the steps. He really trusts Don, a lot.

Rowdy is a very special bison bull since Don is so special to him. The day Rowdy was born, in 2012, Don discovered his mother had born

twins. Knowing bison are only designed to raise one, he suspected there may be an abandoned calf. When investigating, he found a newborn male calf wandering alone. Knowing he needed to bond quickly, he carried him to the pasture fence hoping the calf would make noise causing the herd to come running. But he made no noise. Not wanting the calf to be left alone again, he carried him home to raise. The calf's mother had chosen his sister.

Rowdy bonded with him just in time, as the window for bonding is very short. Don became the adopted parent and did all to take care of little Rowdy; brushing him, feeding him, keeping him clean and free of flies. And of course, lots of companionship which a herd animal needs. When Rowdy was weaned, he continued to accept being brushed, sprayed against flies, and eating special food, as he does to this day.

After chatting with Don and learning this story about Rowdy, the time came for us to go see Rowdy and the herd of 10 cows with their calves. As we went toward the pasture, the herd was very far out. Don went to the shed to get gloves, a brush, and anti-fly spray. He also had a bucket with a mix of special food for Rowdy. He explained that his twin sister had started to be bolder and come up with Rowdy to partake of the food and some spray too. She wasn't as friendly but was learning that her brother was benefiting from all this attention. He also shared that when there are twin bison, the female will be barren, which she is. Her name is Hannah.

Don has been caring for bison since 1974, so going into the pasture was like second nature to him. We were not to go behind the fence and we didn't want to! He and his dog walked toward the herd with his bucket and other things, and after a bit, he came walking back with this huge bison bull, beard

swaying as he walked, trailing along behind him. The rest of the herd trailed at a distance.

As Rowdy came right up to the fence, which was a wow moment, I was nervously watching their tails. Don had said if their tail is up, get outta there! But I only saw occasional swishing at flies.

Since Rowdy doesn't have another bull to spar with, he spars with Don's equipment. He makes sure his truck is tucked away in the shed, but there are a few dents in it from previous encounters. Since he gets "rowdy" with the equipment, his horns are stubby. But his sister Hannah, who was hanging out near Rowdy, looking for a snack, had very sharp horns. This was very intimidating up close.

The other cows with their calves were peeking from behind and we could see the different hair styles and tell them apart. Since Hannah is barren, her coat and hairdo were just beautiful, since she hasn't been stressed by having her own young calves to tend over the years.

Meanwhile, there was Don right next to Rowdy, brushing, spraying, and talking softly as this animal was completely relaxed and enjoying this interaction. He seemed oblivious to us. He was occasionally grazing on the bucket of snack food and itching his face on the fence while taking in the attention. At one point they even put their heads together. I snapped a picture of that, but it doesn't capture watching that in person. He was leaning into Don like a dog longing to be petted and Don was so easy-going and peaceful. Totally the opposite of "rowdy!" This went on for a long while, as my husband and I quietly took pictures and videos while in awe of this interaction between this elderly gentleman, and this absolutely huge and majestic animal. It truly was a blessing to witness something most people won't ever get to see.





Verse 3:7 in the Book of *James* says, "For every kind of beast ... has been tamed by mankind ..." And we were watching this miracle in person.

Afterward, we sat on the comfortable porch and completed our pleasurable visit, having made a new friend with Don. The bison were in the background grazing nearby, some occasionally rolling in the pasture with frolicking calves. We hope to come to visit Don again someday and watch the bison roam and see Rowdy of course! 🐾

GINA STACK is a freelance writer in southwest Wisconsin. She, along with her husband and son, reside on five acres with 22 laying hens (some as old as 10 years!), a large vegetable garden, perennials, and Lily the pug.

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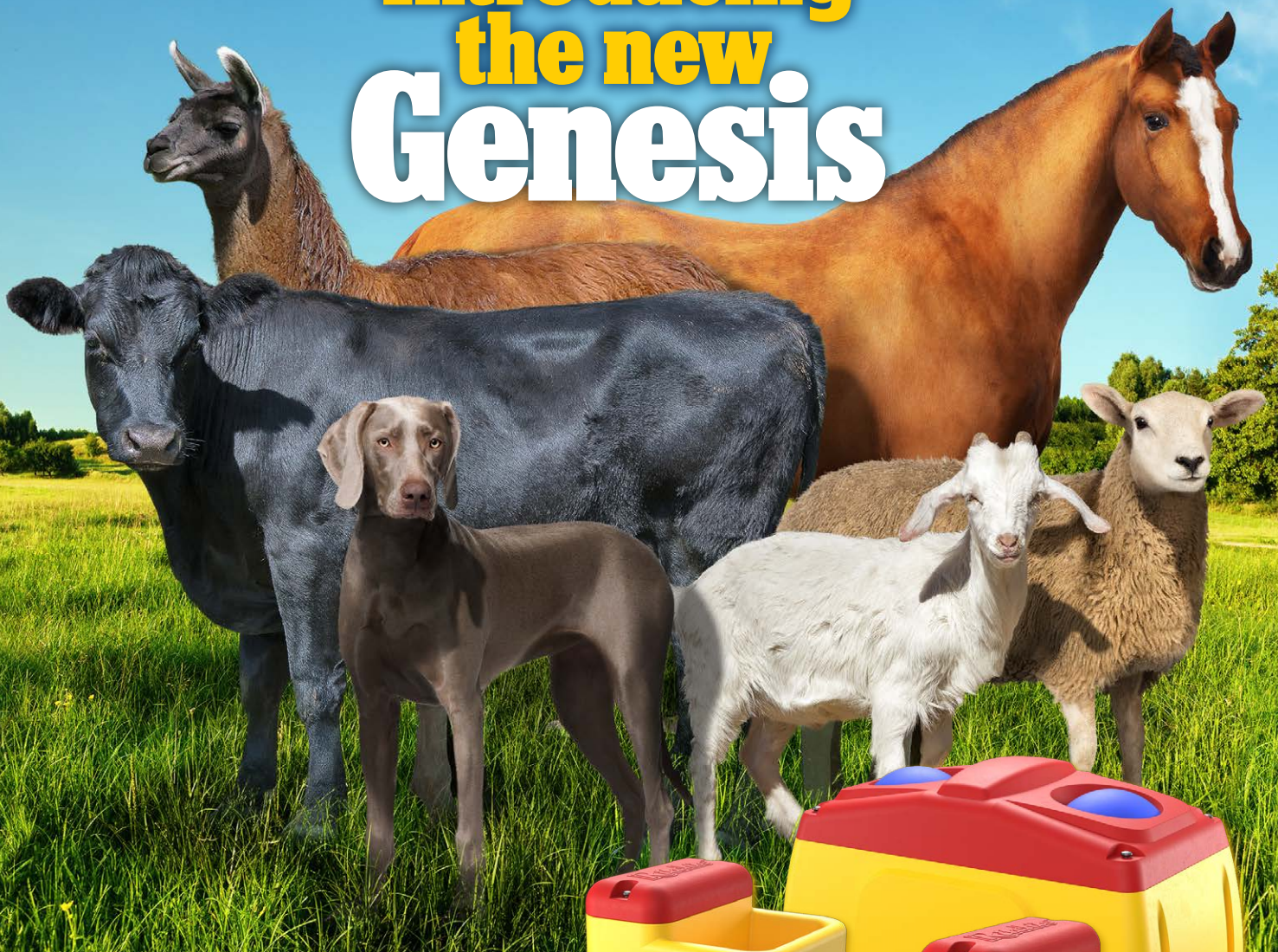
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Artisanal Sheep Cheese from Shepherds Manor Creamery

Part 1 of 2

BY JACQUELINE HARP



A dairy sheep. Photo credit Michael Histon.

at how their uncompromising passion for their animals and their products has resulted in this wonderful sheep dairy operation.

Beginnings

Shepherds Manor Creamery sits on 22 acres in the charming countryside of New Windsor, Maryland, located about an hour-and-a-half from Washington, D.C. The farm name comes from the fact that both Colleen and Michael are the shepherds who care for the flocks, own and operate the creamery, and live in a manor house that was built sometime in the 1800s.

The creamery is a shift in focus for the family, who started with sheep in 4-H with their two children and raised show lambs for many years. Over a decade ago, the Histons were inspired to research the possibility of starting a sheep dairy, and those dreams became a reality.

The research that went into this project was extensive, spanning several years. They did a deep-dive into dairy sheep care, creamery operations, cheesemaking, soap-making, and all the regulations that could impact these elements. The work that went into becoming knowledgeable about their business model before moving forward cannot be under-emphasized.

The entire operation is located on 22 acres and includes the living quarters, the sheep barn, and the creamery. Once the property was purchased, it took a year-and-a-half to get their dairy fully operational, including building a new barn and a new creamery and working through all the regulatory issues. Around the time they began the set-up process, they acquired the dairy herd and were housing them on a different property with non-permanent fencing and housing. The sheep moved to their permanent home in March 2010. The Histons fondly remember March 15, 2011 — the

IN TODAY'S FOOD MARKETPLACE, a major catchphrase is "dairy alternative." In reality, this refers mostly to cow milk as the "dairy" for which people are seeking an alternative. Food intolerances of many kinds are on the rise, and difficulties with digesting cow milk have led people to look for suitable replacements. The list of milk-like substitutes for cow milk is long: goat milk, soy milk, almond milk, cashew milk, oat milk, hemp milk, macadamia nut milk, even camel milk.

Entering into this growing trend is the first and only sheep cheese dairy in Maryland — Shepherds Manor Creamery. What makes this creamery stand out is the award-winning, artisanal product — 100% sheep milk cheese, borne of hard work and integrity, and sourced completely on-farm. For Colleen and Michael Histon, the dedicated husband-and-wife team who own Shepherds Manor Creamery, it's all about the sheep! Well-cared-for and properly fed sheep, paired with superb cheesemaking are the key ingredients in the success of their cheeses. Let's take a look

first day of milking in the milking parlor of their new creamery!

In looking back, one major thing Colleen and Michael would have done differently is they would have waited until the infrastructure was complete before purchasing the sheep. It would have been much easier if they did not have to manage the flock and the building projects at the same time.

The creamery is Colleen's domain and is comprised of the milking parlor, the bulk tank room, the cheesemaking room, the aging room (i.e., the "cheese cave"), and office space. The office space contains a mini-laboratory for milk testing, a shrink-wrap machine, labeler, and other miscellaneous equipment for preparing the cheese for sale.

Animal husbandry is Michael's focus, and it was very helpful to be able to design a barn to best meet the needs of the flock. The sheep barn has a slanted roof that faces the wind and allows for natural airflow. There is no need for fans, and this minimizes energy use. He notes that it is important to avoid moisture build-up in the barn, for the health of the sheep. The barn is easily cleaned using machines, versus having to muck it out with shovels. There is the potential for installing solar power on the roof of the barn to power the creamery.

Milking Season

The Histons keep careful records on their farm. Ewe health and milk production are their top two data points. Their ideal milk production goal for each ewe is 1,000 pounds of milk per season. Being a seasonal operation allows them to pause from production to analyze the past season. The data helps them make decisions about culling, feed adjustments, and breeding. For example, after spring lambing, ewes with flaws such as small udders or extra teats are culled.

For the 2019 milking season, one hundred ewes will be milked. Milk

Butterfat is key to cheesemaking. The higher the fat content, the more cheese that is produced with less waste.



Sheep on pasture. Photo credit Michael Histon.

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production is sparse at first, making it hard to get solid statistics, and it takes time to bring the flock to 100% production. At the height of the lactation season, when all the ewes are finally in production, the ewes are milked twice a day and will produce anywhere between three and a half to four pounds of milk at each milking. By the end of the lactation season, the ewes are milked once a day and production drops to about a pound.

Colleen and Michael: “There are others in the industry who do things differently, such as giving drugs to their sheep to improve production. We don’t do that, because we want our ewes to speak for themselves when it comes to output. It is our firm belief that if you run an animal too hard, it is going to cut their lifespan short. That is not what we want.”

Mixed Breed Dairy Ewes

The farm’s original starter flock consisted of purebred East Friesians. Now, however, 130 East Friesian-Lacaune mixed breed ewes graze the pastures at Shepherds Manor Creamery.

The East Friesians produce a high volume of milk. The Lacaune produce milk with a high percentage of butterfat, but nowhere near the volume of East Friesians. Butterfat is key to cheesemaking. The higher the fat content, the more cheese that is produced with less waste. The Histons reasoned that crossing the two breeds might bring about a blend of the desired traits: high butterfat and increased volume. The resulting crossbreeds have met these expectations. Having a purebred dairy flock just for its own sake has never been a goal for the creamery; rather, the goal is having healthy, well-treated ewes who have above-average milk production and longevity.

Food for the Dairy Ewe

The learning curve for feeding dairy ewes has been huge.

Although the Histons have experience with non-dairy sheep, the nutritional demands for dairy sheep are vastly different. In order to achieve top yields of milk per head, dairy sheep require huge amounts of protein. Lactating ewes need about 27% protein, which is achieved by feeding the ewes alfalfa hay and supplementary grains. Alfalfa hay is a critical element of the feeding program.

Grains are used to entice the ewes into the milking parlor, as well as to provide the balance of the ewe’s nutritional needs. They aim for a mixture of non-genetically-modified (non-GMO) grains comprised of corn, barley, molasses, brewer’s grain, soybean, soybean meal, and premade sheep mineral. Minerals formulated specifically for dairy sheep have only recently become available and are a welcome addition. People who buy artisanal sheep cheese demand non-GMO feed. Michael feels fortunate to be able to source these non-GMO grains from the local Amish communities.

Finding the right mill to process the grains presents several challenges unique to sheep dairying. Price and availability are, of course, obvious factors. The non-

obvious but overarching concern is the regulatory requirement that the feed be completely free of antibiotics. How this comes into play can be illustrated by their choosing to use a costlier, smaller mill that is antibiotic-free over the less-expensive, larger mills in the area that are not antibiotic-free. The residue can find its way into the Histons’ grain mix, and then into the ewes’ milk. Colleen tests the milk for antibiotic contamination on a daily basis. The test is extremely sensitive, detecting the slightest amount of antibiotics. Even though the potential antibiotic residue from another farm’s custom mix is essentially a false positive, if found in the milk, the entire day’s batch must be discarded, per the rules.

With supplementary hay and grains providing the bulk of the nutritional needs for the flock all year round, the sheep do not have to rely on pasture. The sheep, however, are by no means confined to a barn or feedlot. The farm boasts 12 acres of well-maintained, fenced pastures, and the sheep are allowed to frolic and graze to their hearts’ content. Customers want to know that the sheep have free access to quality pastures. The Histons are happy to provide the ewes with just that, which makes for happy sheep!

Guard Llama

For the past decade, a gelded llama named Hunter has faithfully served as the livestock guardian. What they like most about the guard llama is that he does everything with the sheep, he eats the same feed, and simply blends in. He has successfully handled attacks from raccoons, lone coyotes, and feral cats.

Colleen discovered that Hunter’s soft, silky wool is quite marketable. Hunter’s fleece has been mill-processed into yarn and has garnered quite a few fans at the farmers markets. The proceeds from Hunter’s yarn chips in towards his care.



Hunter the guard llama. Photo credit Michael Histon.



Left: Ewe and lamb. Photo credit Michael Histon.
Above: Dairy lamb. Photo credit Michael Histon.

Lambing Season

The Histons plan well in advance to make sure that the bulk of the lambing and shearing starts in the middle of January and ends in early March. They have tried for earlier lambing, but the hot climate renders the rams temporarily sterile if they try too early in the fall. Two to three rams are maintained on-farm, to keep genetics fresh, while providing adequate back-up.

Bottle lambs are a rare occurrence, but Michael and Colleen are ready to care for them should the need arise. If a mother ewe loses a lamb, Michael will hand-milk that ewe until the parlor is open, where the ewes are milked by machine.

The lambs stay with their mothers until they are weaned at 30 days and weigh between 40 to 75 pounds. Any lambs not kept as replacement stock are sent to a local auction house. Interestingly, for the past two lambing seasons, they sold their extra lambs to the University of Maryland's Western Maryland Research & Education Center, headed by Susan Schoenian, Sheep and Goat Specialist, and author of *Sheep 101* and *Sheep 201*.


Farm Tours

They offer farm tours by appointment, for a per-person fee, including during lambing season. A

typical visit is 20 to 30 minutes long and starts by giving people a pair of disposable booties for biosecurity. The tour starts in the dairy building to avoid cross-contamination of the cheesemaking area from the live animals. The Histons explain the cheesemaking process, room by room, and answer all questions. Then the group spends time with the ewes; people always treasure this experience. The tour ends with samples of all the cheeses. People often buy cheeses to take home.

Not only do these tours provide a good boost to farm income, but they also contribute to the reputation of the farm as well as serve an educational purpose. While the internet provides a lot of content on cheesemaking in general, nothing compares to actually seeing and experiencing artisanal sheep cheese making firsthand. The impression made is substantial and lasting. The typical person touring the farm is not a typical person when it comes to food choices. More often than not, they are serious "foodies," who are extremely knowledgeable about food. Meeting people who care so much about food and where it comes from, is very encouraging to the Histons, as well.

The Histons also offer a paid internship program on their farm, but they do not provide


housing. The interns learn the ins and outs of the milking parlor. Interns can also help out at the farmers market. If they show a high level of interest and initiative, they can work directly with Colleen in milk handling. 

shepherdsmanorcreamery.com

Be sure not to miss Part 2 of Shepherds Manor Creamery in the May/June 2021 issue.

JACQUELINE HARP is a fiber artist and certified Master Sorter of Wool Fibers through the State Univ. of N.Y. (Cobleskill) Sorter-Grader-Classifier (SGC) Program.

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HOMEMADE KALE CHIPS RECIPE

Baked and Dehydrated

BY ANN ACCETTA-SCOTT



SPRING HAS NOT SPRUNG UNTIL THERE ARE LEAFY GREENS to harvest from the garden. Kale, chard, spinach, and mustard greens are a delight during the cool spring months.

Add leafy greens to soups of all types. A simple sauté with freshly minced garlic and cracked peppercorns is quite tasty. Young, tender greens make for an amazing salad. Slice the leaves and add to quiches and frittatas for a filling breakfast item. However, nothing beats homemade kale chips.

Eat Your Greens

Kale is one of easiest foods to grow. Aside from planting it in the garden, many plant it in flower beds mixed with flowering perennials. Planting kale in this manner frees up space in the garden for other delicious springtime foods.

Kale is also very low in calories, yet has considerable substance. Allowing you to become full by consuming

Aside from kale being easy to grow, it is one of the healthiest food items around.

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4. Helps to lower cholesterol
5. Best source of vitamin K
6. High in beta-carotene
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8. Contains high amounts of lutein and zeaxanthin — two antioxidants which work to maintain good eye health.

it. In addition to this, cruciferous vegetables, such as kale, can significantly lower the risk of several cancers.

Tools for Making Homemade Kale Chips

Make homemade kale chips using a dehydrator or an oven. A salad spinner is also a great kitchen tool to use for this project.

A dehydrator, such as one with a rear-facing fan, creates perfect dehydrated kale chips. However, the process can take up to five hours. Using a dehydrator ensures that the leaves are completely dried. This is important for storing purposes. Also, check if your dehydrator allows for a raw food, or living food, option. This dehydrator guarantees the nutrients found in the leaves remain in the food item, while maintaining a delightful crunch.

Aside from a dehydrator, a conventional oven is a great tool to use. Careful though: you will not want to walk away when you're making homemade kale chips in this manner. From start to finish, baked kale chips take roughly 20 to 25 minutes to complete.

A salad spinner is a resourceful kitchen tool to have on hand. Wash the kale well prior to making homemade kale chips. Once washed, spin the leaves in a salad spinner to remove excess water.

Flavor Combinations

There is no right or wrong choice when selecting flavor combinations for the perfect homemade kale chips. The benefit of growing kale is allowing for multiple taste-testings to find the best combination that your family will enjoy.

SPICY COMBINATIONS

- Ground sriracha pepper and garlic powder
- Select from the following ground peppers — cayenne, chili powder, smoked paprika, or gochugaru



SEA SALT COMBINATIONS

- Fine sea salt and lemon pepper
- Freshly cracked pink sea salt and the zest of lemon
- Fine sea salt and cracked peppercorns

CHEESY FLAVOR

- Nutritional yeast
- Freshly grated Parmesan at the end of the drying cycle

The final ingredient is extra-virgin olive oil. The oil helps to keep the spices on the leaves during the drying process while creating crispy kale chips.

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KALE CHIPS RECIPE

Feel free to make adjustments to the recipe according to how your family will enjoy consuming homemade kale chips.



INGREDIENTS

- 1 large bunch of kale, any variety
- 3 teaspoons extra-virgin olive oil
- ¾ teaspoon salt
- seasoning mixture of choice, add as much as desired

DIRECTIONS

- Gather the ingredients.
- Prepare the kale, strip the leaves away from the stalks. Remove any tough midribs.
- Wash the kale thoroughly. Using a salad spinner, remove excess water. Or place the leaves in a clean dish towel, pressing gently to remove water.
- Tear the leaves into slightly larger chip-size pieces.
- Place the kale, olive oil, and seasoning into a large bowl. Gently massage the leaves with the oil and seasoning.
- Spread the leaves evenly onto the dehydrator's drying racks or a baking sheet.

NOTE: place a sheet of parchment paper onto the baking sheet prior to adding the oiled kale leaves.

Dehydrated Kale Chips

The average drying temperature and time is 135 degrees F for one to two hours. However, make sure to check the dehydrator's manual prior to starting to confirm the appropriate temperature and drying time.

Raw food drying requires a lower temperature and longer drying time. Remember, not all dehydrators have the raw food option; refer to the dehydrator's manual to confirm if this option is available. Set the temperature to 108 degrees F, allowing the kale to dry for three to four hours.

Oven-Baked Kale Chips

There are two methods available for making kale chips in the oven. Regardless of the method, the process must be watched carefully to prevent the leaves from scorching.

Slow and Low

Because of how quickly the leaves can become scorched due to high heat, it is best to make this kale chips recipe slow and low.

1. Set the temperature of the oven to the lowest heat setting.
2. Next, evenly place the seasoned leaves onto the baking sheet lined with parchment paper.
3. Slow cook the leaves for 40 to 90 minutes, making sure to check the leaves frequently. The process is complete once the leaves are crispy and crunchy.

The Fast Route

1. Set oven temperature to 350 degrees F.
2. Evenly place the seasoned leaves onto the lined baking sheet.
3. Bake the leaves for 10 to 15 minutes. Watch carefully to ensure the leaves do not char.

Storing Homemade Kale Chips

Store uneaten chips in an airtight container. A large food-safe plastic container lined with a paper towel is efficient. Unfortunately, due to the use of oil, homemade kale chips are unable to be preserved long-term.

To re-crisp softened chips, simply return to the dehydrator or the oven. In the dehydrator, the process will take roughly one to two hours. To re-crisp softened chips in the oven, set the oven temperature to 350 degrees F, reheat the chips for roughly 5 minutes. Make sure the leaves do not char in the process.

In truth, homemade kale chips will not last long enough to be stored. They are that delicious! 🍃

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Make Your Own Shrub Syrups

BY RITA HEIKENFELD

SHRUBS. HAVE YOU HEARD OF THEM? Shrubs are budget-friendly, delicious, fermented vinegar, and fruit-based beverages. Next to kombucha and kefir, shrubs are gaining in popularity. If you want a healthful drink that's as beautiful to look at as it is good to drink, then shrubs are for you!

The fun thing about shrubs is that they are easily made at home for a fraction of the store price. The best-flavored shrubs start with fruit that's dead ripe. So don't toss fruits that are a bit past their prime onto the compost pile. Repurpose them into shrub fruit syrups.

History of Shrubs

The word shrub comes from the Arabic *sharbah*, meaning *drink*. Drinks made with vinegars date back to ancient times.

During the long voyage to America, shrubs were included. Why? The vitamin C content from the fruit prevented scurvy and the vinegar, a fermented liquid, was good for the digestive system.

When prohibition was at its height, shrubs became popular substitutes for alcoholic beverages.

With the focus today on healthy drinks, shrubs are becoming mainstream.

Shrub Basics

Simply stated, shrubs are sweetened, fresh-fruit-flavored vinegars. The acid in vinegar preserves the drink, so shrubs can be kept for months refrigerated.

Fruit: Most fruits work well; the riper, the better. Fruit doesn't have to be perfect. Remove any bad spots.

- Start with a simple one-fruit shrub, then experiment with more fruits, spices, etc.
- Peel, chop, or crush fruit a bit to hasten infusion.
- I've made blueberry and strawberry shrubs. Melon, peach, pineapple, citrus, and apple are excellent — you get the picture!

Vinegar: Regardless of the kind you use, the vinegar should have at least 5% acidity.

- White wine vinegar makes for a smooth-flavored, beautiful shrub.
- Distilled white vinegar gives a clear, sharp flavor.
- Apple cider vinegar creates a mellow flavor.
- Rice vinegar? Yes, that works too.
- How about a splash of balsamic added to any of the above? Especially nice with berry shrubs.

Sugar: I use granulated, but raw, brown sugar, or honey works.

OTHER WAYS TO USE SHRUBS:

Cocktail Mixers
Salad Dressing
Over Ice Cream

MASTER FRUIT SHRUB SYRUP RECIPE

INGREDIENTS

Recipe can be doubled, tripled, etc.

- 2 heaping cups fruit; peeled, chopped, or crushed a bit if necessary
- 2 cups vinegar
- 1 to 2 cups sugar or to taste

INSTRUCTIONS

- Sterilize glass jar.
- Heat vinegar in pan to a simmer. You'll see little bubbles around the edges. Don't boil.
- Pour vinegar over fruit in jar, leaving a bit of space. Put lid on.
- Cool, then place in a cool, dark place or refrigerator. I put mine in the refrigerator. Let infuse at least two days or as long as you want (a month or more is okay)

until desired flavor is reached.

- Strain fruit for a sparkling-looking shrub syrup, or leave in and purée for a thicker syrup.
- Place in pan, add sugar, and bring just to a boil.
- Cool and pour into sterilized container and cap.
- Store in refrigerator up to six months or more.
- If shrub bubbles, gets slimy, etc. toss it. (That rarely happens.)

SERVE: Mix a few tablespoons syrup into a glass of chilled sparkling or regular water. Taste and add more, if desired.

Shrubs and Switchels: What's the difference?

Shrubs are basically a fermented drink. Switchels, on the other hand, are a simple, refreshing, hydrating drink made of vinegar, water, and a sweetener. In olden times, that

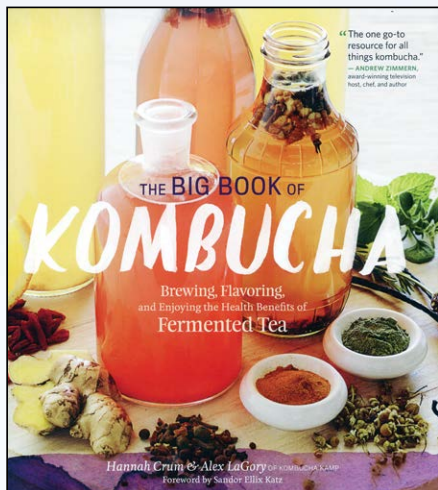
sweetener was often molasses.

Farmers favored switchels since they could be made on the spot and they cooled them down in the heat of summer harvesting. ©

RITA HEIKENFELD comes from a family of wise women in tune with nature. She is a certified modern herbalist, culinary educator, author, and national media personality. Most important, she is a wife, mom, and grandma. Rita lives on a little patch of heaven overlooking the East Fork River in Clermont County, Ohio. She is a former adjunct professor at the University of Cincinnati, where she developed a comprehensive herbal course. abouteating.com column: rita@communitypress.com

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Lemon Sourdough Party Waffles

BY HANNAH MCCLURE



THIS TIME LAST YEAR, WE ALL HAD OUR DAILY ROUTINES AND LIVES ROCKED. With shelter-at-home in place, many businesses temporarily shut down and many everyday goods and food were hard to get a hold of. Limited quantities were placed on high-demand products regardless of family size or needs of each family. Many families started working from home and learning to cook from scratch, or at least using the hidden knowledge to cook more from scratch. I've always loved "from scratch" meals and baked goods. They burst with flavor and are so fresh; they're hard to beat. During spring/summer 2020, I was left looking for things to shake up the meal routines where I grabbed a quick fix to change it up. My staple recipes began to get new life baked or cooked into them — like my go-to sourdough waffle/pancake recipe. I sure hope this spring/summer festive Lemon Sourdough Party Waffle makes any day one to celebrate, regardless of what life throws your way. As the story goes, when life gives you lemons ... make lemony waffles!

LEMON SOURDOUGH PARTY WAFFLES

You will need:

- 1 cup unfed sourdough starter
- 1 large egg
- 2 Tablespoons sugar
- 2 Tablespoons melted butter (slightly cooled)
- ¾ cup whole milk
- ¾ cup buttermilk
- Juice from 1 whole lemon
- 3 teaspoons lemon zest
- 2 teaspoons vanilla
- 1 teaspoon sea salt
- 1 teaspoon baking soda
- 4 teaspoons baking powder
- 2 ½ to 3 cups unbleached all-purpose flour
- 1 ¼ cup carnival or spring-colored sprinkle mix

Get This Party Started

In a large mixing bowl, mix together all wet ingredients and lemon zest until blended. Stop mixer/mixing and add in baking soda, baking powder, sugar, and sea salt. Mix only to blend. Mix in flour, one cup at a time until mixture is the consistency of a thick cake batter. If you add too much flour, add a touch more milk to thin it out.

This batter needs to be a little thicker than a cake batter but not too thick to easily pour. Once batter is mixed, hand stir in 1¼ cup sprinkles of your choice. (The trick to good waffles is to not over mix or stir.)

Heat up your waffle pan/iron to medium high heat. Cook according to your pan/iron directions. We use a waffle iron and each waffle takes about four minutes to get golden brown. Just the way we like them.

Topping ideas: butter and syrup, whipped cream, strawberries, bananas, blueberries, nuts, peanut butter, almond butter, hazelnut spread, more sprinkles, ice cream, cooked chicken (and waffles ... it's a thing!).

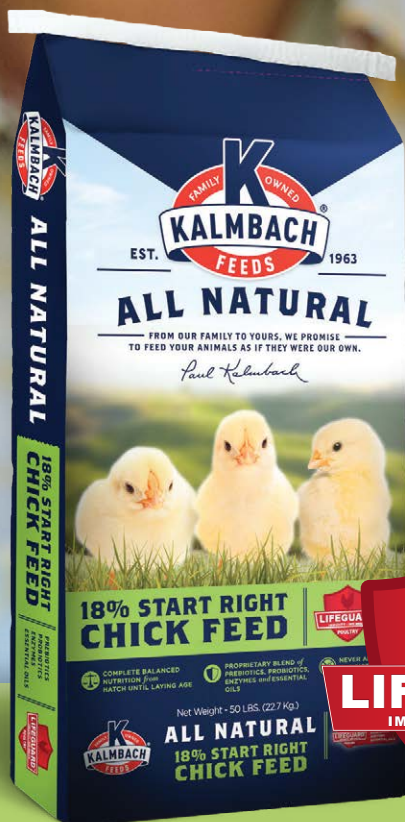
Enjoy! 🍷

HANNAH N. MCCLURE is an old soul homemaker and mother of four from Ohio. Gardening, keeping bees, sewing, raising chickens/seasonal hogs, and baking/cooking from scratch are a few things she enjoys in her homemaking. Always learning and always chasing her littles. Find her on Instagram @muddyoakhenhouse



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Leftover Soap Hacks

What to Do with Soap Shavings and Leftover Soap

BY MELANIE TEEGARDEN



WHAT CAN YOU DO WHEN YOU HAVE LEFTOVER SLIVERS OF USED SOAP, or cut off scraps and heels from soap loaves? These leftover soap hacks will help you to use up every last morsel of your handmade soaps, leaving behind no waste and a variety of creative effects. Included are recipes for milling or rebatching soap, ideas for embedding soap, and tips for using up the last slivers in your soap dish. If you've ever wondered what to do with soap shavings, or what to do with soap scraps, adding them as embedded pieces in a fresh loaf of soap batter can create beautiful decorative effects. Enjoy these leftover soap hacks and learn to get every last bit of use out of all of your soap.

How to Make Soap Out of Old Soap Bars

When you use up a piece of soap, the last thin sliver is often the most fiddly and difficult to use. Many times, this last bit of soap is discarded for the sake of convenience. This is not necessary — every last piece

of your handmade soaps can be not only useful, but beautiful. Slivers of colorful soaps can be embedded whole in soap to create a lovely striped effect, or they can be chopped into pieces for other abstract designs. Saving and milling — or shredding — leftover bits of soap is not only economical and waste-free, but a pleasant creative process. Shredding leftover soap and molding into balls to drop into soap batter can create a fascinating “planets” effect in your soap loaf. Or simply use the shredded soap as is by mixing with fresh soap batter for a lovely flecked or marbled effect.

Milling or Rebatching

Milling, or rebatching, soap is the process of shredding it, melting and remolding for use. This process allows the last bits of water to escape, creating a rich lathering and mild final result that is very dense and long-lasting. In French milling, soap is shredded and then pressed through rollers to create a thick paste that is then industrially pressed into

bars for use. At home we do not have industrial rollers, but we do have slow cookers. With the slow cooker, it is easy to melt down the rebatched soap in order to pour it into molds. This is also an opportunity to change the color of the finished soap or to add skincare or botanical ingredients to the soap. Rebatched soap takes very little fragrance for proper scenting, for instance, so using an unscented base and then scenting the rebatched soap can save a lot of money on fragrances and essential oils.

REBATCHED SOAP RECIPE

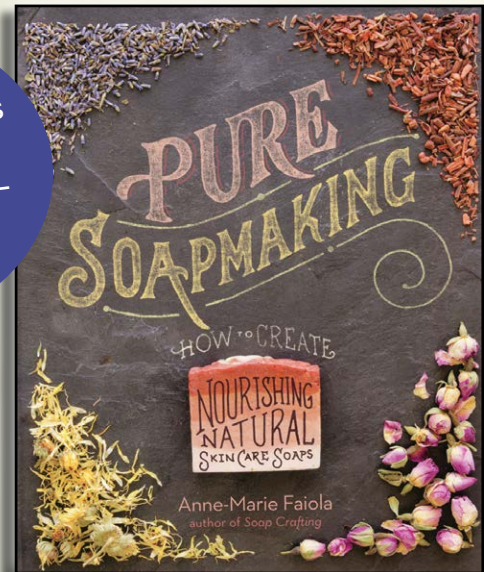
- 3 lbs. plain or salvaged soap pieces, shredded with a cheese grater
- .25 - .50 oz. cosmetic-grade fragrance, optional
- Up to .50 oz. wet additives, such as yogurt or herbal infusion, optional
- Up to .50 oz. dry additives such as herbal powders or clay, optional

Add shredded soap to slow cooker set on low heat. Add wet additives, if using. If not using wet additives, you may need to add .25 oz. plain water to the soap to encourage melting. Don't overdo the water! Cook until melted into a paste, approximately two to three hours, stirring occasionally. When melted into a consistent mass, remove from heat and stir in dry additives and fragrance, if using. Start out with .25 oz of fragrance and mix well before deciding whether or not to add more — this variety of soap does not require much scent. Pour into a loaf mold or into individual molds. When cooled, it is immediately ready to be sliced and used. Do not use a wire cutter to slice this soap from a loaf — the strings may break; it is very hard. Use a long, non-serrated knife or a dough cutter to slice the soap into bars.

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Something From Nothing

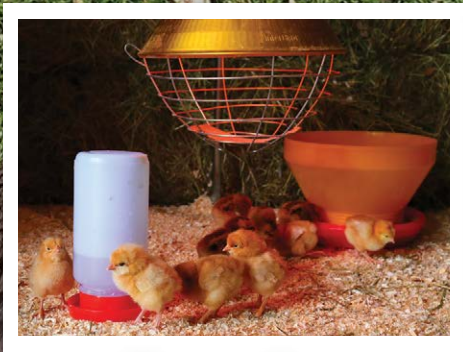
Using up every last sliver of your handmade soaps is a gratifying experience. To be able to put every bit of your effort into a usable product means a lot. Not only that, but with a simple knife or cheese grater, you can transform a couple of bars of plain soap into a beautiful abstract design element in a fresh batch of soap batter. Cubes or spheres of soap can be dropped into soap batter for pleasing effects. Try complimentary stripes of soap heels in a neutral base of plain, scented soap. Soap balls in varying sizes (or all the same size) make a lovely slice of cold or hot processed soap even more special. Even shredded soap can create a lacy coloring effect in your soap bars. Try combining a colorful swirl with embeds for an extra special soap. Top a rich coconut-scented soap with shreds of white soap for a completely useful embellishment. When it comes to rebatching, this

is an excellent way to maximize the impact of your precious and expensive fragrances and essential oils. Since the soap is fully saponified, it takes very little of the fragrance to get a lasting effect. These leftover soap hacks should help you use up every last bit of your soap in a pleasing way. ©

MELANIE TEEGARDEN has been proprietor of Althaea Soaps & Herbals for 14 years. She has run an international website selling bath and body products to individuals and spas since 2006. In addition to her home-based business, Melanie also teaches soapmaking classes in her community of Johnson City, Tennessee, and is the resident soapmaking expert for Home Soapmaking at iamcountryside.com.

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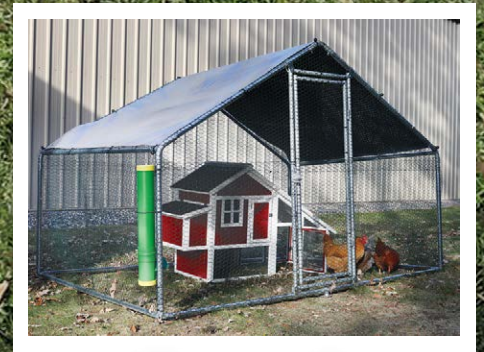
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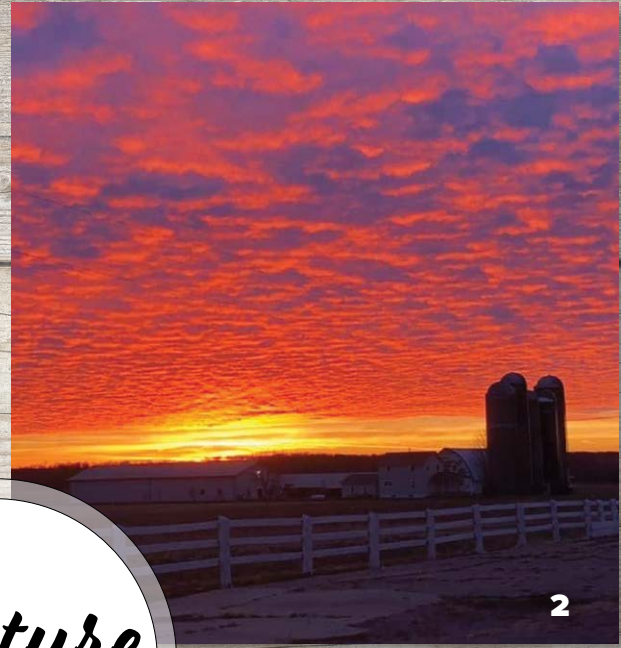
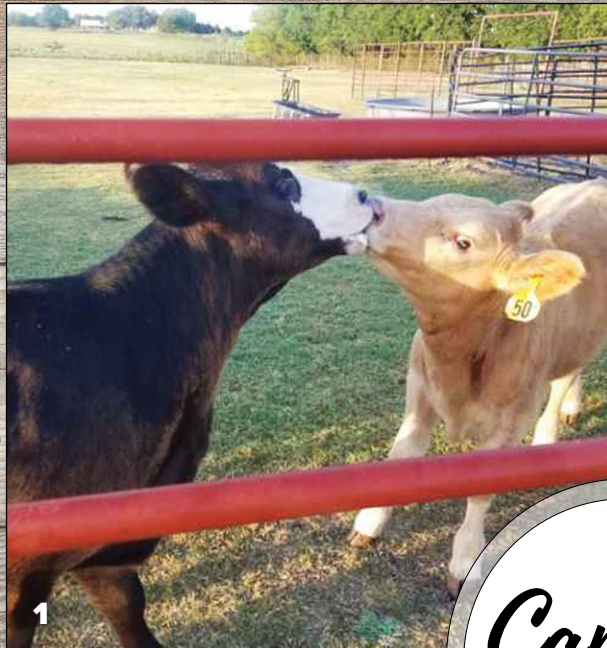
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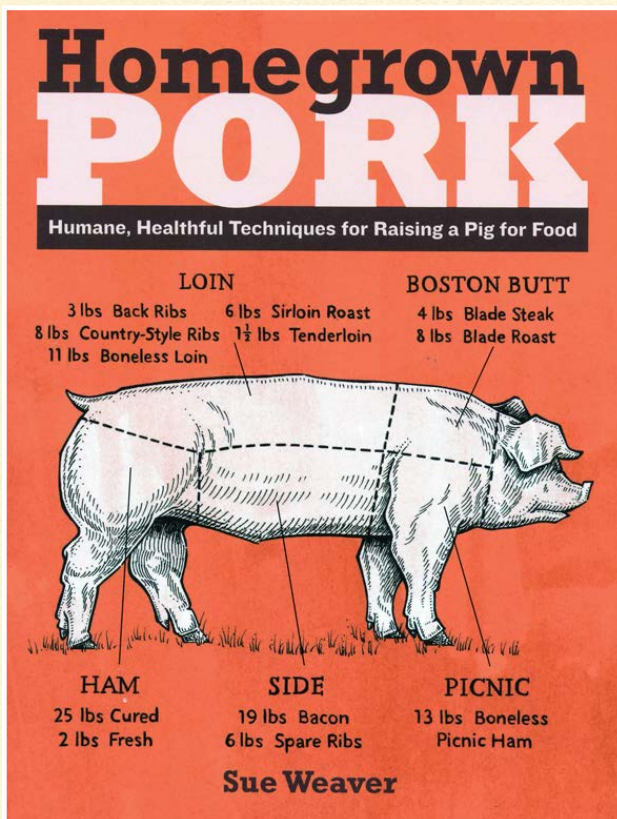
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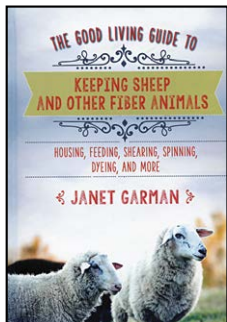
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The Good Living Guide to Keeping Sheep and Other Fiber Animals

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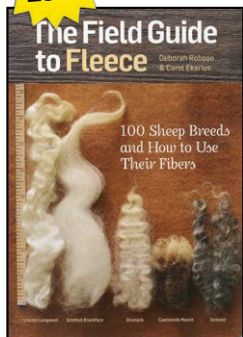


A comprehensive and inspiring guide to small-scale fiber farming and wool crafting. Fiber crafts — such as knitting, weaving, and crocheting — continue to surge in popularity. Readers will learn the basics of properly raising sheep, goats, llamas, alpacas, and rabbits, with tips on selecting animals, feeding, housing, breeding, and healthcare. From there, instructions are provided for shearing, sorting, skirting, washing, picking, carding, combing, and spinning the wool. Enthusiasts will also find recipes and instructions for natural, plant-based dyes and advice for selling your finished yarn. 176 pages. **\$14.99**

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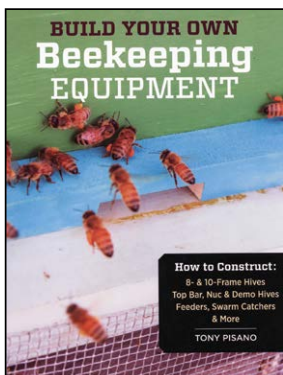
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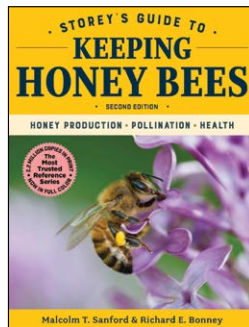


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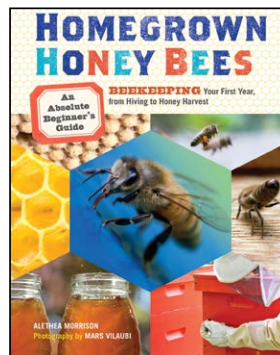


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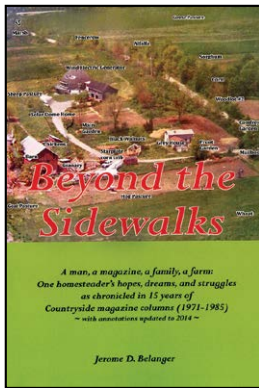
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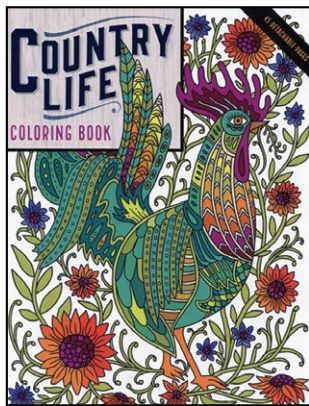
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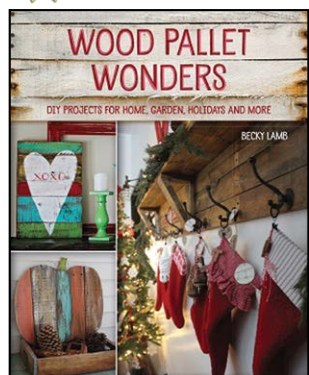
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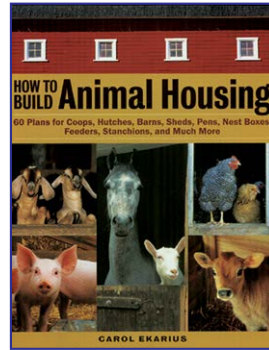


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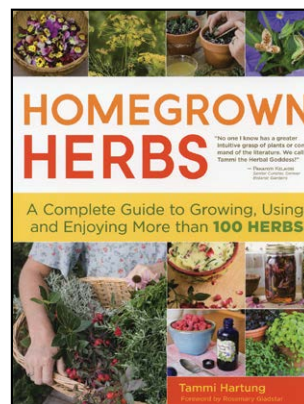
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By KATE JOHNSON



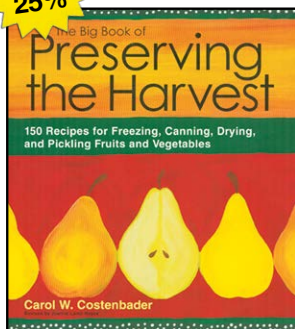
Making cheese at home does not have to be complicated or difficult. Let Kate Johnson, award-winning cheesemaker and “cheese coach,” show you how to use basic ingredients to make a wide variety of cheese in your own kitchen. There are three videos to help you achieve immediate success as well as build the skills that

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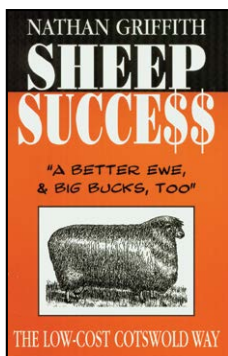
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Sheep Success

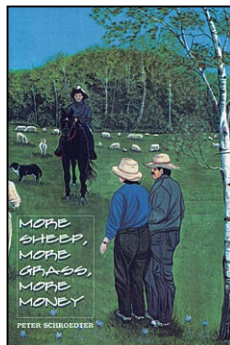
By NATHAN GRIFFITH



Filled with great ideas for a profitable Cotswold flock, this book also shows how you can earn more money regardless of breed. See how today's shepherds are getting up to six times the usual net returns by using long-established but not widely known strategies for breeding, growing, and selling. Boost your flock's profits with any one of the thrifty shepherd skills you'll find in this book. 204 pages. **\$14.00**

More Sheep, More Grass, More Money

By PETER SCHROEDTER



After 20 years raising sheep in Manitoba's Interlake region, Peter and Linda Schroedter figure they're ready to share a bit of their hard-earned knowledge. An entertaining, informative primer on turning consistent profits raising sheep, without working yourself to exhaustion. It's a wonderful blend of hilarious observation and practical advice. This book covers everything from pasture and stock management to

sheep nutrition, guard dogs and many other things concerning sheep production. 112 pages. **\$12.95**

The Have-More Plan

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This classic guide to homesteading is based on solid, practical techniques that remain useful to everyone who wants to learn country skills and increase their self-sufficiency. By turns philosophical and instructional, Ed and Carolyn Robinson share their pioneering approach to efficiently growing vegetables, raising livestock, and building farm structures. Since it was first published in 1943, *The "Have-More" Plan*

has inspired generations of homesteaders to make the most out of whatever land they have available. 70 pages.

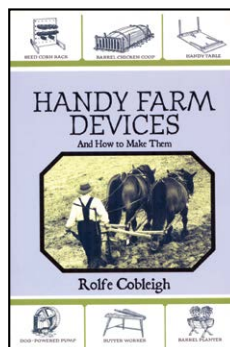
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Homemade Yogurt & Kefir

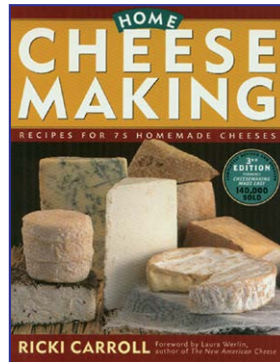
BY GIANACLIS CALDWELL



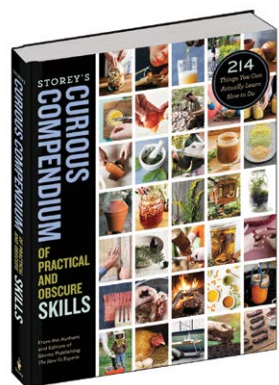
With probiotic-rich foods increasingly recognized as essential to gut health, yogurt and kefir are gaining popularity as a source of protein and beneficial bacteria. Cheesemaker and small-scale dairy producer Gianacis Caldwell opens the door for fermentation enthusiasts and dairy devotees to make and use yogurt and kefir in the home kitchen. She explores the many culture choices and techniques for working with cow, goat, sheep, water buffalo, and even some plant milks. 224 pages. **\$19.95**

Home Cheese Making

BY RICKI CARROLL



85 recipes for cheeses and other dairy products that require basic cheese making techniques and the freshest of ingredients, offering the satisfaction of turning out a coveted delicacy. Profiles of home cheese makers and artisan cheese makers scattered throughout the text share the stories of people who love to make and eat good cheese. Plus information on how to enjoy homemade cheeses, how to serve a cheese course at home, cheese tips, lore, quotes, cheese making glossary, and more. 278 pages. **\$19.95**



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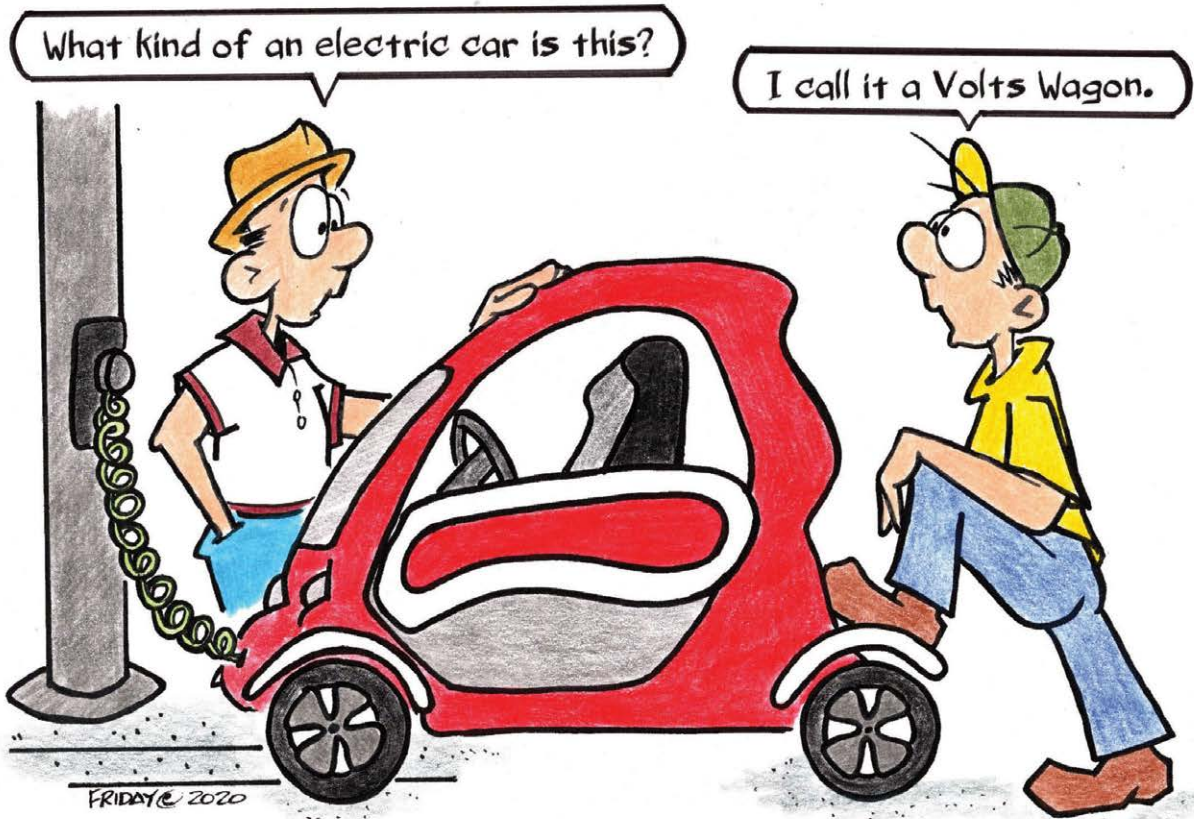
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I told him Snake Charming was a bad idea.



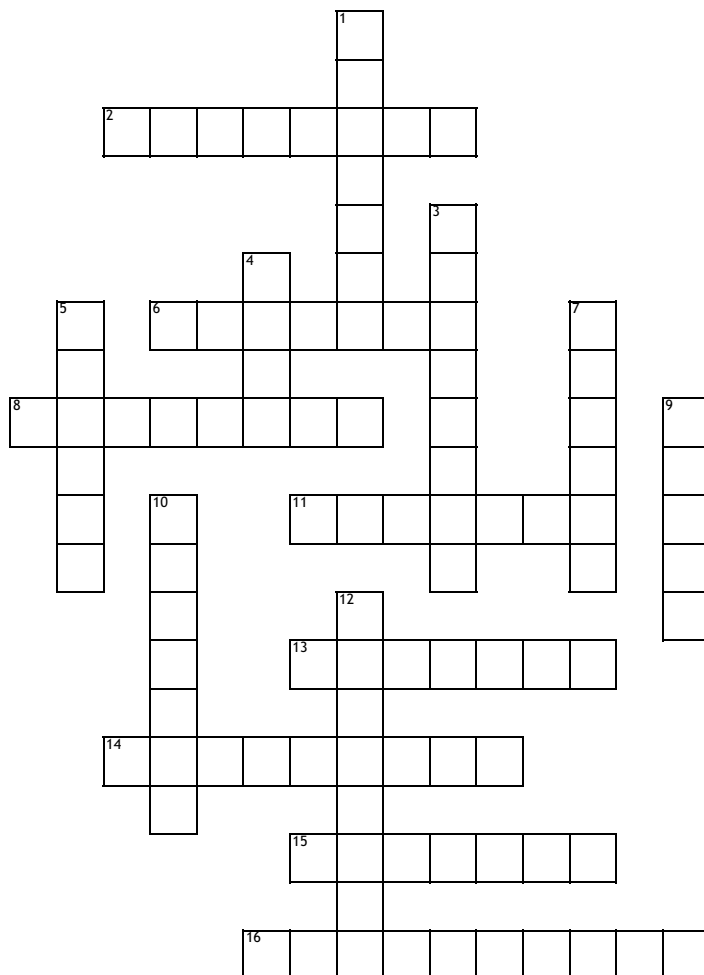
CROSSWORD PUZZLE

ACROSS

2. What is the best way to kill wax moths on frames?
6. One of the most important things to remember with an outdoor brooder is the _____.
8. Homesteaders are known as "_____" and have the essentials to move forward.
11. Cubes or _____ of soap can be dropped into soap batter for pleasing effects.
13. This is one poultry breed that is highly susceptible to becoming broody.
14. _____ is an important consideration when buying homesteading land.
15. An electric car requires no gas or oil, no _____, and virtually no maintenance.
16. This is one of the ingredients used in making pollen patties:
_____.

DOWN

1. Kale, chard, _____, and mustard greens are a delight during the cool spring months.
3. What causes a hen to become broody?
4. One of the easiest foods to grow.
5. _____ are budget-friendly, delicious, fermented vinegar, and fruit-based beverages.
7. There are many corn, bean, and _____ varieties that can be used in a three sisters planting.
9. A good way to protect your plants from frost is to use self-standing _____ tubes.
10. _____ is physically and emotionally stressful for a calf.
12. For efficient natural living, piglets need to learn _____ and survival skills from their mother.



The winner will be chosen randomly from all of the submissions returned by April 1, 2021. The winner of the November/December Reader Contest was Jane Townsend, North Carolina. Enjoy your new camp mug, Jane!



Win a *Countryside* Mug! To submit, either:

Print, fill out, and mail to:
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P.O. Box 566, Medford, WI 54451

Print, fill out, then take a picture and email to:
editor@countrysidemag.com

Be sure to include your contact information so we can inform you if you won the *Countryside* mug. Available for purchase at iamcountryside.com/shop

Poor Will's COUNTRYSIDE almanack

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	Climate change may increase the likelihood of wet weather late into the spring. Plan ahead for early soil preparation and planting. 1	Lunar perigee on March 2, so close to full moon on February 27, will bring severe weather to the first week of the month, rains in the South, snow in the North. 2	In reviewing your culling program, consider that older sheep and goats often command higher prices at the end of Ramadan (May 11). 3	Roman Easter and Passover are just a month away. This period can be a major source of sales of your new lambs and kids. 4	Continue to keep your chickens' water between 50 and 70 degrees in the coldest springs. Give them some untreated lawn clipping treats, too. 5	As the moon darkens, take extra care of your animals: trim feet, worm, and treat for fleas and ticks. 6
Transplant vigorous sets of collards, cabbage, broccoli, and kale to the garden. Put in potatoes, oats, and field corn after forsythia blooms. 7	Uncover and fertilize strawberries. Spread fertilizer on all garden spaces. Cut off tips of young black raspberry branches, and remove old canes. 8	As the moon wanes, spray fruit trees. Do late pruning on colder afternoons. Add fertilizer as soon as possible. 9	Seed tobacco and explore marketing possibilities for this and other small-acre cash crops (like asparagus). 10	Transplant shade and fruit trees, shrubs, grape vines, strawberries, raspberries, and roses while the ground temp. remains in the 40s and 50s. Complete all field planting preparations. 11	Your mares may come into heat as the day's length nears 12 hours. Be sure they are up-to-date on their vaccinations. Check for bot eggs. 12	When the great dandelion bloom is over, expect bees to swarm within two or three weeks. 13
New Year's celebrations for immigrants from Cambodia, Thailand, and Laos begin in a month. Earmark your lambs and kids for this market now. 14	Set flats of pansies and hardy vegetables out of doors on milder days to harden them for late March or early April planting. 15	Warm-weather crops such as tomatoes and peppers could be ready to set out on the first of May if you start them this week under lights. 16	St. Patrick's Day: Plant peas and potatoes as conditions permit. This is also the time to watch for termites to swarm near old barns and outbuildings. 17	Check the weight of kids and lambs every two weeks. Plan ahead for Ramadan sales of halal meat to begin in late April this year. 18	March begins the season of highest losses from coyotes, mountain lions, and bears. Check electric fences for weed and vine growth that could weaken voltage. 19	Clean out the hen house. Check all of your poultry for mites. If you have a broody hen, get her away from her nest for several days. 20
The season of flowering fruit trees is underway through the South. 21	Fresh pasture sets the stage for bloat in your livestock. Transition animals slowly to fresh pasture. 22	Check the woods for morel mushrooms when mayapples first appear. 23	Parsnip, horseradish, dock, and dandelion roots are often dug when foliage just begins to emerge; root quality is usually at its best before the soil begins to warm. 24	Cut some lush pasture and let your sheep and goats get used to the taste before you let them out in it. 25	Wild onions are growing throughout the country; they can change the flavor of the milk your sheep, goats, and cows are giving. 26	Passover begins today and lasts through April 4. The Jewish market typically is best after religious holidays come to a close. 27
In the South, March is the time to watch fecal egg counts to determine if you need to deworm. 28	The March 29 cold front is likely to be strong this year, influenced by lunar perigee and full moon. Expect frost deep into the South. 29	Be ready for carpenter bees: seal their last year's entry points and treat the wood with insecticide. Do it in the cool of the morning. 30	The graduation cookout market begins in early April. Have kids and lambs ready to sell for those celebrations throughout the spring. 31	<h1>March</h1>		

The stormy March is come at last
With wind, and cloud, and changing skies.

William Cullen Bryant



It is Early Spring: frost melts down
 The furrow in the West Wind,
 Plowshares glisten in the sun,
 The sleek, black land shines, open.

Virgil

GUIDE TO FARMING AND GARDENING

BY W. L. FELKER

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<h1>April</h1>				Livestock given dry hay before being let out to new pastures tend to gorge themselves less and develop bloat far less frequently. 1	The April 2 high-pressure system initiates a period of unsettled weather that brings an increased chance of tornadoes in the South and Midwest. 2	Tomorrow is Roman (traditional) Easter. Save your newly weaned, milk-fed lambs, not older than three months, for this market. 3
Passover ends today. Milk-fed lambs and kids below 60 pounds are favored for this market. Lamb stew is a traditional Seder dish at Passover Seder dinners. 4	This year, Orthodox Easter comes on May 2, almost a month later than Roman Easter. Promote your lambs and kids to this lucrative market. 5	Livestock may not get enough nutrition from forage during wet springs. Take up the feeding slack with supplements and hay. 6	Eastern tent caterpillars may begin to weave webs on flowering fruit trees. Destroy the webs as you find them. 7	Since this week of April is a major tornado window of the year, severe storms could well occur. Have a shelter and disaster plan for your family and animals. 8	Keep hunting morel mushrooms when orchard grass is ready to harvest. When ticks and mosquitoes become troublesome, the morel season is about over. 9	Keep a record of kills by predators, and compare when and where they occur. Patterns almost always appear in animal behavior. 10
Today's new moon will threaten flowering fruit trees and early gardens throughout northern states with frost. 11	Ramadan begins today, with month-long daylight fasting. Advertise your lambs and kids for the close of Ramadan on May 11. 12	Keep the baking soda on hand for bloat. Livestock given dry hay before being let out to new pastures tend to gorge themselves less and develop bloat far less frequently. 13	New Year's Celebrations for immigrants from Cambodia, Thailand, and Laos begins today and lasts through the 17th, favoring animals in the 70-lbs. range. 14	Before the spring gets too far along, give annual vaccinations and have bloodwork done on your flock and herd. 15	Transition your flock and herd slowly from last year's old hay to this year's fresh hay. 16	Be ready to meet the demand for asparagus at your roadside stand and at farmers markets. Watch and plan for the peak time next year. 17
Approach representatives of various religious faiths to discuss the most appropriate way to make your lambs and kids available for their feast days. 18	When the treeline starts to turn green, weevils appear in alfalfa, and cabbage worms take over the cabbage. 19	A major increase in the average daily amount of sunlight now occurs throughout the country. 20	Today is also Cross-Quarter Day, the day in which the sun's position reaches its halfway point to solstice. 21	Don't forget the paperwork for registering the animals you intend to show or sell. 22	Some sheep owners are putting their flocks to work cutting grass, controlling weeds, and reducing the undergrowth in forests. 23	As April comes to a close, highs in the 90s become possible. Excessive heat can make boars, rams, and bucks sterile for months at a time. 24
Spring rains increase the risk of internal parasites in livestock. Make use of stool sample analysis to ensure that drenching has been effective. 25	Today's full moon, combined with tomorrow's lunar perigee, create "Supermoon" conditions. Expect frost in northern areas. 26	Shear your ram's scrotum for hotter weather ahead. You could shear the early lambs, too; they tend to grow better without a lot of wool in the heat. 27	Shear Angora goats and rabbits to promote the growth of new hair. 28	Consider exploring the possibility of selecting some of your late-winter lambs and kids for the Navaratri Hindu market this coming autumn. 29	Chances for frost now virtually disappear in the South and become relatively insignificant throughout much of the North. 30	

THE SUN

Daylight Saving Time begins at 2:00 a.m. on Sunday, March 14. Set your clocks ahead one hour before you go to bed on March 13. Spring equinox takes place and the Sun enters Aries on March 20 at 5:37 a.m. (EDT). By April 1, the Sun reaches a declination of four degrees, 33 minutes, almost 60% of the way to summer. It enters the sign of Taurus on April 19.

THE PLANETS

Venus continues to travel retrograde this spring, preceded by Jupiter and Saturn before dawn. In this configuration, Jupiter is the first major morning star (Saturn being far less prominent), and Venus rises just before the sun, the third and brightest of the morning stars. Mars also moves retrograde, and it continues to be the red evening star. Another red object in Taurus is Aldebaran, the brightest star of the Hyades constellation within Taurus. On the evening of March 22, Mars and Aldebaran will appear to be almost side by side. Aldebaran will be the twinkling

red object. Jupiter and Saturn seem to almost touch the moon on April 6 and 7 after midnight.

THE STARS

The Milky Way fills the western horizon as Orion sets just behind the sun. Now, the middle of the heavens are in their prime spring planting position: Castor and Pollux to the west, Leo with its bright Regulus directly overhead, and Arcturus dominating the east. At midnight, the brightest star overhead is Arcturus, the brightest western star is Regulus, and the brightest light in the east is Vega. At morning chore time, Vega is the brightest star above you. Arcturus is the brightest in the western sky. Deep along the northern horizon the brightest star is Capella.

THE SHOOTING STARS

The Lyrid meteor shower begins on April 16 and peaks on April 21-22. Expect up to 20 shooting stars per hour in Lyra, almost overhead in the eastern sky after midnight. The Eta Aquarid meteors run from April 19 to May 28, peak-

ing in May. Find them low in the east before dawn while you are still looking for Lyrids.

METEOROLOGY

Major March weather systems usually reach the Mississippi River on March 2, 5, 9, 14, 19, 24, and 29. Full moon on March 28 and lunar perigee on March 30, strengthening the March 29 cold front, will likewise cause meteorological disruptions for the end of the month. New moon on March 13 is likely to bring middle March storms. Seven major cold fronts move across the nation in an average April. Snow is possible in Northern areas with the arrival of the first three fronts. Average dates for the weather systems to reach the Mississippi: April 2, 6, 11, 16, 21, 24, and 28. New moon on April 11 is likely to intensify the cold front that usually passes through near April's second week, and it will threaten blossoms on fruit-bearing trees at higher elevations. The Supermoon of April 26 (full moon) and April 27 (lunar perigee) should definitely bring storms, followed by frost.

LUNAR FEEDING PATTERNS FOR PEOPLE AND BEASTS

When the moon is **above** the continental United States, creatures are typically most active. The second-most-active times occur when the moon is **below** the earth.

DATE	ABOVE	BELOW
March 1 – 6	Midnight to Dawn	Afternoons
March 7 – 13	Mornings	Evenings
March 14 – 21	Afternoons	Midnight to Dawn
March 22 – 28	Evenings	Mornings
March 29 – 31	Midnight to Dawn	Afternoons
April 1 – 4	Midnight to Dawn	Afternoons
April 5 – 11	Mornings	Evenings
April 12 – 20	Afternoons	Midnight to Dawn
April 21 - 26	Evenings	Mornings
April 27 – 30	Midnight to Dawn	Afternoons

PHASES OF THE GREAT GROUNDHOG MOON, THE ROBIN MATING CHORUS MOON, AND THE COWS SWITCHING THEIR TAILS MOON

Groundhogs have predicted the arrival (or delay) of spring by the end of February and early in March, robins have arrived as far north as the 40th Parallel. Once enough robins have gathered, their mating chorus begins in the dark before dawn. As Early Spring turns to Deep Spring, flies gather in the barnyards, and cows are switching at them with their tails.

March 2 | Lunar Perigee (when the Moon is closest to Earth): 12:00 a.m.

March 6 | The Great Groundhog Moon enters its last quarter at 8:30 p.m.

March 13 | The Robin Mating Chorus Moon is new at 5:21 a.m.

March 18 | Lunar Apogee (when the Moon is farthest from Earth): 12:00 a.m.

March 21 | Second Quarter: 9:40 a.m.

March 28 | Full Moon: 1:48 p.m.

March 30 | Lunar Perigee (when the Moon is closest to Earth): 1:00 a.m.

April 4 | The Moon enters its last quarter: 5:02 a.m.

April 11 | The Cows Switching Their Tails Moon is new at 9:31 p.m.

April 14 | Lunar Apogee (when the Moon is farthest from Earth): 1:00 p.m.

April 20 | Second Quarter: 1:59 a.m.

April 26 | Full Moon: 10:32 p.m. *Supermoon*

April 27 | Lunar Perigee (when the Moon is closest to Earth): 10:00 a.m.

THE SCKRAMBLER
MARCH/APRIL

WITH WHOM DO YOU SHARE YOUR HOMESTEAD?

Submitted by Jeffery Goss, Jr.

KELVOCIST	SNERF
DBONGSIRS	DISPERS
EAGAL	ENVIS
EBSE	SNAT
GUFNI	REDE
OLTRYUP	LETTURS
GSOD	EALTGEVBSE
GSORF	DONSTER
RAINSMEL	SOSM
CORPS	LOIS BEARCAT
BUSSHR	

The 3rd, 7th, 24th, and 40th correct answers will win their entrants a copy of *Poor Will's Almanack* for 2021, a \$12.95 value! Send your answers to

Poor Will
P.O. Box 431
Yellow Springs, OH 45387

before the answers appear in *Countryside*.

There should be no typos in this puzzle, and no typo prize will be awarded. If you happen to find a typo, however, you may simply skip that word without penalty.

WINNERS & ANSWERS
NOVEMBER/DECEMBER

Poor Will promised five dollars to 3rd, 11th, 27th and 68th persons who unscrambled the Sckrambler words before the answers appeared in *Countryside*. Twenty-nine correct submissions were received. The 3rd correct respondent was Matthew Wood of Fort Valley, GA.. The 11th was Earleen Jensen of Royal, NE, and the 27th was Debi Odekirk of Watertown, WI. All of the winners also figured out that there had been a typo in DRILL, so they received \$7.00 each.

REMAH/HAMMER	CHSLIE/CHISEL
VREDRIWSCRE/ SCREWDRIVER	LLVEE/LEVEL SNDRAE/SANDER
EPLISR/PLIERS	AAWSKCH/HACKSAW
DHNA WAS/ HAND SAW	PPIILLHS REVDRISCERW/ PHILLIPS SCREWDRIVER
LRDLI/DRILL	AILN ETS/NAIL SET
HWCNE/WRENCH	IILSNGD VBLEE/ SLIDING BEVEL
PEAT EAUEMSR/ TAPE MEASURE	EPALN/PLANE
LICNEP/PENCIL	MPSCLA/CLAMPS
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FOREST VIEW GOATS, Samuel & Lydia Fisher, 92 McIlvaine Rd, Paradise, PA 17562. 717-875-9016. Nigerian Dwarf & Alpine Dairy Goats.

STOLTFUS GOATS, Stephen & Anna Stoltfus, 1407 Beaver Dam Rd., Honeybrook, PA 19344. 484-798-7326. Nigerian Dwarf Dairy Goats.

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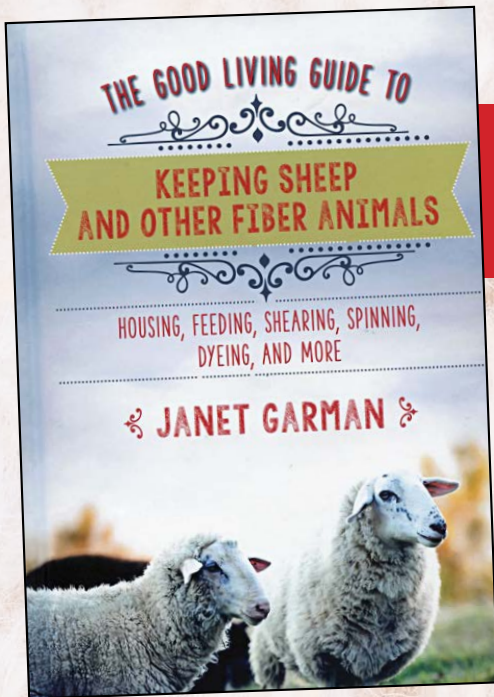
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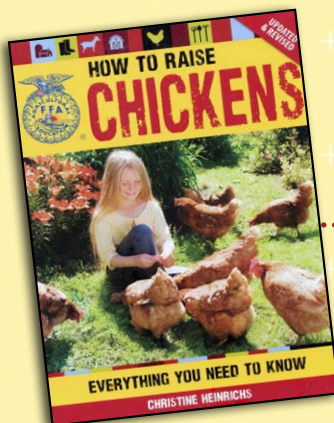
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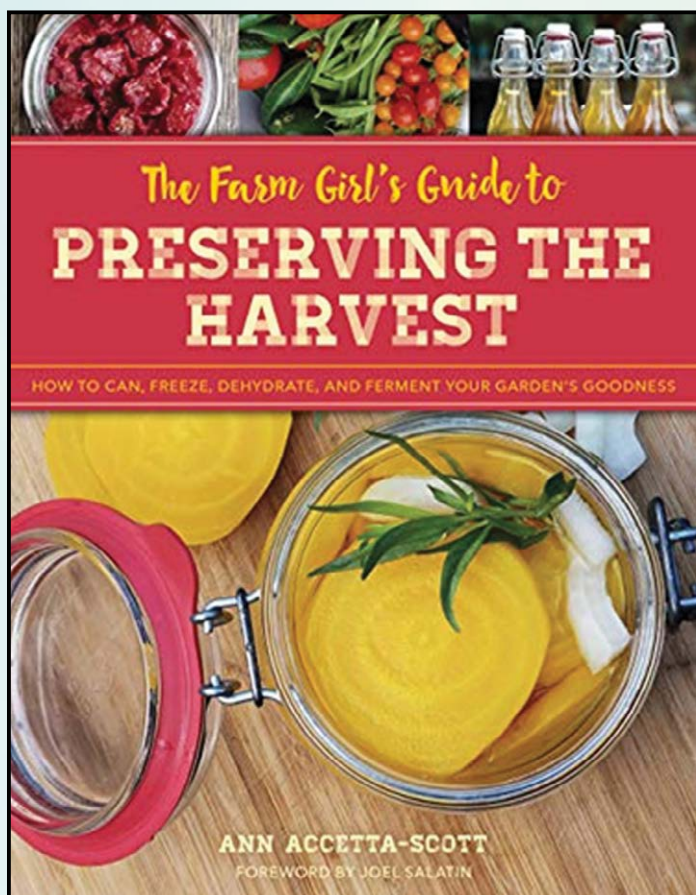
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