



# 10 Fishing Methods for Survival Scenarios

So you find yourself in a wilderness survival scenario with a little fishing gear at hand. If you know some techniques and how to fabricate some gear in the field, there's hope to provide food for yourself at the nearest waterway. Take time now to practice some of these time-tested survival fishing techniques.

- 1. Hand fishing.** This is as primitive as it gets. Here you actually grab the fish from the water with your hands, so put on some gloves and wade into the murky water, because that's where the catfish are holed up.
- 2. Gill netting.** These nets are used to catch fish as they try to swim through the openings of the net and become entangled. Gill nets can be effective in different places at different times, but they yield the best results during a migratory fish run.
- 3. Dip netting.** Simply use a standard fishing net used for hook and line fishing to scoop up unaware fish in the shallows.
- 4. Spear fishing.** It's not always easy to skewer a moving fish, but spear fishing is still a worthwhile activity in most survival situations. Just make sure you compensate for refraction and aim below the fish.
- 5. Hand lining.** A simple hook and line, along with some bait, is really all you need to catch fish. Hand lines are usually handheld coils of line that are cast and retrieved by hand.
- 6. Gorge hooking.** Using a gorge hook is not the same as using curved steel hooks. The method here is to allow the fish to swallow the bait, which has a sharp thorn or bone shard sticking out of it. After you think a fish has swallowed the gorge hook, don't jerk the line to set the hook, just slowly coax it into a waiting dip net.
- 7. Striking iron.** One of the oddest fishing methods, this consists of stunning a large, slow-moving fish by striking it with a rod or slender bar of metal as the fish nears the surface.
- 8. Basket trapping.** A container with a funnel-shaped entrance are all you need to build an effective fish trap. Take into account the size and habits of the fish you hope to catch and build your trap to fit. Wooden slat traps for catfish are typically more than a yard long, with a large funnel opening wide enough to imprison even a fat blue cat. Minnow traps can be made from a soda bottle with the neck cut off and inverted inside the bottle.
- 9. Fish weiring.** A weir can be a wall, circular fence, or large funnel designed to direct fish into your trap. Some of the traditional weir construction styles of ancient times are still being used today. Why? Because they work. Weirs can be built of stone for permanent construction, or by driving stakes or posts into the mud or sand for semi-permanent installations. A weir can also aid your spear fishing and dip netting efforts.
- 10. Fish poisoning.** Only to be used in dire emergencies, fish poison has traditionally been derived from crushed plant materials that release compounds into the water and stun or kill the fish. Poison is typically used in still water and small pools, though this ancestral technique has been used in rivers and larger waterways.



# Animal Emergency Preparedness

**Pets, farm animals and livestock** rely on their humans to protect them and keep them safe in all types of emergencies. It's important to have a plan in place ahead of severe weather and other disasters to protect your animals and livestock. The following checklists are designed to help farmers and other pet owners better prepare for evacuating and caring for animals in a disaster.

## Basic Disaster Preparation:

- Assemble an evacuation kit (see below).
- Develop an evacuation plan for all of your animals and practice the plan.
- Keep written directions to your home near your telephone. This will help you and others explain to emergency responders exactly how to get to your home.
- Identify alternate sources of food and water. Because flood waters are often contaminated with sewer waste and may also pose a risk of chemical contamination, animals should be prevented as much as possible from accessing and drinking from those sources.
- Have well maintained backup generators and a source of fuel for use in food-animal production operations.
- Keep vehicles well maintained and full of gas.
- Keep emergency cash on hand. (Remember: ATMs may not work.)
- If evacuating is impossible, decide on the safest housing option for your animals, realizing that the situation is still life threatening.
- Assess the stability and safety of barns and other structures, promptly remove dead trees, and minimize debris in fields and the immediate environment.
- If you live in an area prone to wildfires, clear away brush and maintain a defensible space around structures.
- Keep a list of the species, number and locations of your animals near your evacuation supplies and note animals' favorite hiding spots. This will save precious rescue time.
- Ensure your animals have proper identification such as:
  - microchip
  - tattoo
  - halter tag
  - neck collar
  - leg band
  - brand
  - mane clip
  - luggage tag braided into tail or mane
  - clipper-shaved information in the animal's hair
  - livestock marking crayon, non-toxic, non-water-soluble spray paint, or non-water soluble markers to write on the animal's side permanent marker to mark hooves
  - neck chain
  - ear notches
  - leg band
  - ear tag
  - wattle notching
  - back or tail tag

## Animal Emergency Preparedness *(continued)*

### Evacuating large animals

Equine and livestock evacuation can be challenging. Develop an evacuation plan in advance and make sure animals are familiar with being loaded onto a trailer. Locate and prearrange an evacuation site for your animals outside your immediate area. Possible sites include:

- veterinary or land grant colleges
- racetracks
- show grounds
- pastures
- stables
- fairgrounds
- equestrian centers
- livestock corrals
- stockyards or auction facilities
- other boarding facilities

If you do not have enough trailers to quickly transport all of your animals to an evacuation site, contact neighbors, local haulers, farmers, producers or other transportation providers to establish a network of available and reliable resources that can provide transportation in the event of a disaster.

If evacuation of horses/livestock is impossible, relocate them to the safest place possible based on the type of imminent disaster and the environment, realizing that the situation could be life threatening. Make sure they have access to hay or another appropriate and safe food source, as well as clean water and the safest living area possible, including high ground above flood level. Do not rely on automatic watering systems, because power may be lost.

The decision to leave your horses/livestock in the field or in the barn should be based on the risks of injury resulting from the disaster and from the immediate environment during that disaster. Factors to consider include the stability of the barn, the risk of flooding and the amount of trees and debris in the fields. If time permits, secure or remove all outdoor objects that could turn into dangerous flying debris.

### Equine and livestock evacuation kit

- 7–10 day supply of feed, supplements, and water
  - Bandanas (to use as blindfolds)
  - Batteries (flashlight, radio)
  - Blankets
  - Copies of veterinary records and proof of ownership
  - Cotton halter
  - Duct tape
  - Emergency contact list
  - First aid kit
  - Flashlight
  - Fly spray
  - Grooming brushes
  - Heavy gloves (leather)
  - Hoof knife
  - Hoof nippers
  - Hoof pick
  - Hoof rasp
  - Instructions
    - Diet: record the diet for your animals.
    - Medications: list each animal separately, and for each medication include the drug name, dose and frequency.
- Provide veterinary and pharmacy contact information for refills.



## Animal Emergency Preparedness *(continued)*

- Knife (sharp, all-purpose)
- Leg wraps and leg quilts
- Maps of local area and alternate evacuation routes in addition to
- GPS (in case of road closures)
- Non-nylon halters and leads (leather/cotton)
- Nose leads
- Paper towels
- Plastic trash cans with lids (can be used to store water)
- Portable livestock panels
- Radio (solar, hand cranked and/or battery operated)
- Rope or lariat
- Shovel
- Tarpaulins
- Trash bags
- Twitch
- Water buckets
- Whip/prods
- Wire cutters

### Evacuating backyard poultry

- Be sure to include birds in your disaster plans. Plastic poultry transport crates/coops work well for transporting chickens if evacuation is necessary. Vehicle interiors should be warmed in winter or cooled in summer before transporting birds.
- Transfer birds to more suitable housing as soon as possible to facilitate feeding and watering. Line crates or cages with shavings or other absorbent material for ease of cleaning. At the evacuation site, house birds away from noisy areas and other flocks, and protect them from the weather and predators.

### Backyard poultry evacuation kit

- Leg bands with an emergency telephone number and photos of birds can help you identify them if they escape or get lost.
- Feed and water for 7–10 days. Vitamin and electrolyte packs (stress packs) may help ease stress.
- Sufficient feeders and waterers for the number of birds.
- Detergent, disinfectant, gloves and other cleaning supplies for cleaning cages.
- Feeders and drinkers.
- Extra absorbent bedding material (newspapers can work temporarily) to line cages or temporary coops.
- If evacuating chicks, consider their special needs (heat, food, equipment).

### Additional contacts for equine and livestock owners

- State veterinarian
- State veterinary colleges or land grant colleges of agriculture
- Private stables/farms
- County Extension office; especially important for livestock owners
- Brand inspector, if applicable
- State and county livestock associations
- Racetracks/Fairgrounds/Show grounds
- Stockyards
- Equestrian centers
- Local haulers or neighbors to help with transportation
- Feed distributor



## Animal Emergency Preparedness *(continued)*

- American Association of Equine Practitioners
- American Association of Bovine Practitioners
- American Association of Small Ruminant Practitioners
- American Association of Swine Veterinarians
- USDA-APHIS District Director/Assistant Director

### Have A Plan For Your Horses

*The following information has been provided courtesy of the **Humane Society of the United States**.*

- Call your county and ask if they have an emergency shelter or location for animals.
- Call local animal control to flag your property so it's on the radar of emergency officials for assistance.
- If you have a horse or large animal at a boarding facility or barn, ensure there is a disaster plan in place to notify owners and or provide evacuation, if necessary.
- Ensure locks on barn doors are operational and easily opened in the event of an emergency.
- Ensure you have enough vehicles/trailers to move the number of horses at your facility.
- Permanently identify each horse by tattoo, microchip, brand or photograph. In your records, include the horse's age, sex, breed and color. Keep this information with your important papers.
- Keep halters ready for your horses. On each halter, attach a luggage tag with the following information: the horse's name, your name, email address, your telephone number and another emergency telephone number where someone can be reached. At the time of evacuation, consider additional temporary identification, such as a leg band.
- Place your horses' Coggins tests, veterinary papers, identification photographs, and vital info — such as medical history, allergies and emergency telephone numbers (veterinarian, family members, etc.)—in a watertight envelope. Store the envelope with your other important papers in a safe place that will be easy for you to access, so you can take them with you when you and your horses evacuate.
- Make arrangements in advance to have your horse trailered in case of an emergency. If you don't have your own trailer or don't have enough room in your trailer for horses, be sure you have several people on standby to help evacuate your horses. Check with local haulers for availability during emergencies. When using emergency transport by unknown haulers during the emergency, collect contact information, vehicle identification, license plate and driver's license.
- Practice loading your horses into a trailer so they become comfortable with the procedure.
- Have a back-up plan in case it's impossible to take your horse with you when you evacuate. Consider different types of disasters and whether your horses would be better off in a barn or loose in a field. Your local humane organization, agricultural extension agent, or local emergency management agency may be able to provide you with information about your community's disaster response plans.
- Share your evacuation plans with friends and neighbors. Post detailed instructions in several places—including the barn office or tack room, the horse trailer, and barn entrances—to ensure emergency workers can see them in case you are not able to evacuate your horses yourself.



## Animal Emergency Preparedness *(continued)*

- Prepare a basic first aid kit. Be sure to include enough water (12 to 20 gallons per day per horse), hay, feed and medications for several days for each horse.
- Evacuate as soon as you can; if you wait until the last minute to evacuate, emergency management officials may tell you that you must leave your horses behind.

### Evacuating your equines

- If you are evacuating without your equines, let your large animals out into a paddock or corral and cut off their access to return to a barn or stall (they will naturally retreat to where they are fed or cared for, even if the structure is on fire).
- In extreme danger with limited time, let your horse or large animal into a larger enclosed area that has been tamped down and is out of the line of fire. Ensure the safety of first response personnel by not allowing the horses to run free.
- Remove halters. The synthetic fibers can melt on their faces and the metal rings can get hot and burn them as well. They can also get caught on something in their panic to run or injure themselves attempting to get loose.

### Equines and floodwater

Floodwater is dangerous to swim through with hidden obstacles beneath the water, live electrical wires and unpredictable currents. Although horses and other livestock can swim, exhausted animals can drown. Do not attempt to swim them long distances through floodwaters. If high ground is nearby, provide them with fresh, clean water and notify emergency management of their location for rescue when the waters recede.

### Equines and barn fires

Most barn fires are preventable and too often they result from negligence or apathy toward fire prevention. Preventing barn fires and being prepared in the event of a fire can mean the difference between life and death for your livestock. Knowledge of the danger of fires and how to deal with them is essential, and vigilance is key to prevention.

### How to prevent a barn fire

- Prohibit smoking in or around the barn. A discarded cigarette can ignite dry bedding or hay in seconds.
- Avoid parking tractors and vehicles in or near the barn. Engine heat and backfires can spark a flame.
- Store other machinery and flammable materials outside the barn. Inspect electrical systems regularly and immediately correct any problems. Rodents can chew on electrical wiring and cause damage that quickly becomes a fire hazard.
- Keep appliances to a minimum in the barn. Use stall fans, space heaters and radios only when someone is in the barn.



## Animal Emergency Preparedness *(continued)*

- Be sure hay is dry before storing it. Hay that is too moist may spontaneously combust. Store hay outside the barn in a dry, covered area when possible.
- Reinforce your house, barn and outbuildings with hurricane straps and other measures. Perform regular safety checks on all utilities, buildings and facilities on your farm.
- Use only native and deep-rooted plants and trees in landscaping (non-native plants are less durable and hardy in your climate and may become dislodged by high winds or broken by ice and snow).
- Remove all barbed wire, and consider rerouting permanent fencing so that animals may move to high ground in a flood and to low-lying areas during high winds.
- Install a hand pump and obtain enough large containers to water your animals for at least a week (municipal water supplies and wells are often contaminated during a disaster).
- Identify alternate water and power sources. A generator with a safely stored supply of fuel may be essential, especially if you have electrical equipment necessary to the well-being of your animals.
- Secure or remove anything that could become blowing debris; make a habit of securing trailers, propane tanks and other large objects. If you have boats, feed troughs or other large containers, fill them with water before any high wind event. This prevents them from blowing around and gives you an additional supply of water.
- If you use heat lamps or other electrical machinery, make sure the wiring is safe and that any heat source is clear of flammable debris.
- Label hazardous materials and place them all in the same safe area. Provide local fire and rescue and emergency management authorities with information about the location of any hazardous materials on your property.
- Remove old, buried trash, which is a potential source of hazardous materials during flooding that may leach into crops, feed supplies, water sources and pasture.

### **What to do in the event of a barn fire**

- Immediately call 911 or your local emergency services.
- Do not enter the barn if it is already engulfed in flames.
- If it is safe for you to enter the barn, evacuate animals one at a time, starting with the most accessible ones.
- Never let animals loose in an area where they are able to return to the barn.
- Put a halter and lead rope on each horse when you open the stall door. Be aware that horses tend to run back into burning barns out of fear and confusion.
- Blindfold horses only if absolutely necessary. Many horses will balk at a blindfold, making evacuation more difficult and time consuming.
- Move horses to paddocks close enough to reach quickly but far enough from the barn that they won't be affected by the fire and smoke.
- Be sure to have all your horses checked by a veterinarian after the fire. Smoke inhalation can cause serious lung damage and respiratory complications. Horses are prone to stress and may experience colic after a fire.



## Animal Emergency Preparedness *(continued)*

### For Dogs, Cats, & Small Pets

- [Pet Disaster Preparedness | The Humane Society of the United States](#)
- [Pet Disaster Preparedness & Recovery | American Red Cross](#)
- [Pet Disaster Preparedness | ASPCA](#)





# Answers to Potato Questions

## **Best Time to Plant**

Plant after the danger of frozen soil is past. In Zone 5 you should be able to plant mid-April because the plants start to show up at the beginning of May. Potatoes do best in temperatures between 16 and 26°C (61 to 79°F). This is all also a matter of what variety you plant.

## **Proper Harvesting**

When the plant has turned yellow/brown the foliage is removed and then there is a waiting period of 14 days to ensure the wounds on the potatoes heal and the skin matures. Any longer and you run the risk of fungus, pests, worms etc.

## **Storage**

After harvesting, the best way to store potatoes is to keep them in wooden crates that have been lined with newspaper and then covered with newspaper. The temperature should remain between 4-8°C (39-46°F) and the air humidity 90%! Any less and the humidity will cause the potatoes to shrink/shrivel. Potatoes can be stored in earth as that also holds water, but they should not be wet as that of course encourages fungus.

## **Adding Ethylene**

I was able to talk with an expert from the Potato Advisory Service in Heilbronn, Germany. He informed me that adding ethylene does play a role in inhibiting sprouting, however it only works in commercial storage where the atmosphere can be controlled and the gasses cannot leak out. Using apples in home storage does not provide enough ethylene (should be a constant 10 ppm) to prevent the sprouting, but is enough to actually encourage sprouting!

## **Replanting**

As to the question about the removal and planting of the roots and sprouts on a potato. He said you should cut about 1.5 cm (0.6 inches) to go with it. At that it will take longer to grow than using the whole potato, but it will grow.

He also shared that during the war, people would plant the potato peelings and that worked, too. It just takes longer.



## Botulism Blues

2 months ago I made this scrumptious Rhubarb Curd (like lemon curd, but instead of lemons you use rhubarb juice). The recipe I followed said they "canned it". Hot water bath for only 10 mins. I was skeptical because curd has butter and egg... that would need to be pressure canned if it can be canned safely at all. Well, I don't know why I didn't listen to my better judgment and I followed the recipe anyway.

4 weeks later, the day before I am supposed to leave for a trip, I look over and the curd is exploding out of the jars and oozing over the counter. The texture had completely changed, with green and grey colors on top. One jar lid had not unsealed yet, but I knew it was not safe.

Be careful who you trust when following "canning recipes" and take no risks when food looks off. Some people "can food" and then store it in the refrigerator... if the item needs to be stored in the refrigerator it is probably not properly canned. We all make mistakes...but some should never be eaten.





# Cloth Diapers

I've been thinking about cloth diapers a lot lately, because the small group of CORACers in my town was talking about them at our meeting about 3 weeks ago. In preparation for that meeting, I was researching all the different places to buy various styles of cloth diapers; and I came upon the website where I originally bought mine years ago.

The last time we talked a lot about cloth diapers on the Sustainability team might have been when we put together the informational brochure for the 2021 national conference. I remember looking for cloth diapers during Covid; but the prices were exorbitant, and there were no "seconds" available. But when I looked a few weeks ago, the place where I got mine had seconds back in stock, in all eight sizes. For those who might be interested, here's the link:

<https://clothdiaper.com/collections/prefolds/products/osocozy-pakistani-prefolds-factory-seconds-unbleached-dz?variant=12722584092727>

One does not need all the sizes. In fact, when we were cloth-diapering, we got along very well with just 3 sizes: Infant 4x8x4, Premium 4x8x4, and Toddler 4x8x4. (The 4x8x4 diapers are 4 layers thick on the sides, and 8 layers thick in the middle, whereas the 4x6x4 diapers are 6 layers thick down the middle.) A family might be able to get by with 2 dozen diapers in each size; but then the diapers would have to be washed and dried every day (which would be tough to do in a grid-down situation). For survival-diapering purposes, I would guess that 3 dozen diapers in each size would be the minimum that a family would want; and 4 dozen would be better for the Infant and Premium sizes. If a family were to purchase 3 dozen diapers in each of the 3 sizes that I mentioned above, they'd have diapers for children from 7 pounds to 45 pounds in weight; and the total cost (there's free shipping for orders over \$59) would be right around \$240. Along with two 3-count packages of the Snappi diaper fasteners (which are way easier to use than diaper pins) at \$10 per package, you'd be looking at \$260. Here's the link for the Snappis:

[https://clothdiaper.com/products/snappis-diaper-fasteners?\\_pos=1&\\_sid=a1c6511aa&\\_ss=r&variant=12722507317303](https://clothdiaper.com/products/snappis-diaper-fasteners?_pos=1&_sid=a1c6511aa&_ss=r&variant=12722507317303)

Even if you also bought 2 pairs of plastic diaper pants in each of the 7 available sizes (\$62 in all), the total for all of the cloth-diapering supplies from birth through toilet-training would be just a tad over \$300. And if you or someone who know could knit you some wool soakers to use instead of plastic diaper pants, the cost would be even lower (under \$40 for the cost of the wool yarn for 3

## Cloth Diapers *(continued)*

wool soakers in each of 3 sizes). Here's the pattern for the wool soakers that I knitted for my kids (for those who crochet, this link also has a crochet pattern):

<https://www.borntolove.com/pattern.html>

As long as you keep the soakers well lanolized with something like Eucalan wool wash (which lanolizes the soakers as you wash them), the soakers will work nearly as well as plastic pants without the downside of the potential to cause diaper rash (which sometimes happens with plastic pants). Here's a link for Eucalan wool wash:

<https://eucalan.com/>

Those of us with very young children or grandchildren could attempt to stockpile disposable diapers for a grid-down situation. But from both the sustainability and cost perspectives, stocking up now on cloth-diapering supplies seems like a huge win-win.





# Container Gardening

## Container Gardening

Sometimes 1'x1' (square foot) gardens are known as container gardens. I have even heard raised beds referred to as container gardens. What I am addressing here are vegetables grown in pots or buckets of various sizes. Varieties listed are open pollinated (non-hybrid).

It is my recommendation that you plant vegetables where you can get maximum nutrition from the smaller space. Beets and radishes can be used for the leaves and the roots. Plant varieties with longer roots rather than rounder roots. This would include radishes, beets, and carrots, for example. Use deeper pots for these plants. The tendrils on pea plants can be eaten. Spinach, kale, and chard have more nutrition than lettuce.

## Some vegetables suitable for container gardening:

- **Beans** (bush beans that grow from about 20" up to about 24", yield in about 55 days)
  - Nickel Filet (tender, good producer)
  - Golden Roc d'Or (tender, stringless, yellow)
  - Purple Queen (tender, stringless, purple)
  - Green Slenderette (tender, stringless, green)
  - Pencil Pod Golden Wax (tender, stringless, yellow wax bean)
  - Beurre De Rocquencourt (early, good flavor, yellow)
  - Burpee's Stringless (very early, stringless, green)
  - Landreth Stringless (meaty, heavy yields, green)
  - Red Swan (early, tolerates cool soil and weather, red)
- **Beets** (long rather than round)
  - Cylindra (sweet, tender flesh, very uniform shape)
  - MacGregor's Favorite (tender, delicious leaves)
  - Crapaudine (oldest variety known, 1000 years old, a little difficult)
- **Brassicas** (cabbage and mustard family, early, like cool weather)
  - Bok Choi
  - Rainbow Tatsoi (good for salads)
  - Rosette Tatsoi (larger head, good for salads)
  - Barese Swiss Chard
  - Tuscan Baby Leaf Kale

## Container Gardening *(continued)*

- **Carrots**
  - Little Finger (small)
  - Babette (small)
  - any standard variety like Scarlet Nantes
- **Corn** (for those who must have corn!)
  - Orchard Baby (early, sweet, 3'-5')
- **Edible Flowers**
  - Dwarf Nasturtium [radish flavor – leaves (can substitute for watercress), flowers, buds, seeds (can substitute for capers if brined)]
  - Irish Lace Marigold (licorice flavor – tea, salad, seafood)
  - Sweet Mace Marigold (also known as Mexican tarragon, anise flavor, substitute for French tarragon)
  - Lemon or Tangerine Gem Marigold
  - Calendula (peppery or bitter flavor)
  - Dandelion (leaves, roots, and flowers)
- **Greens**
  - Machê (corn salad)
  - Watercress (needs running water such as a hydroponic set up)
- **Herbs** (Almost anything works except maybe those that would grow bush size because of space restrictions. Here are a few suggestions)
  - Pot Cilantro
  - Midget Savory
  - Emily Basil
  - Any mint
- **Lettuces** (Almost any variety works except maybe those that grow huge like the giant Blue Feather Leaf which reaches 4' tall – that would need some room!)
- **Onions**
  - Grolau Chives or any other type
  - Any type of bunching onions like Evergreen, Welsh, Red Beard, Deep Purple
  - Garlic
  - Zebrune Shallot
- **Peas** (edible pods)
  - Dwarf Grey Sugar
  - Tom Thumb
  - Patio Pride
- **Peppers** (Most pepper varieties, both sweet and hot, can be grown in containers.)
  - Yummy Belles (orange sweet)
  - Mini Bell Red (sweet)
  - Pizza My Heart (red sweet)
  - Early Flame Jalapeños



## Container Gardening *(continued)*

- **Potatoes** (I have found success growing fingerling and smaller potatoes in containers. The container should be at least 24" across and at least 18" deep. There are some container designs that make harvesting from the bottom easier.

- <https://www.pinterest.com/haymanswife/grow-potatoes-in-containers/>

Here are some detailed instructions on growing potatoes in containers.

- <https://www.thespruce.com/growing-potatoes-in-containers-848220>

- **Radishes**

- White Icicle
- French Breakfast

- **Squash**

- Desi (round, small bush)
- Ronde de Nice (round, compact bush type)

- **Tomatoes**

- Tasmanian Chocolate
- Micro Tom
- Orange Hat

There are innumerable resources online to help you select what you want to plant in your containers. The list above is only a beginning. The limit is up to you!

Happy gardening!





# Cook Offal Good

**Offal** (*organ meat and other animal cast-off parts*) is nutrient dense and generally inexpensive. Learn to cook and eat these rejected parts as part of sustainable food and nutrition.

I have made friends with a wonderful lady who raises and butchers all her own meat for herself and a handful of customers. Most people do not want any of the organ meats (heart, liver, kidneys), and when I am seeing her regularly she hands them all off to me for free. She also usually has more bones and pig fat than she can use and gives those to me. One day I even showed up while she was butchering so I could pick up some fresh pigs' feet and experiment with making broth with those.

Many of these healthy items are discarded by butchers or sold inexpensively. If you are able and willing to learn to cook them, it can be a very cost-effective way to feed your family. If you are a hunter, know hunters or butcher any animals, challenge yourself to use as many parts as possible, even if you just feed it to other animals.

It took me many tries to find a pâté recipe I liked, but it is possible. Another great trick is to grind organ meat up and put it in your chili meat loaf or other recipes along with your normal ground beef.

This is a really good cookbook to learn more about offal "cuts" and how they are used:

<https://www.secondsale.com/p/offal-good-cooking-from-the-heart-with-guts-a-cookbook/17472709>

Here is a free website <https://offallygoodcooking.com/>

Podcast: <https://www.westonaprice.org/podcast/eat-your-liver-other-organ-meats-too/#gsc.tab=0>

## My Pâté Recipe

- 2 cups caramelized onions
- 1+ lb of pig liver
- 10 cloves garlic
- 1 cup red wine
- 1 Tbs beef bullion
- Salt, pepper, Spike Seasoning, Oregano
- ½ cup butter

## Cook Offal Good *(continued)*

### Instructions

Roughly chop onion and cook on low heat in ghee (or other fat) until caramelized. Chop garlic and add to onion for about five minutes. Using a slotted spoon, remove the onions and garlic to a food processor or high-speed blender.

Slice the liver, removing any membrane (white filmy layer). Cook the liver on med heat in the remaining fat, wine and bullion, until no longer bloody. Let the liver and fat cool for a few minutes, then add to food processor.

Add salt, pepper and other seasonings. Blend until smooth add a little milk or water if too thick. After this mixture has cooled in the food processor add your butter cut into tablespoon pads and blend until smooth.

Line a container with plastic wrap and smooth the pate into the container so that when it chills, you can turn the container over and peel away the plastic wrap, making the pate slice-able. Alternatively, as I've done here, just put the pate in a bowl or any vessel and scoop it out as needed. Eat fresh or chill to harden and further meld flavors.





# Corn Nixtamalization

**[Marilyn]** In our local group, when we do something... the ladies go home and try it. I'm thinking about making tortillas next time. Maybe lentil tacos to go with it.

**[Mick]** Speaking of tortillas, I have been doing a ton of research on the nixtamalization of corn and the preparation of tortillas from the nixtamal. Would you like me to forward you the links that I have found? I haven't actually done the process yet (I'm still collecting wood ash... we have been burning softwood for a couple of weeks, so I'm waiting for some hardwood ash). But once I have some hardwood ash, I'm going to try it. The instructions all say to wet-mill the nixtamalized corn, so I have bought a wet mill. I'm so excited to try it out.

**[Marilyn]** Sure, forward away. But what is nixtamalized corn? When I taught those nutrition classes, we made flour tortillas.

**[Mick]** Nixtamalization is the name of the process by which corn is cooked in an alkaline solution such as water with calcium hydroxide or wood ash in it. This causes chemical changes in the corn, and these chemical changes make previously unavailable nutrients (such as the B vitamin niacin and the amino acid tryptophan) bioavailable. This process explains why Mexicans, who traditionally pretty much lived on beans and rice, didn't develop the deficiency disease pellagra; this disease was previously common in the American South amongst people who ate little meat or other animal products, and who subsisted on corn and a few other vegetables. In the South, while some people made hominy (which is basically nixtamalized corn), most people just ate corn that hadn't been processed that way (because the process takes time). Over time, the people who ate lots of un-nixtamalized corn often developed pellagra because they weren't getting enough niacin and tryptophan in their diets because those nutrients were tied up and thus not bioavailable in the un-nixtamalized corn on which the people subsisted. So what's the point of this? It's that if corn is properly processed through nixtamalization, then it will, when combined with beans, actually make a complete protein while also containing good levels of B vitamins (including niacin) and carbohydrates (for energy). This would make corn and beans really important foods in a grid-down, survival situation. (I am seriously starting to reconsider my years' long stance of not "wasting garden space" on field corn and dry beans... although, for right now, my plan is that I'm storing a quantity of organic whole-kernel corn, beans, split peas, and lentils.)

Nixtamalization is not difficult. All it requires is some dried whole-kernel corn, a stainless-steel pot, some water, some hardwood ash (although I have heard that softwood ash will also work... you just have to use more of it or something) or hydrated lime (slaked lime, calcium hydroxide... the same stuff that is used for waterglassing eggs), and the ability to bring the pot to a boil. Regarding using wood ash versus hydrated lime: I have read that using ash produces a superior product (with a higher nutrient content and a better flavor).

## Corn Nixtamalization *(continued)*

**[Marilyn]** How in the world would they have figured this out to make corn more nutritious?

**[Mick]** I don't know. How did people figure out that cheese and yogurt are more nutritious than fresh milk, or that lacto-fermented fruits and vegetables are more nutritious than fresh fruits vegetables? God must've let them stumble upon these facts; and modern man would do well to rediscover these ancient ways of food preparation and food preservation.

**[Marilyn]** I am continually blown away by what God has provided for people and how/why they do what they do. All of these various methods of processing foods for storage... like someone sitting thinking, "Oh yeah, this sounds like a good idea: let's put some ash in with the corn."

**[Mick]** Some of the people on the web say to cook the ash in with the corn, and then to rinse it a boatload of times in order to remove all the ash and the lye. To me, that sounds like it would waste a ton of water, which will be scarce in a grid-down situation. A couple of other sources on the web say to use the ash and water to make a lye solution, and then to cook the corn in that. It will take way less water to rinse it when it's done. Here's a copy-pasted email that I sent myself... some of the information that I have found on nixtamalization:

- <https://www.youtube.com/watch?v=EiMWLFI-yd0>
- <https://www.sacredseed.org/blog/2015/12/19/how-to-make-hominy-by-ian-santos-meeker>

### **Comments by Oxbowfarm about the video associated with the above article:**

"I have to say, nice video. I make ash nixtamalized tortillas myself, but I tend to use quite a bit less ash and I cook for much less time. I find if you boil for about 15 min then let it rest for 8 hours or so the pericarp can wash off easily, but maybe you guys are using a traditional hominy recipe. One other thing, pouring that much ash down your drain is maybe not the best idea. I usually pour the first muddy pour out on a garden bed where it will benefit the soil and not clog my plumbing.

### **About what type of wood ash to use:**

"Mtcondie, it depends on who you ask. I've been geeking out on ash info, and nixtamalization info lately because I'm making my own nixtamalization and corn cooking videos. Some cultures use specific ash from specific kinds of trees, and ash does differ in composition depending on what you burn. Straight up wood is actually low in mineral content, and so denser woods tend to have more and higher mineral content because there is more "stuff" there. But bark has a much higher mineral content, no matter what species you are burning. So burning bark, or just ramial wood (twigs etc, which have a very high bark:wood ratio) will give you a higher average mineral content. Ash from grasses, bamboo, and marsh plants tends to be very very high in silica. In my own personal experience, you can make ash from hardwoods or softwoods, and you can absolutely nixtamalize corn with conifer/pine ashes without worrying about "resinous" flavors etc. You may have to play with the ash:corn:water recipe depending on what you are burning, and how fresh the ashes are. The only thing you really want to avoid is ash that contains heavy metals, so no treated wood, paint, or paper products with color dyes etc because that WILL remain in the ash and will poison the food you make with it.



## Corn Nixtamalization *(continued)*

"The main thing is the ash is much denser and muddier, for a given volume of ash added to the water, more of it will remain as a solid mud, so it takes a bit more effort to rinse out if you combine ashes and corn directly. Some recipes, Haudenosaunee recipes I know for certain, tend to mix the ash and water together, boil them, and then drain off the "ash water" (basically wood ash lye) and cook the corn in that so they separate out the mud prior to cooking the corn."

<https://www.youtube.com/watch?v=aYorrJ4Cq20> (*Oxbowfarm's video; he uses calcium hydroxide*)

### **From Oxbowfarm, about the above video:**

"This video describes a simple process for folks interested in trying out making tortillas from dry corn. It will work with any dry field corn, flint, dent, popcorn, or flour corn. Typically we do not use the pickling lime/cal/Calcium Hydroxide for making our own tortillas, we use our own sifted wood ashes, but that process is a little more involved and the calcium hydroxide is more forgiving for your first attempt at nixtamalizing corn. This recipe only required four ingredients; corn, fresh water, pickling lime (cal), and salt. The salt is in fact not necessary, or particularly traditional, but we find it enhances the flavor of the tortillas without compromising them in any way. The basic process is to mix the corn with the water and lime, boil the corn till the seed coat (pericarp) slips easily from the kernels, then leave the corn to soak for a minimum of 8 hours. After soaking, the corn is rubbed to remove the softened pericarps, and rinsed several times to remove them and lower the pH and remove the unreacted alkali/lime. Then the corn is drained, the salt is added, and it is ground in the masa grinder. If you don't possess a masa grinder, a food processor or meat grinder can be used. Traditionally the corn would be ground by hand on a mano and metate stone grinding mill, but these are almost completely unavailable outside Mexico, and are rather labor intensive to use. Once ground to sufficient fineness, the resulting dough is called masa. The masa dough is shaped into balls the size of the desired tortillas and baked/roasted on a hot griddle till cooked thoroughly. All of the steps of the process can vary a bit depending on a number of factors, so they should be considered as general guidelines vs. a hard and fast recipe. Different corns nixtamalize at different rates, and are perhaps best suited to specific cooking styles. This can only arrived at by a bit of trial and repetition."

### **Good article, with clear directions:**

<https://www.radicalgastronomy.com/new-blog/2017/3/28/tamal>

[NOTE: CORAC does not share this author's views on Christopher Columbus or on sixteenth-century Europeans.]

**[Mick]** This excellent article led me to the correct type of mill for wet-milling the nixtamalized corn:

<https://www.azurestandard.com/azure-life/recipes/make-homemade-tortillas-whole-corn/oLYuCjRdxq392e6P>

This is the Estrella mill discussed in the above article. The price of around \$50 is pretty consistent across the various suppliers; but I got it at Walmart because they have free returns until January 31, 2024:

<https://www.walmart.com/ip/Cast-Iron-Manual-Crank-Corn-Grain-Grinder-14-Tall-5-Hopper/954846334>



## Corn Nixtamalization *(continued)*

**[Marilyn]** So, I just bought a 25 pound bag of masa flour. Does that count?

**[Mick]** Masa flour is flour made from corn that has been treated with slaked lime water. So from what I understand, it is a lot like the hominy from the American South. It's supposedly not quite as nutritious or tasty as flour that has been nixtamalized with wood ash, but it still sounds like pretty darn good stuff.

**[Marilyn]** It would take a lot of fuel to cook that corn for hours.

**[Mick]** Not too much; you only have to boil it for 10 minutes (according to some) to 30 minutes (according to others), and then you put it in a haybox for anywhere from 8 to 24 hours. And this, my friend, is why we all built hayboxes earlier this year!

**[Marilyn]** Ok, I'm sold. Reading his article is an eye-opener. I think I even want to buy some of the corn from the seed link.

**[Mick]** It might be cheaper to buy corn from Azure Standard. I just got a 50-lb bag of organic whole-kernel corn from them for \$33.

**[Marilyn]** What kind did you get?

**[Mick]** I got the 50-lb bag:

<https://www.azurestandard.com/shop/product/food/grains/corn/whole/yellow/whole-yellow-corn-organic/7438?package=GR027>

**[Marilyn]** Is this corn basically field corn? Instead of sweet corn?

**[Mick]** Yes, it's field corn instead of sweet corn. I've never actually seen dried sweet corn sold in bulk anywhere (then again, I've never looked). For those who might have the ability to grow their own corn, there are lots of good dent and flint varieties that would work well for this. My favorite dent variety is Reid's Yellow Dent; and my favorite flint variety is Floriani Red Flint. But any flint or dent corn would do. I would not suggest that people try to grow flour corn, as it is much more likely to be afflicted by pests than are the dent and flint corns.

**[Marilyn]** The long cooking process gets rid of the molds that can harm people.

**[Mick]** Now that you mention it, I do remember reading that. It didn't stick, though... something about mycotoxins, and I don't know what those are (which is probably why it didn't stick).

**[Marilyn]** Mold toxins, if I remember correctly.



## Corn Nixtamalization *(continued)*

**[Chris]** Comment on corn... I believe flint is the typical kind grown by native Americans, yellow dent is the commercial kind that covers the entire Midwest. I would think either would work for masa. Corn has always been a traditional diet staple because its not too hard to grow, keeps well when dry, and is a source of energy in the diet. Corn also produces much more quantity of grain per acre. Corn can make 250 bushels/acre. Wheat, around 50 bushels/acre; and soybeans, around 50 bushels/acre. (Local numbers.) So that's why it was a staple to native Americans, pioneers, and modern farmers.

**[MP]** Blue corn is big in the southwest, a group of several closely related varieties of flint corn. Compared to yellow corn, it's got a reputation for being fluffier, and it contains more protein and health benefits than the average corn. It's a staple at taquerias around these parts. Here's a traditional blue corn tortilla recipe:

### **Ingredients:**

Blue masa harina, Salt, Water

**Preparation:** Whisk the dry ingredients. Start adding hot water. Knead the masa with your hands when it's cool (sticky enough to stay together but not come off in your hands) Roll into balls. Press into tortillas or use a rolling pin. Cook in a hot skillet until the dough puffs up (about 10 seconds on one side, then 40-50 seconds on the other). Keep warm.

Plus, an old Navajo blue cornmeal bread recipe:

**Ingredients:** 4 cups of blue cornmeal (roasted), 1/2 cup of cedar ashes (sifted) - the more ash you use, the darker blue the bread, 1/2 tsp salt, hot boiling water

**Preparation:** Mix cornmeal, salt and ashes together well. Add small amounts of boiled water to make a somewhat mushy dough mixture. Put dough in your palm and smash it into a disk shape. Grill on both sides. Notes: In the old days, a flat stone was used over the fire to grill the bread. The bread contains not sugar and sports a hardy corn taste. Makes a hard small bread good for saturating with the broth of any soup.[Marilyn] In our local group, when we do something there is much more interaction and the ladies go home and try it. I'm thinking about making tortillas next time.

**[Marilyn]** In our local group, when we do something there is much more interaction and the ladies go home and try it. I'm thinking about making tortillas next time.





# Do-It Yourself Water Filter

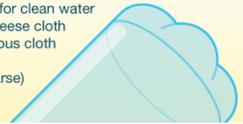
## A basic water filter can be made with ordinary materials:

- ROCKS filter out large particles like twigs, leaves and insects.
- SAND provides mechanical filtration and removes small, fine contaminants.
- CHARCOAL uses absorption to remove even finer impurities in the water.
- CLOTH is another mechanical filter. Cloth can also be used between layers

## EMERGENCY/MAKESHIFT WATER FILTER

### Supplies you will need:

- Plastic bottle or comparable food-safe container
- Another container for clean water
- Clean cotton or cheese cloth
- Coffee filter or porous cloth
- Charcoal
- Sand (fine and coarse)
- Gravel or pebbles



### 1 Cut Bottom Off

Use scissors or a knife to cut off the bottom part of the bottle you will be putting the filter material in.



### 2 Cut Drain Hole

Use scissors or a knife to poke a small hole in the cap. If there is no cap, cut off top of the bottle instead of the bottom for previous step then poke several small holes in the bottom of the bottle.



### 3 1st Layer: Straining Fabric

Stuff the bottom of bottle with a fine cloth or paper fabric, such as a coffee filter, cheese cloth or cotton stuffing.

Sand and grass can also be used in this first stage. Fill the bottom with about 3 inches of grass clippings to filter out larger particulates and help give water a clean taste from chlorophyll contained in the grass. Then fill with 3-4 inches of very fine sand.

**!** Be careful not to use poisonous or unidentified weeds when collect grass clippings. Do not use Highway Department sand, as it can be full of road salt and chemicals.



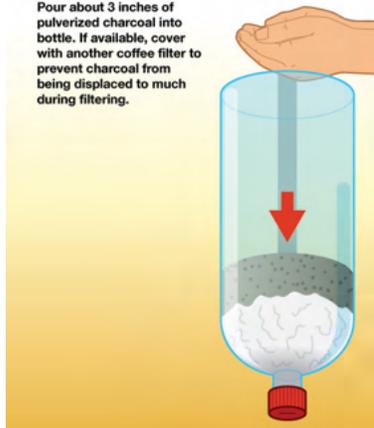
### 4 Break Up Charcoal

Take charcoal from campfire or BBQ charcoal (do not use match/instant light type because it's soaked in chemicals) and use hammer or rock to break it down into smallest particles you can.



### 5 2nd Layer: Pulverized Charcoal

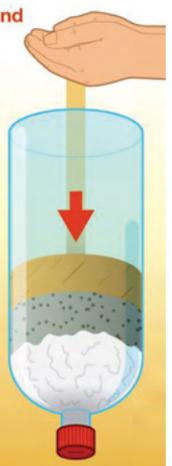
Pour about 3 inches of pulverized charcoal into bottle. If available, cover with another coffee filter to prevent charcoal from being displaced to much during filtering.



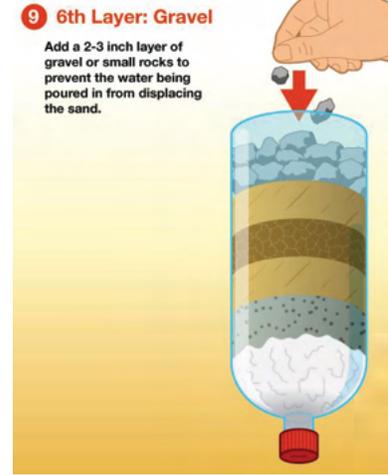
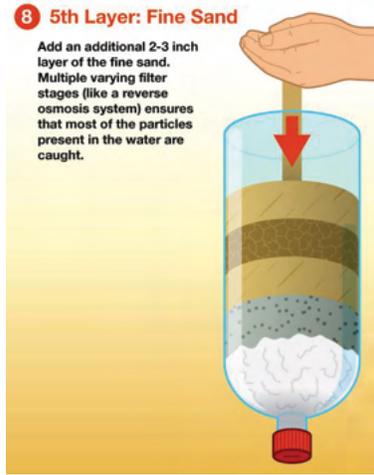
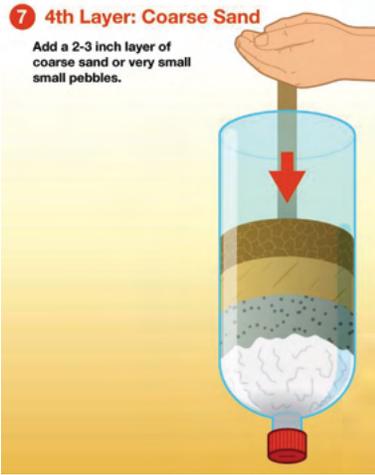
### 6 3rd Layer: Fine Sand

Add a 2-3 inch layer of the finest sand you can find. This and the subsequent layers you will add are to filter out particulates in the water.

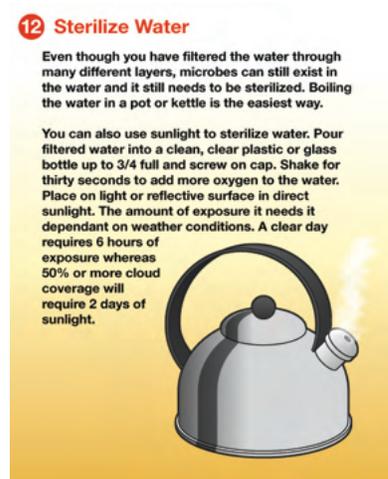
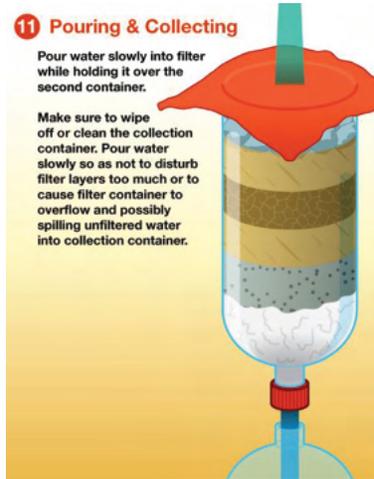
**!** Do not use Highway Department sand, as it can be full of road salt and chemicals.



## Do-It Yourself Water Filter *(continued)*

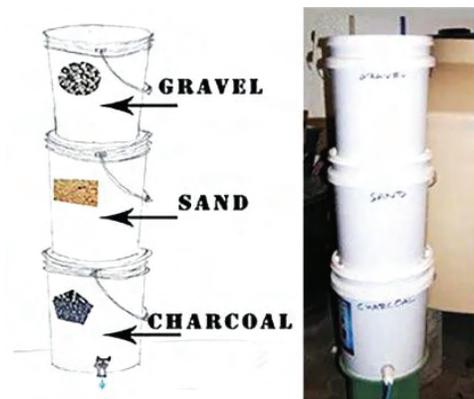


<https://www.h2odistributors.com/pages/info/how-to-make-a-water-filter.asp>



The fundamental concept of this water filter can be expanded to meet a larger demand: putting all layers in a 5-gallon bucket or using a bucket for each layer and connecting them. Photo and excerpt from AskAPrepper.com:

1. The first level consists of gravel to remove larger solids, such as leaves, twigs, bugs and debris that might be in the water.
2. The second layer is sand, which will remove floating and dissolved particles of solids as the water passes through it.
3. At this point, all that is left to be a problem is the microscopic pathogens, which are reduced by over 99 percent by the final layer, that of activated charcoal.

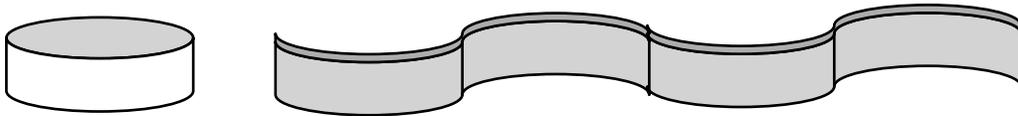




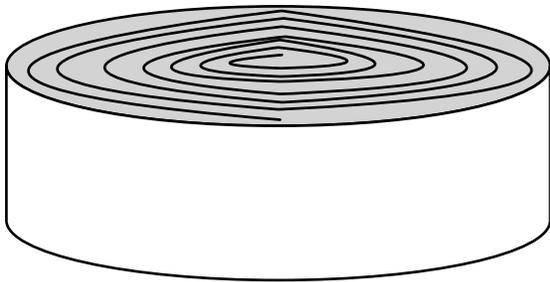
# Do-It-Yourself Emergency Fuel

This emergency cooking fuel in a can is easily assembled with cardboard, small metal cans and cooking oil. It won't completely replace a stove or standard cooktop, but can be used in a pinch to heat liquids and cook small meals, much like a small sterno stove used on hiking expeditions.

**STEP 1:** Cut cardboard strips from a corrugated box to match the height of a clean, empty can. (e.g. - a catfood can).



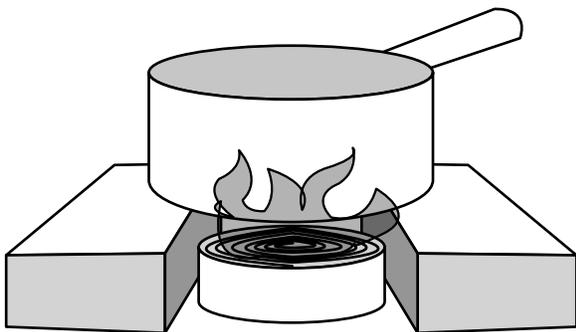
**STEP 2:** Roll up the strips and put in the can.



**STEP 3:** Pour melted wax or cooking oil into the can.



**Step 4:** Put your can on a solid, flame-proof surface and light the cardboard. When the flame is suitable for cooking, put two bricks on either side of the can to support a small pot.

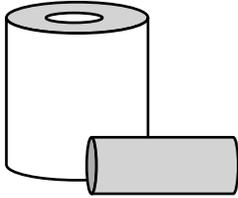


## Do-It-Yourself Emergency Fuel *(continued)*

### BONUS FUEL

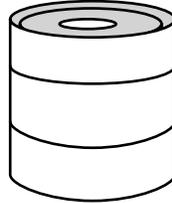
#### STEP 1:

Remove the cardboard tube from a roll of TP.



#### STEP 2:

Put the TP into a clean coffee can.



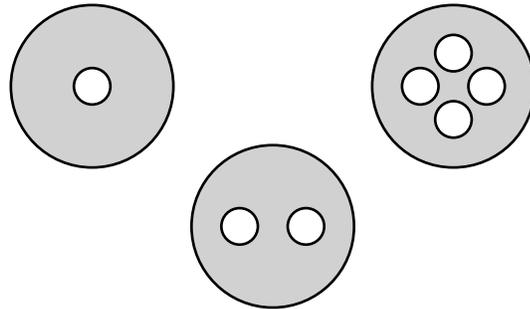
#### STEP 3:

Pour rubbing alcohol on the TP.



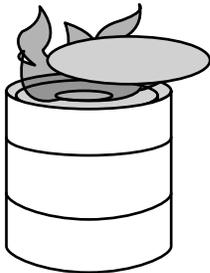
#### STEP 4:

Punch holes into metal lids and use these to control the flame intensity.



**STEP 5:** Place a whole metal lid over the can to extinguish the flame.

*Warning: Never add rubbing alcohol to the flame.*



**FOR ALL EMERGENCIES:** CORAC runs a HAM radio net and Signal groups. If communication goes out for any length of time, meet outside your local Church at 9 a.m. on Saturday mornings if it is safe to do so. Tell friends at Church now in case you can't then. CORAC teams will be out looking for people to gather in and work with.

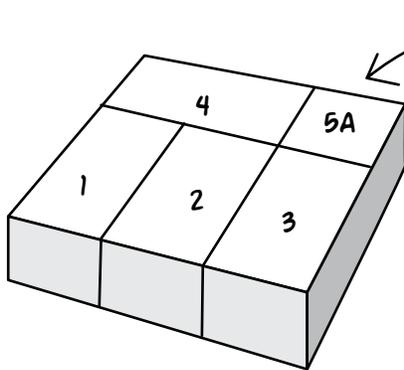




# Do-It-Yourself Rocket Stove

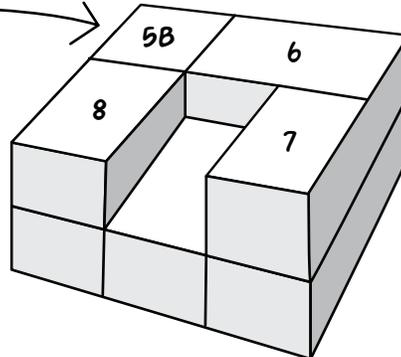
This rocket stove can be built in minutes with 16 bricks (2 are half bricks). It uses a minimal amount of fuel (small sticks, twigs, leaves etc.) to cook full meals with efficient heat funneled directly up under the pan. It is also wind and "light rain" resistant.

**STEP 1:** Lay your brick base.

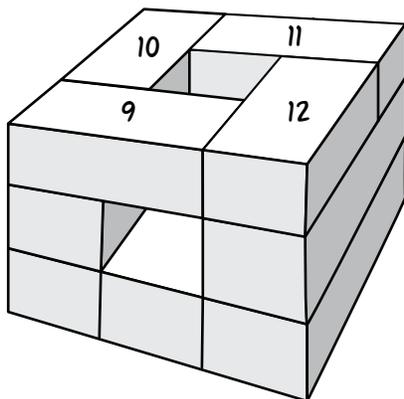


**STEP 2:** Add the 2nd level of bricks.

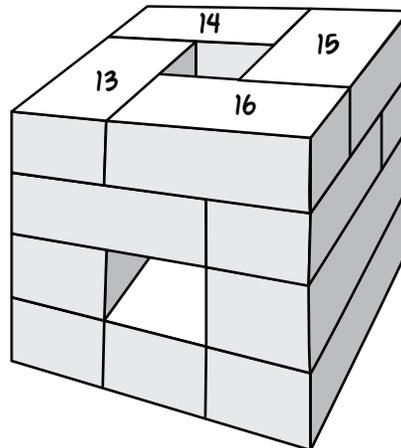
HALF BRICKS



**STEP 3:** Add the 3rd level bricks.

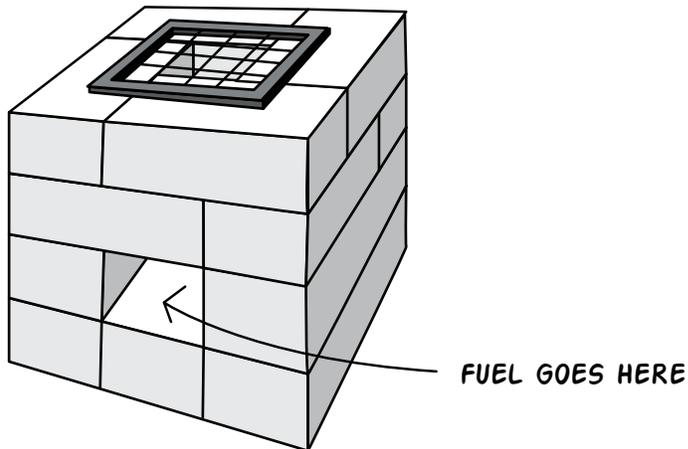


**STEP 4:** Add the top level of bricks.

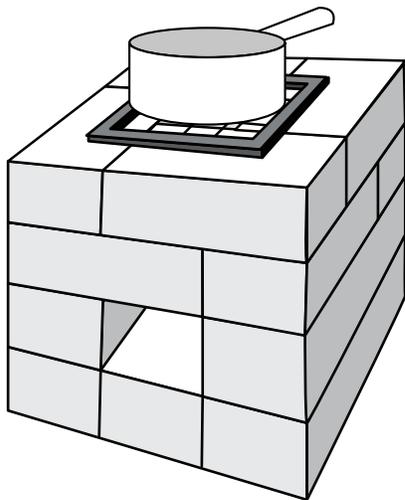


## Do-It-Yourself Rocket Stove *(continued)*

**STEP 5:** Add a sturdy metal grate or screen to cover the hole for your cooking surface.



**STEP 6:** Add kindling, small sticks and twigs to the oven and light your fire for cooking. If you want a longer burn, use a bit harder wood and larger pieces. You can also use charcoal if available.





# Elderly Emergency Prep

## BACKGROUND

These are the critical components to any effective natural disaster preparedness plan.

### 1. Staying Informed

Staying informed is especially important for elderly emergency preparedness. If they don't have cable or a smartphone, there are a number of tactics you can employ to ensure your loved one stays informed:

- Invest in a battery-powered radio (or a hand-cranked radio, if they are physically able) and make sure it's tuned to the right channel so they can stay updated on their own.
- If you live in the area, pay them a visit, or better yet, have them stay at your place.
- If you don't live nearby, reach out to them as soon as you know a storm is on the way, and keep in touch with updates about the storm's path and severity, especially if evacuation orders may fall.
- Contact your senior's support network so you can work together to keep your loved one informed and safe throughout the disaster.

### 2. Packing a Senior Emergency Kit

Your senior's emergency kit, just like yours, should last for a minimum of three days. For seniors, you could consider creating two emergency kits: one for staying at home, and a go-bag designed to travel with your senior if they are required to evacuate. Label them both so that it's clear which is which.

#### A KIT should contain:

- 3 day supplies of non-perishable food and water (1 gallon per person per day)
- Battery-powered radio, plus extra batteries
- Flashlight, plus extra batteries
- First aid kit
- Sanitation and hygiene items
- Matches and candles, stored in a waterproof container
- Extra clothes
- Extra eyeglasses
- Extra batteries for medical supplies like hearing aids or blood sugar monitors

## Elderly Emergency Prep *(continued)*

- Blankets
- Basic kitchen utensils, including a manual can opener
- Multi-purpose tool like a pocket knife
- Cash and coin
- Whistle
- Medications and supplies for medical devices like blood sugar monitors — at least a 7 day supply, ideally more
- Record of medical conditions, allergies, and current medications, stored in a waterproof container
- Pet food and supplies for managing pet waste

### **A GO-TO BAG should contain:**

- Car and house keys
- First aid kit
- Sanitation and hygiene items
- A change of clothes
- Extra eyeglasses
- Extra batteries for medical supplies like hearing aids
- Cash and coin
- Medications and medical devices
- Records of medical devices (including device type and model number), medical conditions, allergies, and current medications, stored in a waterproof bag or container
- Duplicates of important documents such as passports, drivers licenses, social security, wills, deeds, financial statements, and insurance information, stored in a waterproof bag or container

***Make sure your loved one knows where they can find their senior emergency kit and/or go-bag, as well as what supplies are in it.***

**MEDICAL RECORDS.** Your senior should have a copy of medical conditions, allergies, and current medications with them at all times during a natural disaster, whether they choose to stay in their home or are required to evacuate. You should also keep your own copy, especially if you live outside of the flood or danger zone. These records should include:

- Names and dosage amounts for all medications
- Doctors names and locations, including phone numbers
- Pharmacy names and locations, including phone numbers
- Special instructions for care and comfort if your loved one has trouble communicating
- Emergency contact information
- Blood type



## Elderly Emergency Prep *(continued)*

- Duplicates of important documents such as passports, drivers licenses, social security, wills, deeds, financial statements, and insurance information, stored in a waterproof bag or container
- A list of medical devices, including type and model number
- Personal care assistance plan

### **3. Create a Plan now for how you'll handle a disaster.**

When you're creating an emergency plan for your senior, reach out to friends, neighbors, and nearby relatives who can be called upon to lend a hand when disaster hits. Explain your loved one's needs so they know how best to help, and keep a list of current contact information near your loved one's phone so they can reach out when necessary, including local contact numbers for nearby CORAC volunteers.

If your senior needs help with normal daily activities, it might be time to consider assisted living. Find assisted living options near you at [caring.com](https://www.caring.com). If your senior is concerned about their valuable or cherished belongings, such as heirlooms or antique furniture, a reputable shipping company can also help you ship them into storage.

### **4. Staying at home.**

Often, the safest option for seniors is to evacuate, and to evacuate sooner rather than later. If they wait too long, they may be unable to evacuate when the time comes, especially if they require assistance.

If your loved one is unable to evacuate and they have special medical needs, such as an oxygen tank or dialysis machine, make sure their power company knows so their home can be prioritized when power is restored. You may also wish to consider investing in a portable generator to keep these machines running.

### **5. Evacuating.**

The best evacuation option for your senior is to stay with family or friends in the area (or out of the area, if possible). If this option is unavailable, staying in a hotel may be a good alternative.

Weathering the storm in emergency public shelters should be your last resort. Often, these shelters are not equipped for people with special needs; however most coastal areas do have shelters that are capable of handling evacuees with special needs, so do your research ahead of time to find out where these shelters are located. Create a plan for how your senior can get there, especially if they can't drive themselves, and ensure there's a caregiver nearby who can stay with your senior throughout the evacuation.



## Elderly Emergency Prep *(continued)*

If your loved one has special medical needs and your doctor recommends evacuating to a hospital or other medical facility, you will need to arrange for preadmittance prior to evacuation. To do this, you will need to obtain a pre-admission letter from your doctor that says your loved one is to be taken to a specific hospital or nursing home. Make sure your senior has this letter on them when they evacuate..

### 6. Pets

If your loved one has a pet, make sure they are microchipped so they are easier to find if they get separated during the evacuation process. For seniors with pets, staying with other family and friends is most likely their best option, though staying in a hotel that allows pets may be a suitable alternative if there are no family or friends nearby. Public emergency shelters don't allow pets, aside from service animals.

If the option is available to you and your senior, you could also consider boarding their pet.

Research out-of-town options along your planned evacuation route, and be sure to call early to ensure they have room before you drop off their pet. Include vaccination records and other important paperwork, as well as pet care supplies like a leash and an adequate supply of pet food, in your senior's emergency kit.

### 7. Keeping seniors calm.

When you have time to prepare for how you'll handle a natural disaster, you and your senior also have time to worry—whether or not a storm is on the way. Creating a plan ahead of time can help everyone feel ready to weather the storm, which reduces stress as well as the likelihood that your senior will feel isolated if and when disaster does strike. If a storm is on the way, there are a couple of things you can do to keep your seniors calm:

- Stay in touch. Give them a call 2 or 3 times a day in the days leading up to the storm, or more depending on the severity of the event.
- Maintain regular routines, meal patterns, and sleep schedules as much as possible.
- Avoid 24 hour news programs about the impending disaster.
- Seek out positive activities to pass the time, such as games or other things they enjoy  
If they are able, your senior could seek out volunteer activities and provide assistance to others. Finding ways to contribute often helps to alleviate some of the feelings of helplessness.





# Emergency Farm & Household Animal Care

## Safe Environment for You and the Animal

- Clean environment.
- Separate from other animals.
- Have crates available or a stall or separate area.

## Wound Care Supplies

- Injury care with Homeopathics:
  - Have all remedies prepped in a spray bottle or dropper bottle. Most do not like the sound of the spray so being ready to be able to drop it in or put into water dishes.
  - Arnica – soft tissue inflammation, bruises.
  - Aconite- shock /trauma. Ledum-punctures.
  - Calendula tincture –all wounds.
- Iodine.
- Vet Rex products.
- Molasses / glucose solution (injectable) / beet feed/ calcium (injectable)/ nutrient drench.
- Blue cote/ pine tar/ – chicken and all animal wounds, keeps them from worrying it.
- Bandages/wraps/tape/splint (all animals).
- Drencher, various sized depending on the animals (goats, pigs, sheep, cattle).
- Diatomaceous earth – for fleas/mites, sprinkle on food and dust on the animal.
- Minerals – free choice for animals.
- Paw cream for LGDs. For both Cold and Hot weather.

## Using Homeopathy With Animals – Examples

- Into their food and water sources.
- You can repertorize for animals.
- Stay with the lower level doses like 6c, 30c, and maybe 200 C.
- Examples:
  - Drooling dog helped by putting Merc sol in his water.
  - Aconite to them in stressful situations, like a vet visit or anything else.
  - Ignatia if there's going to be fireworks.

## Worms/Parasites

- Lands of Havilah, <https://landofhavilahfarm.com/loh/> -- they have a parasite formula for sheep/goats/cattle and then another one for equine and camels.
- Poisoning: Charcoal for all animals especially pigs, Homeopathic Arsenicum.

## Emergency Farm & Household Animal Care *(continued)*

### General Health

- Apple cider vinegar, a 1/4 in a large waterer – all animals.
- New Chicks : Chick Gaterade: ACV, Garlic, Honey, Water, Salt, Homeopathic Bioplasma (cell salts) also for anytime an animal is not doing well.
- Essential Oils – many that can be used on animals but I really don't know them very well. A local milk cow owner I know uses Paragize by young Living.

### Wound Care Supplies

- **Dogs** – guardian - best to do a raw diet, but we also add some kibble working to get that out – using bones and meat from farm raised animals. Milk, eggs, and scraps.
- **Cats** – Best also on raw diet, working on supplementing canned mackerel instead of cat food.
- **Fish** – we keep in troughs for cattle, generally survive all weather, sometimes fish food is needed during times of low algae growth.
- **Chickens** – Feed soy/corn free, Poultry balancer mineral (azure), fresh water.
  - Soy and corn free product so you are not giving GMO or pesticides to the animals that you want to.
  - Soaking your feed for chickens makes it go longer and makes the nutrients more available.
  - Also they love maggots, some people raise soldier flies for this.
  - And setting up a rotting chicken carcass in a bucket is another way.
- **Turkeys** - Have a higher protein needs and are dumb so need protection.
- **Geese/Ducks** – Also need higher protein and extra protection esp from arial predator.
- **Guinea Hens** – Partridge family so need more protein as keets will keep your tick population down.
- **Sheep** (hair) – grass and salt, hooves, and deworming periodically, bells for protection.
- **Goat** – grass and salt, deworming periodically, dairy feed for milking goats, bells for protection.
- **Pig** – Heritage breed Kune Kune, grass, salt, scraps , hog feed for mamas.
- **Donkey** – Guardian- Basic hoof, coat care, food is grass and plains, water source, and salt.
- **Beef Cattle** – grass, salt , water, pest control: flies, worms.
- **Dairy Cattle** - grass, salt , water, pest control: fly, worms, additional dairy feed for milk production. Alfalfa pellets, oats. Tree Hay.
- **Horses** – currently none.
- **Alpaca/Lamas** – currently none.
- **Rabbits** – also none but they also would benefit from the tree hay. They are susceptible to heat and cold fluctuations. Joel Salatin has some great chicken and Rabbit combos where the rabbits are above the chickens, generates garden compost quickly.



## Emergency Farm & Household Animal Care *(continued)*

### Tree Hay

- This is using bushes and shrubs to supplement ruminant animals diet for hay. Remarkably works very well. Can also look up as Silvapasture. We are working with Willows that grow well in our area. Mullberries and poplar are also very good. Or other edible trees (our goats seem to love our crepe myrtles).

### Milk Cow Supplies

- Mastitis Milk cow home test indicators.
- California mastitis test.
- New country organics.com- Thorivin Kelp, really good for all nutritional needs.
- Redmond salt blocks, also with garlic – local feed stores and online.
- <https://synergyanimalproducts.com/>
- Soy and corn free product so you are not giving GMO or pesticides to the animals that you want to.
- Soaking your feed for chickens makes it go longer and makes the nutrients more available.
- Books (Keeping a Family Cow, The Family Cow Handbook, Story's Guide to Dairy Cows, Story's Guide to Beef Cattle, Homeopathy for the Herd; C. Edgar Sheaffer, VMD)

### List of Books For Animals

- Homeopathic Care For Cats and Dogs, Don Hamilton, DVM
- Dr. Pitcairn's Complete Guide To Natural Health For Dogs and Cats
- Dogs: Homeopathic Remedies, George Macleod, MRCVS, DVSM
- Homeopathic First Aid for Animals, Kaetheryn Walker
- Natural Health Care for Your Bird, Bernard Derenkamp
- Merk Manual  
New World Veterinary Repertory, Reichard H Pitcairn & Wendy Jenson
- The Poultry Doctor, Boericke & Tafel
- Homeopathy for the Herd, C. Edgar Sheaffer, VMD
- <https://learning.wholehealthag.org/books-publications>
- <https://learning.wholehealthag.org/learning-hub>
- <https://www.biblio.com/book/manual-veterinary-homeopathy-comprising-diseases-horses/d/1524498040>
- <https://homeopathic.com/product/homeopathy-for-plants-2/>



## Emergency Farm & Household Animal Care *(continued)*

### Resources

- Chicken/Sheep/LGD needs: <https://www.premier1supplies.com/>
- Salt for people and animals: <https://redmondagriculture.com/products/natural-mineral-salt-block>
- Kelp and feed: <https://www.newcountryorganics.com/>
- Pet RX and first aid supplies: <https://www.jefferspet.com/>
- <https://synergyanimalproducts.com/>
- <https://secureservercdn.net/198.71.233.45/m5s.440.myftpupload.com/wp-content/uploads/2019/12/veterinary-manual-humphreys.pdf>
- Ellen bench species specific remedy combos: <https://remedianimalsolutions.com/>
- All animal feeds, and also minerals, poultry supplements: <https://azurestandard.com> Lots of trees and shrubs, bareroot for very good prices: <https://coldstreamfarm.com>
- Justin Rhodes – Abundant Permaculture - I really love this guy's advice.
  - <https://kit.co/JustinRhodes/family-milk-cow-supplies>
  - [https://www.youtube.com/watch?v=ftxBgKS\\_F2U](https://www.youtube.com/watch?v=ftxBgKS_F2U)
  - <https://abundantpermaculture.com/Mobile-chicken-coop/>
  - [https://www.youtube.com/watch?v=gIPqGyhX7\\_k](https://www.youtube.com/watch?v=gIPqGyhX7_k) – feeding 30 chickens for \$1.25/day)
- Joel Salatin – Polyfacefarms.com: <https://www.youtube.com/watch?v=Q0PYehE3nO8> – chicken tractor BIG
- Rootsandrefuge.com
- PraireHomestead.com
- Sowtheland - <https://www.youtube.com> > c > SowtheLand
- <https://www.weedemandreap.com>
- [https://www.amazon.com/Mushers-Secret-Pet-Protection-200-Gram/dp/B0002XIZXY/ref=sr\\_1\\_1\\_sspa?crd=8BIYRIUKP3AX&keywords=livestock+guardian+dog+paw+cream&qid=1694925860&prefix=live+stock+guardian+dog+cream%2Caps%2C374&sr=8-1-spons&sp\\_csd=d2lkZ2V0TmFtZT1zcF9hdGY&pvc=1](https://www.amazon.com/Mushers-Secret-Pet-Protection-200-Gram/dp/B0002XIZXY/ref=sr_1_1_sspa?crd=8BIYRIUKP3AX&keywords=livestock+guardian+dog+paw+cream&qid=1694925860&prefix=live+stock+guardian+dog+cream%2Caps%2C374&sr=8-1-spons&sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&pvc=1)





# Emergency/Temporary Roof Repair



Trap is secure (tucked under) the asphalt shingles higher on the elevation and with cap nails around the entire perimeter. Note that water cannot flow over the damaged section and is thus watertight until permanent repairs can be made.

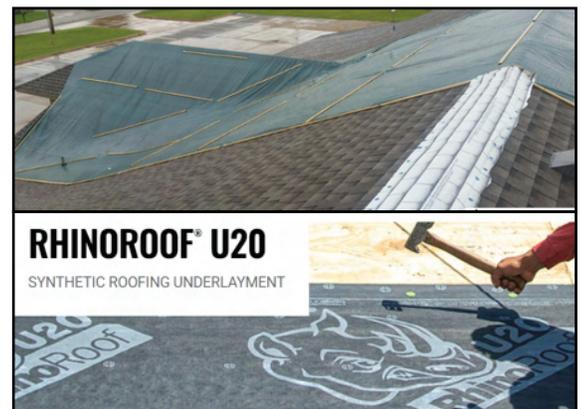
How to make an emergency/temporary roof repair on the exterior of your home:

1. Be sure you are physically capable of reaching required elevation heights or climbing/walking on roof slopes; seek help if not comfortable.
  - a. All subsequent steps would ideally not be conducted during a weather event (Avoid tarping a roof during a storm while it's windy or raining).
2. Assess the damage on the roof and around the entirety of the home exterior and take measurements if necessary.
3. Prepare your temporary materials: spare siding, roofing, tarp, millimeter plastic sheets, screws, nails, tape, caulking, etc.
4. Secure the patch and make plans to secure permanent repairs with the help of an experienced person, neighbor, friends, contractor or professional.
  - a. Consider patches good for 90 days or less without requiring additional re-work.



Please consider knowing what type of materials are on your home and how to repair the exterior in a way to maintain a watertight and weather resistant barrier from all interior elements. Helpful repair items to have access to include:

Exterior Nails (cap nails 1 - 1 ½ inches long, roofing nails 1 ¼ - 2 ½ inches long), exterior screws  (metal roofing screws with rubber grommets and metal washers 1 ¾ - 2 ½ inches long), hammer (I like smooth faced), tarps (at least 5 mil thick), synthetic roofing felt (15lbs), Ice and water guard (roof underlayment), house wrap (siding product similar to roof felt), tape for house wrap, staples (3/8 inch - 5/8 inch) and staple gun to match the staples that you have, exterior caulking (roof or asphalt rated, window door trim application), caulk gun to apply tube caulking, pry bar, lumber (furring strips, 2"x4")





# Emergency Toilet Guide

## Three Elements of Staying Healthy

To stay healthy after a disaster, you will need plenty of water and good sanitation practices.

**#1 Water** - Clean water is an essential resource especially after a disaster or crisis, e.g., earthquakes, hurricanes; not only for drinking to stay healthy but needed for cooking, hygiene, wound care, etc.

**#2 Hand Washing** - Proper sanitation is essential. Organize handwashing stations with clean water, soap, catch basin, nail brush and towel. In an emergency kit include alcohol-based hand sanitizers of at least 60% concentration. Gray water can be used to water trees, etc.

**#3 Sewage Water Treatment** - Even if you keep your space and your body clean, your urine and feces could still make you (and others) sick. Keep reading to find out how to safely contain, store, and eventually dispose of your urine and feces.

## METHOD 1

### The Twin Bucket System

The Twin Bucket System was developed in Christchurch, New Zealand after the February 2011 earthquake. The system meets the criteria of being simple, cheap and effective. The key to this method is separating urine and feces. This lessens volume and odor, making bucket contents safer and easier to store and dispose of. This method is ideal for dense urban areas with limited open space and locations with a high-water table. Caution! It's very hard to keep surfaces clean without running water. When using emergency toilets, it's important not to touch human feces or let it touch other objects. Any surface that may come into contact with feces (such as a toilet seat) should be made of a non-porous, non-absorbent material that can be easily disinfected.

#### Materials:

- Two sturdy plastic (five or six gallon) buckets. One marked URINE or #1 and one marked FECES or #2.
- A toilet seat. You can adapt a regular toilet seat or buy a seat that is designed for use with buckets (available at most camping stores, emergency supply retailers, etc.). If you can, purchase two toilet seats – many people prefer to sit when urinating. **Do not use a pool noodle! They are absorbent and porous.** They are impossible to fully clean, which increases the risk of spreading disease.
- Layering material. Carbon-based materials work best. It should be lightweight, dry, and organic. The goal is to absorb moisture, reduce odor, and deter flies. You'll need about a handful to cover each feces deposit. Examples: sawdust, shredded paper, bark chips (avoid cedar), dry leaves, dry grass clippings, peat moss, toilet paper, hamster bedding, etc.
- A roll or box of heavy-duty plastic garbage bags. 13-gallon size, 0.9 mil or thicker.

#### Separating Urine and Feces:

Urine has volume. Feces has pathogens (bacteria, viruses, and other microorganisms that can cause disease). When you mix urine and feces together, you get a large volume of pathogens. It also produces

## Emergency Toilet Guide *(continued)*

a terrible odor. If you keep them separate and layer the feces with carbon-based materials, the feces is able to dry out and reduce to a smaller volume, and the urine can be disposed of easily and harmlessly.

### Using the Urine Bucket:

- Deposit your urine in the urine #1 bucket, but always put your toilet paper in the feces #2 bucket.
- Dilute urine with water (if possible), and spread it on a permeable surface, such as your lawn, garden, or the ground. Local governments may develop alternative urine collection sites in order to avoid watertable contamination.

### Using the Feces Bucket:

- Line your feces bucket with a sturdy trash bag.
- When using the feces bucket, it's okay to put toilet paper in the bucket.
- After each use, cover the surface of the feces with a carbon-based material (see the materials list above). This will help reduce odors and minimize the attraction of flies.
- Do not put an airtight lid on the bucket. Allowing some air flow will help the feces dry out and reduce in volume. Do not fill the bucket more than halfway full.
- Once you've tied the top of the bag, double-bag it to ensure the contents don't leak.
- Store your feces bags in a safe location away from food and water, kids, pets, flies, rats, etc.
- Do keep feces bags, animal waste, and soiled diapers together and separate from other garbage. Do not put feces bags in your regular garbage, yard debris, or recycling bins. Do not dig a hole and bury your feces bags.
- Take care when using the feces bucket and bagging the contents. Afterwards, always wash your hands with soap and water or hand sanitizer.
- Consider talking with neighbors about shared collection sites.

## Method 2

### Latrines (Pit Tioletts)

#### Instructions:

1. To minimize the number of holes you need to dig, talk with your neighbors about using shared pits, and come to an agreement about the location of pits.
2. Dig a hole, and save the soil that you removed.
  - a. Location: It should be at least 10 feet from your residence, 10 feet from your property line, and 100 feet from creeks and wells.
  - b. Depth: Dig down at least two feet. Four feet is optimal, but many areas have a high-water table. If you see water, stop!
  - c. Width: The hole should be about two feet wide.
3. After each use, cover your feces and urine with dirt.
4. When filled to the one-foot level, consider the latrine full. Allow space to cover it with at least an additional foot of dirt.
5. Mark the location of each latrine so they can be treated during disaster recovery.
6. Dig a new hole as needed.
7. Used toilet paper goes into the latrine, but nothing else. Do not bury plastic bags.





# Enzyme Cleaner

## Ingredients

- 1/2 cup (100 g) brown or white sugar
- 1 teaspoon (3 g) yeast
- 4 1/4 cups (1 L) lukewarm water
- 2 cups (300 g) fresh citrus peel

**Wash and chop the citrus peel.** Rinse the citrus peel under running water and scrub the outside with a vegetable brush to remove dirt and impurities. Pat the peels dry with a clean towel, and carefully chop the peels into half-inch (1.3-cm) cubes. The pieces have to be small enough to fit into the opening of a pop bottle.

- You can use a variety or mixture of citrus peels to make your homemade enzyme cleaner, including lemon, lime, grapefruit, and orange.
- It's important to use fresh citrus peels that aren't dried out or rotting. Dried peels won't contain enough citrus oil for cleaning, and rotten ones will cause the mixture to mold.

**Combine the ingredients.** Insert a wide-mouthed funnel into the mouth of a clean 2-liter (67.6-ounce) pop bottle. Pour the citrus peel chunks in a handful at a time until they've all been added to the bottle. Add the sugar, yeast, and water. Remove the funnel and screw the cap on tightly. Shake the bottle vigorously for a few minutes, until all the sugar is dissolved.

- It's important to use a pop bottle for this recipe, because they're designed to hold liquids that are under pressure.

**Vent the gas multiple times a day.** After the sugar has dissolved, unscrew the cap to vent any pressure that's built up inside the bottle. Screw the cap back on. Repeat this process at least three times a day for two weeks to prevent the bottle from exploding.

- After two weeks, reduce the venting to once a day, as most of the sugar will have been converted, so less carbon dioxide will be produced. [2]
- As the yeast eats the sugar in the mixture, it will convert the sugar to alcohol and carbon dioxide. This gas will build up in the bottle when the lid is on.
- It's important to leave the cap on and tight during this process, because the yeast needs an oxygen-free environment to ferment properly. Oxygen will also allow bacteria and mold to grow in the mixture.

**Place the bottle somewhere warm to ferment.** The optimum temperature for yeast fermentation is 95 F (35 C), so you have to keep the mixture somewhere warm while it ferments. [3] A good place for the mixture is on top of a refrigerator.

- The yeast will take about two weeks to ferment, but you can leave the cleaning mixture for up to three months for a stronger solution.

## Enzyme Cleaner *(continued)*

**Shake daily while the mixture ferments.** Over time, the solids in the mixture will sink to the bottom. Every day, vent the gasses, screw the lid back on, and shake the mixture gently to stir up the contents. Vent the gas again before screwing the lid back on.

- Continue swirling daily until you decide that the mixture is ready.

**Store in an airtight container.** Transfer the strained cleaning liquid to an airtight container for storage. Exposing the mixture to oxygen will cause it to lose its potency, and it won't clean as effectively. [4]

- To make ready-to-use cleaner, store small amounts of the cleaner in a spray bottle and keep the rest in an airtight container.

**Mix a diluted cleaner for delicate jobs.** In a spray bottle or other container, mix one part enzyme cleaner with 20 parts water. Shake or stir to combine. This mixture can be used to wash cars, wash floors, and for other jobs around the house that don't require a super-powered cleaner.

**Make an all-purpose cleaner.** Measure 1/2 cup (118 ml) of enzyme cleaner and transfer it to a clean spray bottle. Mix in 4 1/4 cups (1 L) of water. Screw on the spray nozzle and shake the mixture to combine the water and cleaner. Shake before each use.

- This all-purpose cleaner can be used on all surfaces to clean bathrooms, carpets, kitchens, for minor stains, and other cleaning needs.

**Mix with vinegar for an even stronger cleaner.** For a stronger all-purpose cleaner, mix one part apple cider vinegar with four parts homemade enzyme cleaner. Transfer the mixture to a spray bottle and use to clean kitchens, bathrooms, and tough stains.

**Use the cleaner undiluted for tough jobs.** For tough stains, caked on grime, odors, and built-up dirt, apply the homemade enzyme cleaner directly to the affected surface. Let the cleaner sit for a couple minutes, and then wipe the area with a damp sponge or cloth.

- Enzyme cleaners are great for cutting grease, and this cleaner can be used undiluted around the kitchen and the garage.
- You can also try this method for removing scale and lime buildup on things like dishwashers, kettles, shower heads, and other appliances and fixtures.

**Wash laundry with it.** You can use the enzyme cleaner as a replacement for laundry soap or as a booster that you add to your regular detergent. Add 1/4 cup (59 ml) of enzyme cleaner to your washing machine drum or detergent compartment. Set and run your washing machine as normal.





# Essential Alternative Animal Feeds

## Poultry

- Free range or modified free range
- Whole grains-grown your own, wheat, oats, barley, some corn
- Sprout whole grains in the winter
- Weeds - lamb's quarter, pigweed, comfrey, chickweed, alfalfa, chard, clover, dandelion greens, cress, grass, sunflower seeds, squash, pumpkins, vegetable kitchen scraps, fall garden cleanup
- Table and Kitchen scraps
- Slugs, snails, and other bugs

## Ducks/Geese

- Similar to chickens
- Different - foragers, bugs of all sorts, grass, weeds, corn, non-medicated rabbit pellets

## Cows

- Hay, pasture (1/8 acre per cow), legumes, peas, corn silage, mangel beets, sugar beet tailings, root vegetables, carrots, crushed beans, clover, alfalfa, lavender, comfrey, kale
- Trees-willow, mulberry, poplar
- Wintering - for 1 cow, approximately 2 tons of alfalfa hay (need both roughage and protein) alfalfa provides both

## Goats

- Some brush, grass, variety of weeds/herbs
- Vegetables, grains, mangel beets, corn dodder, carrot tops, lettuce, second-cutting alfalfa, melon rinds, roses bushes, apple branches, squash
- Wintering - for 1 goat, 6 - 9 bales of good second cutting alfalfa, some vegetables, grain rations, brush per goat

## Sheep

- Grass
- Enriching pasture add-alfalfa, orchard grass, sweet clover, dandelion, burdock, just about anything they can reach, and timothy
- Wintering glean corn harvested fields, root vegetables, hay (10 bales alfalfa) & grain ration - 75 pounds per sheep

*Above material: Carla Emery's book, The Encyclopedia of Country Living, 10th edition, 2008.*

## Rabbits

- Prefer clover-hay, but good alfalfa, vegetable and fruit cuttings from the kitchen, vegetable tops, salad leftovers, lawn cuttings

## Pigs

- Eat just about anything, need a balance of protein and carbs, will consume 800-1000 pounds of feed to reach market weight



# Feeding Cooked Eggs to Chickens

**[Mick]** Just yesterday, my son and a friend of mine cracked open some eggs that I waterglassed in March 2020 or March 2021. (I've been too afraid to crack them, so they have just sat until somebody who wasn't chicken decided to evaluate them). The yolks were runny and the whites had browned some; but they were NOT rotten. My friend took all of them home (four 5-gallon buckets) to cook and feed to her chickens over the next few weeks. It's unbelievable to me that the waterglassed eggs are at least 2 1/2 years old (and maybe 3 1/2, depending on which bucket she opened), but the eggs are still good enough for animal feed.

**[Jacquie]** I would be afraid to give eggs, cooked or uncooked, to my chickens. I would not want to get them starting to like their own eggs! As I understand it, once they start eating their own eggs it is hard, if not impossible, to get them to stop. I don't know. Anyone else have input on that?

**[Mick]** Good question, Jacquie; and I have heard of many people who have that concern. The concern would certainly be valid if one were thinking of giving raw eggs to his chickens; they would definitely develop an egg-eating habit that would be difficult if not impossible to break. However, cooking the eggs chemically changes them so much that the chickens don't "recognize" them as eggs. We have fed scrambled eggs to our chickens for years and have never had a problem with them later eating their freshly laid eggs. Below are two good articles which touch on the subject:

- <https://theheartychickenhouse.com/2019/06/03/can-i-feed-eggs-to-my-chickens/>
- <https://the-chicken-chick.com/5-healthy-treats-for-chickens-and-3-2/>



# Food Storage Inventory Checklist

ITEM	TOTAL AMT WANTED	INVENTORY DESCRIPTION: Size, weight, container, etc.	QTY STORED	IN	OUT
Wheat					
Oats					
Corn					
Rye					
Rice (white)					
Pasta					
Flour					

AMT STILL NEEDED:

## FOOD STORAGE INVENTORY

CATEGORY: LEGUMES

ITEM	TOTAL AMT DESIRED	INVENTORY DESCRIPTION: Size, weight, container, etc.	QTY STORED	IN	OUT
Pinto bean					
Black bean					
White bean					
Split peas					
Lentils					
Garbanzo					
Soup mix					

## Food Storage Inventory Checklist *(continued)*

<i>Nuts (limited food storage life)</i>					

**AMT STILL NEEDED:**

### FOOD STORAGE INVENTORY

**CATEGORY: SUGARS**

ITEM	AMT NEEDED	INVENTORY DESCRIPTION: <i>Size, weight, container, etc.</i>	QTY STORED	IN	OUT
<b>SUGARS</b>					
<i>White sugar</i>					
<i>Brown sugar</i>					
<i>Honey</i>					
<i>Syrup</i>					
<i>Jellos</i>					

**AMT STILL NEEDED:**

### FOOD STORAGE INVENTORY

**CATEGORY: DAIRY**

ITEM	AMT NEEDED	INVENTORY DESCRIPTION: <i>Size, weight, container, etc.</i>	QTY STORED	IN	OUT
<b>DAIRY</b>					
<i>Milk</i>					
<i>Milk</i>					
<i>Butter</i>					
<i>Cheese</i>					



## Food Storage Inventory Checklist *(continued)*

<i>Pudding</i>					

**AMT STILL NEEDED:**

**FOOD STORAGE INVENTORY**  
**VEGETABLES**

**CATEGORY:**

ITEM	TOTAL AMT DESIRED	INVENTORY DESCRIPTION: <i>Size, weight, container, etc.</i>	QTY STORED	IN	OUT
<i>Carrots</i>					
<i>Peas</i>					
<i>Onion</i>					
<i>Potatoes</i>					
<i>Potatoes</i>					
<i>Broccoli</i>					
<i>Tomato powder</i>					
<i>Mushrooms</i>					
<i>Celery</i>					
<i>Red/green peppers</i>					
<i>Corn</i>					
<i>Green beans</i>					



## Food Storage Inventory Checklist *(continued)*

<i>Tomatoes</i>					
<i>Tom paste Or sauce</i>					
<i>Green Chiles</i>					

**AMT STILL NEEDED:**

### FOOD STORAGE INVENTORY

**CATEGORY: SUGARS**

ITEM	AMT NEEDED	INVENTORY DESCRIPTION: <i>Size, weight, container, etc.</i>	QTY STORED	IN	OUT
<b>SUGARS</b>					
<i>White</i>					
<i>Brown</i>					
<i>Honey</i>					
<i>Syrup</i>					
<i>Jellos</i>					

**AMT STILL NEEDED:**

### FOOD STORAGE INVENTORY

**CATEGORY: DAIRY**

ITEM	AMT NEEDED	INVENTORY DESCRIPTION: <i>Size, weight, container, etc.</i>	QTY STORED	IN	OUT
<b>DAIRY</b>					



## Food Storage Inventory Checklist *(continued)*

<i>Milk</i>					
<i>Butter</i>					
<i>Cheese</i>					
<i>Pudding</i>					

**AMT STILL NEEDED:**

### FOOD STORAGE INVENTORY

CATEGORY: **FRUIT**

ITEMS	TOTAL AMT DESIRED	INVENTORY DESCRIPTION: <i>Size, weight, container, etc.</i>	QTY STORED	IN	OUT
<b>FRUIT</b>					
<i>Apples</i>					
<i>Applesauce</i>					
<i>Bananas</i>					
<i>Oranges</i>					
<i>Mango</i>					
<i>Peaches</i>					
<i>Pears</i>					



## Food Storage Inventory Checklist *(continued)*

<i>Cherries</i>					
<i>Pineapple</i>					

**AMT STILL NEEDED:**

### FOOD STORAGE INVENTORY

**CATEGORY: MEATS**

ITEM	AMT NEEDED	INVENTORY DESCRIPTION: <i>Size, weight, container, etc.</i>	QTY STORED	IN	OUT
<b>MEATS</b>					

**AMT STILL NEEDED:**

### FOOD STORAGE INVENTORY

**CATEGORY:**

#### MISCELLANEOUS

ITEMS	TOTAL AMT DESIRED	INVENTORY DESCRIPTION: <i>Size, weight, container, etc.</i>	QTY STORED	IN	OUT
<b>FATS</b>					
<i>Butter</i>					
<i>Olive Oil</i>					
<i>Shortening</i>					
<i>Veg. oil</i>					



## Food Storage Inventory Checklist *(continued)*

<i>LEAVENING</i>					
<i>Yeast</i>					
<i>Baking powder</i>					
<i>Baking soda</i>					
<i>Dry eggs</i>					

*AMT STILL NEEDED:*





# Foraging Acorns

Acorns are an abundant source of edible nutrition – rich in fats, carbohydrates and proteins. As a survival food, they were a crucial food source for indigenous cultures especially in times of scarcity due to their availability and nutritional value. Some anthropological studies even suggest that acorns have been consumed more than wheat, rice and corn combined throughout human history.

## A Mini Guide to Harvesting & Preparation:

**Harvest.** First, know your oaks. Bur oak and other white oaks are preferred by many foragers because they are the least bitter, while red oaks have more bitter tastings tannins. To collect the best acorns at the ideal time, wait for the heavy drop in late Summer to early Fall. Check for little holes in the nut and discard these because they have been infiltrated by vermin.

**Shell:** Let your acorns dry for at least a week, then crack them open to reveal the nut inside. Cracking them open can be a bit tricky, but nothing a decent hammer and a little practice can't resolve.

**Grind:** Grind the dried nut 'meats' into a fine meal.

**Leach:** Soak the ground acorn meal in water, changing the water frequently to remove bitter tannins so it's more palatable.

**Cook:** Use your leached acorn meal as a flour substitute in various dishes such as bread, cookies and porridge. (*Sample acorn pancake recipe below.*)

**Storage:** Acorns can be stored for several years if processed and stored correctly to provide a long-term source of food. To store whole acorns, dry them in their shells in direct sunlight for 2 - 5 days or in a 175-degree oven for 20 minutes. Be sure to keep the oven door slightly ajar so that moisture can escape. Make sure to get them very dry and store them in their shells because the tannin is a natural preservative. Put the acorns in large buckets with airtight lids.



## Foraging Acorns *(continued)*

### Acorn Pancake Recipe

#### Ingredients:

- 1 cup of wheat flour
- 1 cup of strained acorn meal
- 2 teaspoons of baking powder
- 1 teaspoon of baking soda
- 1/2 teaspoon of salt
- 2 tablespoons of sugar
- 2 eggs
- 4 tablespoons of butter, melted
- 1 1/2 cups of buttermilk

#### Preparation:

1. Mix the dry ingredients (flour, baking powder, baking soda, salt, and sugar) with a whisk to combine.
2. In a separate bowl, whisk the two eggs, melted butter, and buttermilk. Add the acorn meal and whisk to combine.
3. Add the wet ingredients to the dry and stir gently, just to combine.
4. Cook your pancakes on a hot griddle until they are golden brown on both sides, then top them with homemade butter and homemade syrup!





# Foraging the Sonoran Desert 101

## BACKGROUND

In a serious crisis scenario, the supply chain may be disrupted or completely cut off. That includes your neighborhood supermarket store shelves which can be stripped in as little as 24 -72 hours. In a short term emergency, you can always rely on the provisions you have on hand until they run out. For longer term emergencies (e.g. - societal collapse) you should be prepared to forage from God's natural pantry to augment or even replace your normal store bought diet. Not to worry. Not only is God generous, we have been hard wired to forage since the dawn of mankind.



## REGIONAL CONSIDERATIONS

Get to know the lay of your land. This handout covers the Sonoran Desert area of the U.S., which may differ wildly from your area. Hopefully it can serve as a template for others to explore and compile area specific guides for each unique area.

## BE PREPARED AND STAY SAFE

There are few things more enjoyable than exploring nature, but be advised that it can be much more challenging than a simple walk in the park. Whether you're new to foraging or a seasoned pro, it's always prudent to adhere to some basic rules of any wilderness trek.

- Ask a pro/guide for help if you're just getting started (don't go it alone!)
- Know the lay of the land and be aware of any potential challenges you may encounter on the way (e.g. - rattlesnakes, bears, swamps, poison ivy, steep terrain, wild dogs, etc.)
- Dress appropriately and carry some basic survival items (e.g. - plenty of water, food, lighter, gloves, knife... the kind of sensible stuff you'll need or want in an emergency)
- Know how to identify plants by procuring a decent guidebook for your area
- Know what you're harvesting, don't pick the roots and only take what you need so you don't leave a potential patch unable to replenish
- Only pick from clean, uncontaminated areas
- Get permission on private land, and know the existing laws for public lands
- Leave no trace of your visit
- Learn how to preserve and prepare what you harvest (waste not, want not!)

## Foraging in the Sonoran Desert 101 *(continued)*

### MESQUITE TREES

There are three mesquite trees native to the Sonoran Desert that produce abundant legume pods in the dry, hot summer months. All varieties are edible.

- Found throughout Arizona washes, bottom lands and drier slopes up to 4,500 ft. elevation
- Gather the tan pods in mid to late summer while they are still attached to the tree
- Once the pods become dry and brittle, they can be ground into a coarse gluten free flour that can be used to make high protein gluten free cookies, mesquite and wheat sourdough bread, mesquite tortillas, or simply added to other flours
- The clear sap and inner red bark from the tree can be used to make a tea blend to help with soar throats and stomach aches

Velvet Mesquite



Screwbean Mesquite



Honey Mesquite



Ironwood



### IRONWOOD TREES

These trees are easy to spot because they're usually the tallest trees in the desert and they have a grayish bark.

- Found throughout Arizona in the lower elevations up to 3,500 ft. in basins, valleys and drainages
- Gather the beige pods in early summer months of May and June while they are still on the tree
- Steam or boil for 15-30 minutes to remove the bitterness or dry and store to be ground for flour
- When the pods are green, the mild pea flavored legumes can be harvested and eaten raw in small quantities because they are high in phylates



## Foraging in the Sonoran Desert 101 *(continued)*

### PALO VERDE TREES

There are two palo verde trees native to the Sonoran Desert that produce abundant legume pods in the dry, hot summer months. Both varieties are edible.

- Found throughout Arizona growing among ironwood trees and saguaros in the lower desert flats, rocky hillsides and foothills
- Gather the raw yellow edible flowers that bloom mid-April through May to enjoy their pea-like and slightly sweet flavor for salads or to simply munch on
- Harvest the green pods during the dry summer months of mid-May to June and soak the seeds as needed to remove the bitter taste
- Blanch the pods to store, remove the seeds and freeze for later use
- The pods can also be harvested from the tree once they are dry, brown and brittle right before the start of the late summer monsoon season
- These ripe seeds can be soaked and simmered like any dry bean, or roasted, and ground into a gluten free flour

Blue Palo Verde



Foothills Palo Verde



### SAGUARO CACTI

One of the largest cacti in the world, saguaros can be found only in the Sonoran Desert spanning the areas of central/southern Arizona and southeastern California.

- Harvest the fruit from the cacti blooms in the dry summer months of June through early July
- The fruit has a flavor and texture similar to the fig and is considered to be the best tasting of all the Sonoran Desert fruit from cacti
- Beware the sharp spines as you dislodge the ripe fruit using an old saguaro rib or stick
- Split the fruit in half to expose the red, seedy flesh that can be eaten raw, used to make jams, syrup or even wine



## Foraging in the Sonoran Desert 101 *(continued)*

### PRICKLY PEAR CACTI

Easy to spot and widely distributed in the desert, the prickly pear includes at least 18 species.

- Found on hillsides, lower desert basins and canyon bottoms
- The green pads are edible if you removed the spines and fry or pickle them
- The red seedy fruit is sweet and succulent, and can be harvested during the humid months through September
- Beware the tiny thorns on the fruit by removing with a small kitchen blowtorch
- The inside of each green pad can also be applied externally as a poultice to soothe stings, cuts, scrapes and burns, very similar to aloe vera, with the added benefit of reducing inflammation and swelling from sprains and contusions

Prickly Pear



Desert Chia



### DESERT CHIA

Desert chia seeds are typically added to yogurt or beverages and are high in fiber, protein, calcium, omega-3's and iron.

- Can be found along roadways, rocky hillsides and areas with disturbed soil
- Harvest the blue-purple flowers in early March and April, which are edible and pleasant tasting
- Once the pods dry out in June, harvest the seeds by crushing the pods over a container to collect the tiny seeds
- You can add the seeds to pudding and jam as a natural thickener
- You can also make a tincture or tea from the leaf to ease digestion, gas and bloating

Devil's Claw



### DEVIL'S CLAW

Enjoy this fuzzy green fruit that looks a lot like a pepper and tastes great.

- Wear gloves and harvest while it's still green
- Blanch and peel to remove any bitterness  
Try sautéing, steaming, frying and adding to soups and salads
- It was once considered the "Pickle of the Plains" in days of yore, so try pickling it!



## Foraging in the Sonoran Desert 101 *(continued)*

### WOLFBERRY

These berries are in the same family as goji berries and are just as high in antioxidants.

- They can be commonly found under ironwood and mesquite trees in exposed flats, hillsides, valleys and some urban landscapes
- There are four species of this perennial bush as pictured below

Lycium Fremontii



Water Jacket Wolfberry



Narrow-leaf Wolfberry



Pale-leaf Wolfberry



- Lycium fremontii, blooms purple flowers with teardrop shaped berries
- Water jacket wolfberry, Lycium andersonii, have light purple flowers with small, round berries
- Narrow-leaf wolfberry, Lycium berlanderii, have light purple flowers with small, round berries
- Pale-leaf wolfberry, Lycium pallidum, bloom light green flowers with a pleasant aroma and big, slightly oval juicy berries, and are praised by many wild food foragers as the best tasting
- Harvest in spring between March and April. After the summer rains, these plants may fall dormant again, and rebloom and fruit once more before fall
- Gather wolfberries during the wet summer months of August and September
- Wolfberries are high in vitamins A and C, and potassium, calcium, and zinc.
- Try adding wolfberries in place of goji berries in any recipe that calls for them
- Combined with Mormon tea, wolfberry makes a potent hay fever reliever that may rival over the counter allergy medicines
- Wolfberry may also offer relief to nausea and intestinal spasms
- Topically, the leaves can be poulticed and applied to stings, swellings, and contusions





# Foraging the Wild Hive

## BACKGROUND

When it comes to foraging for alternate food sources in God's pantry, few things can seem more daunting at first, yet ultimately more gratifying, than harvesting from a wild honey bee hive. Never fear. With a little preparation, patience and persistence, you'll soon start enjoying this delicious and golden bounty. Depending on your area, the best time to harvest is late summer when honey production has peaked and the cells of the honeycombs are covered over with a protective thin white layer.

## BENEFITS & USES

### Wild Honey

- A good source of antioxidants which help to protect your body from cell damage due to free radicals that contribute to aging and the development of chronic diseases
- Helps kill unwanted bacteria and fungus and naturally contains hydrogen peroxide
- As an effective germ killer, it can be used to treat wounds and aid in tissue regeneration
- A phytonutrient powerhouse that has some immune-boosting and anticancer benefits
- Aids in soothing a soar throat and effective as a cough suppressant
- Sometimes used to treat digestive issues such as diarrhea

### Beeswax

- A natural alternative to treat many skin conditions including psoriasis and eczema, particularly because it is hypoallergenic
- Used as a skin moisturizer, also a critical ingredient in balms and salves
- Can help relieve pain and acts as an anti-inflammatory, anti-bacterial and anti-viral
- There are many other applications including beeswax candles, wood/furniture polish and sealant, leather shoe polish, beeswax soap, lubricants, and more

## PREPARATION

Take a good shower before heading out, avoiding application of anything but a scentless deodorant. Wear clean clothes that let your skin breath and easily absorb perspiration, preferably modest colors that don't act as camouflage, nor serve as a flashy beacon. The bees need to see you coming, but not get overly agitated. Sweat and perspiration add to the possibility of getting stung. As with any creature encounter in the wild, it's best to always remain calm and at peace.

## Foraging the Wild Hive *(continued)*

Prep a simple day pack sufficient for stomping around the wild areas, but don't over-do the weight which can add to perspiration and fatigue. Keep it simple. At a minimum you'll need:

- Tupperware for the honey and honeycombs (I prefer large, lightweight Ziplock freezer bags)
- Sharp hunting knife (preferably with a long blade)
- Small lightweight wooden box with a piece of screen (or some such) for a lid
- Small dish and small container of artificial nectar
- A dependable lighter or two
- A compass
- A bee smoker and plenty of fuel (if you want to get fancy)... I prefer 2-3 mild cigars instead

### LOCATING THE HIVES

When the weather is warm and the flowers are blooming, it's time to start looking for wild honey bee hives. To get started, simply find some honey bee swarms buzzing around the flowers, whatever your terrain consists of. Naturally the bees are fond of the flower types that produce the best and most abundant nectar.

Once you find a swarm, don't expect the bees to just tell you where the colony houses itself, and unless you've got the mobility of a bird, you're not going to easily follow them back to the hive.

Time to get your little wooden box out, put the dish in the bottom and fill it with the artificial nectar (made from 2 tablespoons of honey, 6 tablespoons of sugar, and enough water to completely dissolve both the ingredients).

Next, calmly place the open box with the nectar where you've located a swarm of bees. You can even add some lemongrass oil directly in the bee box as an added lure. Sit tight until the box has attracted a group of bees and gently put the screen over the top. Wait a few minutes while they stop buzzing and finish eating. Now, gently remove the top and let them take flight. After circling a bit, they're heading to the hive, so note the flight path (this may require 2 to 3 trip cycles) and use a watch (or 1-1000 counting method) to determine how long it takes them to return to the box after heading to their hive. As a gauge:

- 3 minutes or less means the hive is likely less than 1/4 mile away
- 5-10 minutes means about 1/2 mile away
- 10-20 minutes means about 1 mile away

Once you're confident of the flight path (the beeline) and the approximate distance, head in that direction. The compass will come in handy if the terrain has a lot of growth and/or variations in elevation. As you go, keep an eye on all the other bees taking the same route and start looking for the trees, holes, cavities, fallen logs, rock formations, etc. that may shelter the hive.



## Foraging the Wild Hive *(continued)*

### **HARVESTING THE HONEY AT THE HIVE**

If you've gotten this far and located the hive, congratulations! You're in the home stretch. If you brought along the bee smoker, it's time to fire it up. If you're like me, fire up a cigar so it's producing some prolific amounts of gentle smoke.

If no cigar, you can gather up some leaves and tinder brush, pine needle branches, or some such, bind it tightly together torch-like and fire that up. Make sure you include some green stuff (it may not burn well, but it will help produce abundant smoke). Only use the natural elements available at your location. Do not use paper or any other manmade materials that contain chemicals.

Bottom line is, you're going to need to apply a gentle smoking to the hive. No, the smoke won't knock them out, but it will impede their ability to communicate, warn each other of danger, and mount a coordinated attack with their stingers.

Be gentle at this point, moving calmly and deliberately. It's time to harvest the honey and some honeycombs by any means necessary without completely destroying the hive and the colony. This is where the hunting knife with the long blade and the tupperware (or Ziplock bags) will come in handy. Be sure to take only what you need and leave some of the hive intact so the colony can survive.

### **PROCESSING YOUR WILD HONEY HARVEST**

Back at home (or base camp as the case may be), use a wooden spoon to crush up your honeycombs and globs of honey in the tupperware or ziplock backs. Take another clean container such as a pot, place a collander on top, and add a cheese cloth to cover the collander for straining purposes. Empty all of your harvest into the collander.

It will usually take 1-2 days for the honey to strain into the pot. Make sure you do this indoors where it won't attract more bees, or worse -- bears.

Finally, pour the honey into some clean glass jars for preservation, pantry storage and future use.





# Grid-down Soap Options

## 1. Stocking up Checklist

- Hand soap
- Dish soap
- Laundry detergent
- Reusable washing eggs, Soap nuts or other products
- Shampoo/conditioner

## 2. Make your own Laundry and Dish Soap Checklist

- Borax
- Washing soda
- Fels naphtha soap or similar bar soap or soap flakes
- Oxiclean (optional)
- Epsom Salt (optional)
- Essential Oils (optional)

You blend all three of the above ingredients in equal parts. The optional ingredients you would add in a 1/2 ratio. You can leave it dry and add to laundry in powder form. For dish soap add warm water to desired consistency and stir until dissolved. Essential oils can be added for fragrance.

## 3. Animal Fat/Olive Oil Homemade Soap

- Lye
- Olive oil/Other plant oil
- Tallow
- Kitchen Scale

Recipe in separate document. Use a recipe because you want a specific fat ratio to react properly and completely with the lye. <https://soapee.com/calculator>

## 4. Plants High in Saponins

- Soapwort leaves and roots
- Lambsquarters roots
- English ivy
- Soap nuts (plant)
- Horse chestnut
- Clementis
- Bean water

To use saponin rich plants for washing simply boil or soak the appropriate part of the plant (fresh or dry) in water and let sit until the water feels soapy. Strain out the plant parts and then use as much as needed to clean with. <https://lovelygreens.com/9-natural-soap-plants-for-making-lye-free-soap/>

## 5. Enzyme Cleaner

- Sugar
- Yeast
- Citrus peel

Recipe in separate document.



# Growing Beets

On the Sustainability Signal thread, we have had discussions about growing three different kinds of beets: sugar beets, garden beets (regular beets), and mangel beets (usually used for animal fodder). Beets set seed during the second year; all three types will cross-pollinate with all of the other varieties, so saving seed can be a challenge. Following is a plan for how you can grow all three kinds of beets each year, without worrying about cross-pollination.

Year 1: Plant seed for garden beets, sugar beets, and mangels. Save several garden beets for planting out for seed next year.

Year 2: Plant seed for garden beets, sugar beets, and mangels, and the held-over garden beets from Year 1. Save tons of seed from Year 1's held-over plants. Save several sugar beets for planting out for seed next year.

Year 3: Plant seed for garden beets, sugar beets, and mangels, and the held-over sugar beets from Year 2; Save tons of seed from Year 2's held-over plants. Save several mangels for planting out for seed next year.

Year 4: Plant seed for garden beets, sugar beets, and mangel beets, and the held-over mangels from Year 3; Save tons of seed from Year 3's held-over plants. Save several garden beets for planting out for seed next year.

Year 5: Plant seed for garden beets, sugar beets, and mangel beets, and the held-over garden beets from Year 4; Save tons of seed from Year 4's held-over plants. Save several sugar beets for planting out for seed next year.

Year 6: Repeat Year 3.

Year 7: Repeat Year 4.

Year 8: Repeat Year 5.

And so on.



# Homemade Vinegar & Sugar Beets

**[Marilyn]** I've been thinking about people being able to make vinegar. We've talked about it quite a bit on the Sustainability thread, but has it been brought up on Health and Wellness? And using vinegar as a cleaning solution? With the local fruit people have available. Having enough sugar might be a challenge.

**[Mick]** No, we haven't really talked about vinegar on H&W; but you raise a great point. Sugar would be a challenge. But sugar beets are massively high in sugar, are easy to grow and process, and can be raised in containers. In a pinch, a few slices or cubes of sugar beet (or better yet, sugar beet powder) could be added to the local fruit in order to provide the sugar content for the vinegar-making.

**[Marilyn]** I've got to get me some sugar beet seeds.

**[Mick]** As far as sugar beet seeds, you can get them from Richo Cech at Strictly Medicinal Seeds; and also from Pinetree Garden Seeds. Urban Farmer Seeds is a third option, and they have the best prices if you want to buy sugar-beet seeds in bulk. Also, sugar-beet greens are just as good as the greens from regular beets; and sugar-beet molasses will keep for over a decade if stored well (I have some in an unsealed jar in my cupboard that I made in I think 2012).

**[Marilyn]** Ok, I'll bite, sugar beet molasses? Why and how?

**[Mick]** Haha! Why beet-sugar molasses? Because it's a fairly simple way to obtain a very concentrated (and thus efficiently stored) sweetener that is shelf-stable pert near forever; and this sweetener comes from a renewable resource that's way easier and cheaper than keeping bees. Plus, beet molasses is extremely high in iron (for those who might be anemic) and in B-vitamins (which everybody needs). I'll get to the "how" in a second; but I want to mention that another possible option for using sugar beets as a sweetener would be to initially root-cellar them; and then throughout the winter, as one had time, one could dehydrate them either in an electric dehydrator or on trays near (or on) one's woodstove. They could be diced, sliced, or shredded for the dehydrator; and if desired, they could be powdered after they dried. It would be interesting to try substituting sugar-beet powder for white sugar in recipes. I've never done this, but it's something that I've been thinking about doing for a long time.

So, the "how" of beet molasses: scrub all the dirt off of the beets, peel them, and shred them. Fill a big pot 1/3-to-1/2 full of shreds, and then fill the rest of the pot with water. Cover the pot, bring to a boil, and then simmer (still covered) for a couple of hours. Remove from heat and allow to cool (keeping it covered). It doesn't have to cool to room temperature; it just has to cool enough so that

## Homemade Vinegar & Sugar Beets *(continued)*

it won't scald you if you get it on your skin. Once it is sufficiently cooled, pour the cooking liquid into another pot. Then if you have a fruit press or tincture press, use it to extract all the liquid you can from the cooked beets. Otherwise, put the cooked beets in some cheesecloth or a linen towel and squeeze out as much liquid as possible by hand. Once you've gotten as much liquid as you can, bring all the liquid back to a boil; then cook it at the lowest heat possible, uncovered, until it is dark and thick and looks like molasses. If you have a woodburning stove, you can put your pot on a corner where it's not super hot, and let it cook down. Stir occasionally; and as it thickens, stir more and more often. Make sure that it doesn't stick and burn. If any foam rises to the top of the pot, skim it off periodically. When the molasses is sufficiently thick, pour it into clean and sterilized jars (you can sterilize them by boiling, but I sterilize my jars in the oven instead). If the molasses is hot, then make sure the jars are hot; if the molasses is cool, then let the jars cool before putting the molasses in them. Put tight-fitting lids on the jars. The lids don't need to seal; there's so much sugar and so little water in the molasses that it will keep just fine on a shelf for a very long time. As I mentioned, I have an unsealed jar in my cupboard from a batch of molasses that I made I think 11 years ago.

**[Lisa]** Yes! I did that research a couple years back as well trying to find a sugar source I could grow here as well. The Willamette Valley grows lots of sugar beets also.

<https://bakerpedia.com/ingredients/beet-sugar/>

And here's a link for how to make brown sugar out of sugar beets:

<https://www.instructables.com/Making-Sugar-From-Sugar-Beets/>

**[Marilyn]** When we look at all of the things we rely upon that are shipped in, it is staggering. Finding alternatives now will help people not panic. Back to vinegar, here's a link to Kris' short video on making scrap vinegar:

<https://corac.co/2023/09/21/how-to-make-scrap-vinegar/>

And here's a longer video from YouTube, about making fruit vinegar: `

<https://www.youtube.com/watch?v=depySASTPrw>





# House Pet Survival Care

## THINGS TO KNOW

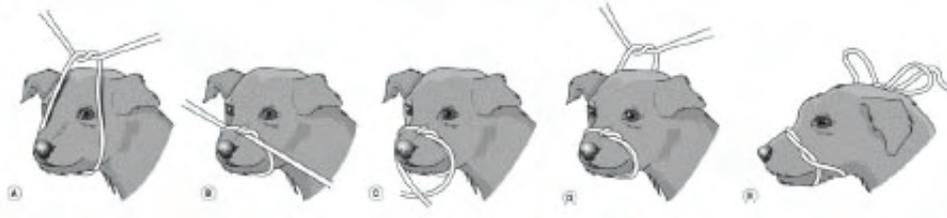
For this sheet, I'm going to assume that no veterinary care is available, and no help is coming. While professional help is available, please use it. Each situation is different; this is just a basic guideline to know where to start.

### SAFE HANDLING

*Make sure you can safely control the animal before you begin. Bite and scratch wounds are very contaminated and turn into infections very easily.*

**Dogs:** control the head. Biting is their primary defense mechanism and even the most tame of dogs may bite, if in pain or startled. If you know your dog needs a muzzle and you have one, use it. Usually it takes 2 people, one to restrain and one to examine or administer aid.

- *How restrain a dog:* Stand beside the dog, facing it. Wrap arm closest to the head around the neck, with the hand near the ears or upper neck. Wrap the other arm around the abdomen from above and hold dog against you as tight as needed.
- *How to make a rope muzzle:* If you need a muzzle and don't have one, this works. We would use gauze for this in office, but any form of medium weight cording should work, if needed.



**Cats and Small Dogs:** Sometimes covering the animal with a blanket or towel works also. *For dogs:* Keep the head under cover, then work on whatever part needs attention. This is usually my preferred method for dealing with cats and dogs that don't have noses, like pugs. *For cats:* try to keep most of the cat underneath the blanket and only expose the part that needs attention.

## House Pet Survival Care *(continued)*

**Cats:** You may be able to do a “cat stretch” sometimes. Cats are unique in that if the cat freaks out, it turns into a ball of flying nails and teeth. In a home situation, I’d just drop it walk away and come back later if this happens. Then try catching it by throwing a blanket over the cat and getting ahold of it through the blanket. Cat stretch hold is: holding the cat by the scruff in one hand holding the back feet in the other and literally stretching the cat out along the table.



### WOUND CARE TIPS

**Cleaning:** Sterile water or saline is ideal, but clean is adequate in a survival situation. If you can, flush the area with clean water or saline (1 tsp salt per quart of water), more flushing is usually better. Try to get dirt, matted hair out if you can. Dab with clean gauze or cloth if needed, try not to rub or cause more tissue trauma.

**Stitches:** I’m not going to address stitches. If you have the resources, then by all means go ahead. I’m going to assume here that we will be handling it as an open wound and allowing the wound to fill in with scar tissue. If the area is not very large or deep, the best course may be to apply a topical antibiotic and leave it un-banded. If however, it is extensive or pretty ugly, it should probably be covered. Plan on re-banding every day. A moist open wound will turn into a really nasty infection quickly if kept damp, covered and left alone.

**Bandage management:** remove the wrap or bandage everyday, check the area, clean it if it looks weepy, re-apply antibiotic ointment and rewrap. Go as long as necessary. This may take a lot of bandaging material, so use resources wisely.

### General tips:

- Manage wounds without a bandage when you can, wounds exposed to the air, tend to dry and not go to infection as easily.
- Scar tissue will shrink over time. This is usually good, but can cause problems depending on where it is on the body; however, there is very little that can be done about it.
- Any deep penetration into body cavities is not likely to have a good outcome.
- You can gauge how an animal feels by responsiveness, appetite, restlessness. Try to keep the animal from licking the wound. E-collars work well; if you have one, use it. If not, use your ingenuity to make one: cardboard, rolled up towel with electrical tape to make a stiff neck collar, pool-noodle over the collar... anything that safely prevents them from reaching the site.
- See “Stitches” above under “Wound Care Tips” for how tight to make a bandage – same applies.



## House Pet Survival Care *(continued)*

### **BROKEN BONES**

*Try to feel where it's at, carefully. Limb below the break is usually non-weight bearing, tends to be held up and hang loosely. At the fracture site is usually a crunching/grinding sensation. Assess whether the skin is broken.*

**Splinting:** to immobilize a bone, the joint above and below the break, needs stabilized.

- Try to wrap a layer of padding/cotton/loose gauze material under the splint. Place whatever you've chosen for a splint, then wrap the whole thing to hold in place on limb.
- Too loose and it falls off, too tight and the splint can cut off circulation and cause limb damage. So, when you're done, check the toes: they should not be swollen or painful. There should be sensation in the toes and they should be warm. If you're not sure, recheck in an hour. Re-do it if you have to.
- You may not get great alignment. The goal is a functional limb, not a perfect limb. Do the best you can.
- So, what if the break is shoulder or hip? A front limb can be flexed into a natural position and wrapped to the body. If the break is hip or pelvis, the best bet is usually strict cage rest.
- Completely support animal with a sling or towel under abdomen to go outside for potty as necessary. Once again this is less than ideal, but will hopefully give the animal a chance to heal.
- An open skin fracture is much more of a challenge, because there is now contamination and possible infection in the fracture site. Clean the wound, and go on the the splint. Use antibiotics if you can spare them.
- Complete healthy bone healing is usually 6-8 weeks.

### **VOMITING AND DIARRHEA**

*Probably the most common complaint for dogs and cats.*

**Standard directions for repeated vomiting/diarrhea beyond what's normal for that pet:**

- Take away food and water for 6 hours or so.
- Offer water first, if that stays down move onto food a few hours later.
- Offer a few kibbles of normal food, if that stays down then feed the next meal lightly. Followed by normal amount on the next meal.
- If the animal won't eat its normal diet, you can offer bland options in small proportion: such as boiled chicken, cooked rice, cottage cheese.
- Obviously avoid known food allergies.
- The goal is slow reintroduction of food. We may have to be creative in survival situations.



## House Pet Survival Care *(continued)*

### Notes on food behavior:

- Cats are strict carnivores. They require meat for functional health. In a time where pet food is scarce and the cat is willing, allow them to hunt for some of their own dinner. Or try to allow them some scrap pieces of meat/egg. Note that hunting could result in the animal getting parasites: Use dewormers periodically if you can, and use good personal hygiene when handling the pet and especially pet waste
- Dogs are not strict carnivores. They are much more dietarily flexible; will eat some grains, vegetables, and will scavenge. However, vomiting is also a natural part of that cycle, so as house pets, I'd restrict the scavenging. In a no pet food situation, a dog should be able to live off of your dinner scraps. (Avoid onions, raisins/grapes, chocolate and any known food allergens as you can.) Having said that, be prepared for some vomiting, depending on the pet. You will likely encounter something that doesn't agree.
- Stock up on pet food as you have room. I'd use a dry food, just because it's much more calorie dense. Wet foods are 70% water. Packaged dry food should last well beyond expiration date.

### EAR INFECTIONS IN DOGS

*This is a very common problem for some dogs.*

This will present with shaking the head and scratching at ears. When you pick up the ear and look inside, the canal(s) area is typically very red and frequently has dark brown discharge. It has a uniquely nasty odor of sweet/fishy. Once you have smelled this you will recognize it again. The way most common cause is a yeast organism, called malassezia. When a yellow foul discharge is present, it's more likely bacterial.

- If you own one of these dogs, continue with the meds you have. You know what I mean.
- If this is a new problem or you run out of meds: You can make an ear wash in the ratio of 2/3 clean water and 1/3 vinegar (white or apple cider) Put a little wash, like several drops in the ear, massage ear, then wipe out the ear with cotton balls/Kleenexes/clean towel/rag. Do this once or twice a day for about 7 days. If the ear gets redder or symptoms worse, then stop the washes. Yeast infections, characteristically like an alkaline environment, so acidic solutions can help clear or control them.

### POISONING

*Primarily a dog problem as they tend to be more indiscriminate eaters, so this section is directed at dogs.*

Try and figure out what they ate, how much and when. Most things are dose dependent: a Chihuahua that eats 8oz of baking chocolate may actually die and Rottweiler may not even be affected.



## House Pet Survival Care *(continued)*

If the dog ate the toxin in the last 60-90 minutes, you can try to induce vomiting:

- Hydrogen peroxide: dose 1-2ml/kg = 0.4-0.8 ml/lb. = 1/12 -1/8 tsp/lb. Given by mouth. If nothing happens, you can repeat in 20 minutes (if it's in the time frame.) Only 1 repeat and it usually works in the first 10 minutes, if it's going to.
- Caveats: Do not induce vomiting if the substance is a corrosive acid or alkali : like battery acid or lye: it just burns everything on the way down and back up. I have never seen a dog stupid enough to eat anything like this, but you never know.
- If the dog ate a corrosive substance or it's past the time frame for inducing vomiting, or at least 30 minutes after the dog vomited the toxin up.
  - Use activated charcoal powder to try to adsorb remaining toxin. 1 cup of activated charcoal is about 75g.
  - Dose: 1-4 g/kg = 0.4 g -1.8 g/lb = ¼ -2/3 cup/ 25 lbs. body weight. You will need to mix this with something to give it. We would mix it with canned food and see if the dog would eat it. You can mix it with water and syringe feed it.

### OVER THE COUNTER DRUGS

Calculation notes: drugs are usually dosed in mg of drug/ kg of body weight. There are 2.2 lbs. per 1 kg. There are 5ml in 1 teaspoon. In previous sections I've tried to give conversions for you, since we, Americans still use imperial measurements and it's hard to tell what measuring tools you might have on hand.

Mini drug dosing medical dictionary:

- BID – twice a day
- SID – once a day
- TID – three times a day
- QID – 4 times a day
- PRN – “pro re neta” – as needed
- PO – “per os” – by mouth
- IM – intramuscular injection
- SQ – subcutaneous injection
- IV – intravenous injection

Example dose calculation:

- 50 lb. dog needs Benadryl at a dose of 2mg/kg PO BID
- $50\#/2.2\text{Kg} = 22.72\text{ kg weight}$  |  $2\text{mg dose} \times 22.72\text{kg} = 45.44\text{ mg}$
- The dose is 45.44 mg given by mouth twice a day. Benadryl doesn't come in 45 mg so the closest dosing would be 2 of the 25 mg or 50 mg.



## House Pet Survival Care *(continued)*

Do not give animals Tylenol. One Tylenol kills an average 10# cat. Dogs may survive, but there can be serious liver damage. Don't do it. This is one drug I use cautiously even with the people in our family. It has it's uses, but do not overdose this. Side note: NAC is used for Tylenol overdose in people, I don't know the regimen. Check a human resource if you want to know.

Basic formulary of common drugs for dogs:

- Aspirin: Dogs for pain/arthritis – 10 – 20 mg/kg by mouth 2 to 3 times a day. Aspirin is a non-steroidal anti-inflammatory. It can cause stomach upset and ulcers and can act as a blood thinner (anticoagulant.) Try to give with food or use a buffered form. It usually comes in 65mg, 81mg and 325mg.
- Benadryl (Diphenylhydramine)– for allergic reactions like hives, red and irritated skin, itchiness – 2mg/kg by mouth 2 or 3 times a day. This is an antihistamine. It can cause drowsiness. I usually top out at 75 mg even if the calculated dose for a large dog is more, because it just seems to really knock them out. In an emergency I would use it as a sedative if you have need and can safely administer it. It usually comes in 25mg capsules or tablets or a liquid 12.5 mg/ml syrup.
- Ivermectin: for parasites and mange – 0.2mg/kg (1ml/110lbs.) by mouth. Repeat in 2 weeks. There are many products on the market. I use the 1% bovine injectable product and as an oral medication. This is an older way of using it. Collies seem to be sensitive to Ivermectin, so generally don't use it with that breed. Side effects at high doses are usually neurologic: tremors, disoriented, weak, agitated. If you see any side effects just stop using it. Symptoms will go away.
- Maalox (Aluminum hydroxide and magnesium hydroxide) – for upset stomach or stomach ulcers – 2-10 ml by mouth every 2- 4 hours. I would probably not repeat more than 3 times. If it hasn't worked by then it's not likely to. It is an antacid. Do not use if the dog has ingested bone. The antacid will prevent the stomach acid needed to break down and pass the bits of bone.
- Pepto-Bismol (Bismuth Subsalicylate) – for diarrhea – 10-30 ml every 4- 6 hours. Do not use with aspirin as this product already contains a form of aspirin.
- I did not list any drugs for cats. They are hard to medicate and they don't metabolize many drugs as well as dogs. The canine dose of ivermectin is safe for cats as well. If you give it, some cats will foam at the mouth after oral medications; the cat is fine. Let it chill out somewhere safe and don't repeat unless you have to.
- There are lots of more effective medications that your veterinarian can provide and administer, so please use them while we still can. The list is just for a few safe things that you may have in your cabinet to use if no real help is available.

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References: Kirk and Bistner's Handbook of Veterinary Procedures and Emergency Treatment, 7th Edition by Stephen Bistner, Richard Ford and Mark Raffe & Veterinary Drug Handbook, 2nd edition by Donald C. Plumb.





# How to Care for Cast Iron Cookware

There isn't much to caring for cast iron. The following easy steps should keep your cast iron working for you for decades.

If your cast iron is new, it probably has come to you pre-seasoned, meaning it already has a coating of oil on it. You can put another coating of any kind of vegetable oil on it inside and out and bake it in a 350o F oven. Put it upside down in the oven with something underneath to catch the excess oil. Let it bake for an hour and then turn off the oven, leaving the cast iron in it, and allow the pan to cool down. Use a lint-free cloth to wipe down the pan and it's ready to use! Use the same method for older, rusted cast iron and it will be as good as new.

When you cook with cast iron, you don't want to shock it with extreme temperatures like pouring in ice water after you've heated it. After cooking, if there are bits of charred food in the pan, scrape off as much of the bits as possible with a wooden spatula and run hot water in the pan. Some people want to use soap but that isn't good for the nice seasoning you've worked so hard to put on the pan. Hot water and some gentle scrubbing with a sponge or dishcloth should get everything. If there is still a spot or two, put some coarse salt on the spot and use a sponge or dishcloth to rub the spot away.

While I don't do this every time with my cast iron, it is recommended to dry the cast iron off and heat it gently on the stove, then put some oil in it and rub it around with a lint-free cloth. Wipe all excess oil off and turn off the stove to let the pan or pot cool. Your pan is now ready to use for the next meal.

If you have a lid, be sure to season that, too. And it's best to use wood or silicone utensils except for the occasional metal utensil as long as you're not scraping the pan with it.

For further tips you can go to these sites:

- [How to Use Cast Iron: Cooking, Cleaning and Seasoning - YouTube](#)
- [Science of Cast Iron Seasoning | What is Seasoning | Lodge Cast Iron](#)



# Laundry by Hand

## Wonder Washer Tips & Tricks:

[https://www.amazon.com/gp/product/B002C8HR9A/ref=ppx\\_yo\\_dt\\_b\\_search\\_asin\\_title](https://www.amazon.com/gp/product/B002C8HR9A/ref=ppx_yo_dt_b_search_asin_title)

- Add water and soap before clothes. Keep a hand towel nearby for inevitable dribbles.
- If using hot water, pressure builds up (that's a feature, not a bug!) and sometimes the lid will start to leak. After a few turns, release the lid, lock it back down, and keep going. You may have to do this a couple times based upon how hot the water is.
- This is where that hand towel comes in. Give the drum a quick wipe to reduce splatter.
- Use a permanent marker to indicate the grooves on the drainage tube (see picture). This saves you the messy fumble of trying to line it up while water leaks everywhere.
- Use less water to rinse than you did to wash. The clothes are already wet, and too much water causes the unit to wobble and thud loudly when it is turned. I have found that my rinse cycles take about half the water of my wash cycle.
- Wash with hot and rinse with cold to save the "lid dribbles" when you don't need them! I rinse twice. After my wash, I add a spoonful of fabric softener to the first rinse, and plain water to my second. My clothes smell fantastic.
- If you are line or coat-hanger-drying indoors, set up a fan to decrease your drying time exponentially. Also, it makes the whole room smell like clean laundry which is awesome!
- Worried you're not rinsing out all the soap? With dry hands, rub your washed clothes between your fingers and then rub your fingers together. If they feel slippery rather than just wet, rinse again. And stop using so much soap, jeez.





# Line-Drying Laundry Outdoors In Winter

**[Linda]** Question... can you dry sheets and clothes on a line in the cold of winter? I think I remember my mom doing this?

**[Natalie]** I have heard about this but don't know the details. I think maybe they ironed them when they brought them in?

**[Mick]** I've never done it (we only line-dry in the spring, summer, and fall), but it can be done. The clothes actually freeze-dry, from what I understand. I'll dig around and see if I can find any information. Linda, here's a good, short video on drying clothes outside in winter:

<https://www.youtube.com/watch?v=LhtdizG-Dso&t=1s>

P.S. - The guy in the above video also wrote an article on the subject:  
<https://organizing.tv/drying-clothes-outside-during-winter/>

P.P.S. - Here's another good article. Please be sure to read the comments; there's a lot of good information there, too:

<https://104homestead.com/line-dry-clothes-winter/>

**[Donna]** My mother dried everything in the dead of winter. The time comes when you have to.

**[Mick]** Donna, that's cool that you remember your mom doing that. I know that my grandmother line-dried outdoors in winter because the farm where my mom grew up didn't have electricity until she was 17 (1955).

**[Donna]** I remember because I used to bring them in. Stiff as boards.

**[Jacquie]** Oh my, yes. But you will have hands so cold that it takes an hour to recover! But I have done it and expect to do it again before too long.

**[Mick]** When hanging laundry outside in the winter, I wonder if it would help to wear those coated garden gloves that keep your hands dry while still allowing a good bit of dexterity in your hands? Maybe something like this (I have these gloves, and they work great in the garden when the ground is wet and cold, like when I'm pulling beets and carrots in damp soil on chilly mid-autumn days):



## Line-Drying Laundry Outdoor In Winter *(continued)*

[https://www.leevalley.com/en-us/shop/garden/clothing/gloves/70436-the-original-gripper-mud-gloves?item=AH191&utm\\_source=free\\_google\\_shopping&utm\\_medium=organic&utm\\_campaign=shopping\\_feed&utm\\_campaign=CAN-EN%7CPLA%7CPMax%7CGarden%7CLowPriceTier&gad\\_source=1&gclid=Cj0KCQiAmNeqBhD4ARIsADsYftf8axK2FzkiGksXM17fi8P8g6hdxOhCiqJlFKp8xVHF4TZe24H34\\_AaAsI3EALw\\_wcB](https://www.leevalley.com/en-us/shop/garden/clothing/gloves/70436-the-original-gripper-mud-gloves?item=AH191&utm_source=free_google_shopping&utm_medium=organic&utm_campaign=shopping_feed&utm_campaign=CAN-EN%7CPLA%7CPMax%7CGarden%7CLowPriceTier&gad_source=1&gclid=Cj0KCQiAmNeqBhD4ARIsADsYftf8axK2FzkiGksXM17fi8P8g6hdxOhCiqJlFKp8xVHF4TZe24H34_AaAsI3EALw_wcB)

**[Marilyn]** We had to hang laundry outside in winter when I was a kid in Montana. Yes, your hands get so cold that they burn. We got something like these to be able to hang sheets in the basement/garage during the winter for that purpose:

<https://a.co/d/78O2ZTC>

And this; there are different ones available:

<https://a.co/d/fVDH35j>

If you search the CORAC website, there is information on doing laundry off-grid under the Sustainability tab. The loads of laundry will most likely be a lot smaller. People will have chore clothes and church clothes. Laundry will be a BIG undertaking. If you haven't practiced, I'd encourage you to see what it's like.





# Line Drying Wash

Line drying clothing is a part of life for me. I do it every day. We do not use a dryer (it has been broken for years). The process is very straight forward, but I hope to give you a few tips that may be useful.

In the warm, non-rainy weather it takes less planning. I have a 40'; retractable clothesline outside (that rarely gets retracted). I can fit one full load on it. Heavy items hung on the outside edges where there is more support and does not sag the line. When it is really hot, I can get two loads done in one day. We get very gusty wind starting at 3pm almost every day, so the load needs to be out early and taken down before the wind starts. If you want your children to help, make sure the line is hung at a height that they can reach.

When it is cold, I have an accordion wooden clothes rack that is about 5'; tall 3'x1'; It has 15 wooden rungs. I can fit a medium-large load on it. I have learned to judge how full I can make the load. When drying indoors I plan for only one load a day and for it to take 24 hours to dry. When the woodstove is going, that can be a little faster. You can also buy foldable aluminum clothes racks at place like Costco, that are also good. People have been known to line dry clothes outside even in the winter...but frozen clothes never made sense to me. If that is your only option, it can be done.

For large sheets, I only do them one at a time mixed with the normal load and hang that over the shower to dry. When you are drying outside you can also make use of patio tables, chairs and benches for drying larger items. Even ladders can be used indoors or out for additional drying surfaces.

Another approach I have adopted is that we use Turkish towels (I will put a link next). They are lightweight and dry quickly. They are made of cotton and can be washed with the normal clothes load, so I never have a big heavy towel load to dry somewhere. We all have 'dirty clothes'; we wear outside from 2 days to a week. They come off when entering the house and reused. That cuts down on the number of loads. This process works if you do a load every day excepting Sunday and you don't try to wash your clothes the night before you need them. Every 2-3 days the load is of cloth diapers.

The kids have just learned if they wet the bed, they won't get their favorite blanket back for 24 hours. It's a tough life around here.

These are the Turkish towels we use every day. I did not pay this much for them.  
[https://www.amazon.com/gp/product/B06Y2B97M4/ref=ppx\\_yo\\_dt\\_b\\_search\\_asin\\_title](https://www.amazon.com/gp/product/B06Y2B97M4/ref=ppx_yo_dt_b_search_asin_title)

These Turkish towels are less expensive and I bought an extra set, but have not used them yet.  
[https://www.amazon.com/gp/product/B09WVTQ649/ref=ppx\\_yo\\_dt\\_b\\_search\\_asin\\_title](https://www.amazon.com/gp/product/B09WVTQ649/ref=ppx_yo_dt_b_search_asin_title)

## Materials list

- Rope, parachute cord, or retractable clothesline
- Two attachment points (buildings, trees, posts)
- Heavy duty clothes pins (Don't go cheap here or they will not last/work)
- Foldable drying racks
- Laundry basket for carrying clothes to line, keep it clean





# Long-Term Food Prep & Storage

## BACKGROUND

This sheet gives information about basic types of SURVIVAL FOODS plus instructions for packaging dried foods for long term storage, lasting between 10-25 years.

Here are basic items that are essential for survival or are practical because they have good nutrient content or have multiple uses.

- Water (and water filtration)
- Salt
- Honey
- Oats, rolled
- Beans (& legumes)
- Rice (& quinoa)
- Flour (& yeast)
- Meat & fish, canned
- Popcorn
- Pasta (spaghetti is efficient shape)
- Eggs, powdered
- Milk, powdered
- Potatoes, dehydrated
- Vitamins & minerals
- Apple cider vinegar
- Alcohol (vodka)
- Ghee (clarified butter)
- Bonus: Spices & seasonings series for medical supplies like hearing aids or blood sugar monitors



## NOTES

- We need to drink 2-3 quarts of water a day. Much more is needed for cooking and washing. Keep several large containers of water in your home. Rotate every 6-12 months. An earthquake or power loss may disrupt municipal water or make it unsafe.
- Salt is vital. Store between 5 to 8 pounds per person per year.
- Buy jars of honey from local sellers. Avoid honey from Walmart or grocery stores if possible.
- Other uses for honey: treat burns, topical antibacterial for small cuts and mosquito bites, soothes cough, better sweetener for diabetics.



## Long-Term Food Prep & Storage *(continued)*

- If meat, eggs, or milk (complete proteins) are unavailable, a meal combining BEANS and RICE provides all 9 essential amino acids.
- Apple Cider Vinegar (acetic acid): topical antifungal/antibacterial, household cleaner, flea/tick repellent. (Caution while taking insulin or certain diuretics)
- Vitamins and minerals: A, C, D, Ca+ and zinc are important, but this topic is too broad to discuss here. Store a variety of specific vitamins you require or get multivitamins to supplement what may be lacking in an inadequate diet.
- Alcohol, especially vodka: fire starter, alcohol stoves, hand sanitizer, antiseptic.

Below are DIY instructions for making food packs using 1-gallon Mylar bags. Though not the most efficient for stacking, these smaller packs are IDEAL TO DISTRIBUTE to many people and are EASY TO CARRY in backpacks by those on foot. They can also be used for barter. Know that much larger 5-gallon Mylar bags and buckets with gamma lids are other options.

### MAKING MYLAR PACKS OF DRIED FOOD

Foods such as oats, beans, rice, wheat, pasta, popcorn, freeze-dried foods, sugar, salt, cereal, powdered milk, etc can last 10+ years. NEEDED ITEMS:

- Mylar bags, 1-gal, 10"x14", 5- or 7-mil thick
- Oxygen (O<sub>2</sub>) absorbers, 300 or 500 cc
- Scoop and maybe a funnel
- Clothes iron or hair straightener
- Permanent marker



1. PREP. Set up your assembly line. Open Mylar bags (but NOT O<sub>2</sub> absorbers yet!) Find a box that can stand the Mylar bags upright – or ask a friend to help.
2. FILL THE BAGS. Using a scoop, fill Mylar bags to about 4" from the top. Shake the contents down, add a little more. Do not overfill. Leave room at top.
3. PUT OXYGEN ABSORBER ON TOP OF FOOD. Use one or two 300cc OR one 500cc absorber per bag. Do not leave O<sub>2</sub> absorbers exposed to air more than 30 minutes. Use them all or reseal them ASAP.
4. SEAL MYLAR BAGS. Expel as much extra air as you can. Then use a hot iron or hair straightener to seal the open end. This may take practice. Squeeze the bag to ensure it does not have leaks.



LABEL BAGS. Some will label the bags before step 2. Write name of contents and date:  
"RICE, 05/2021"



## Long-Term Food Prep & Storage *(continued)*

Next day, the bags may look vacuum-sealed, but not always because air contains a lot of nitrogen.

REMEMBER: Mylar bags are NOT rodent proof, so place in a sealed plastic tote.



FOODS that only last 2-5 years: whole-wheat flour, pearl barley, brown rice, brown sugar, potato chips, granola, jerky, seeds/nuts, need more frequent rotation.

### INTERNET SOURCES

[www.packfreshusa.com](http://www.packfreshusa.com) (Ola)

[www.primalsurvivor.net/mylar-bags-food-storage](http://www.primalsurvivor.net/mylar-bags-food-storage)

[www.36ready.com/2019](http://www.36ready.com/2019)





# Long Terms Food Storage

## **LONG TERM FOOD STORAGE AND WHY YOU NEED TO START TODAY**

*Panademic Prepsters, Ola Griffin*

I help people navigate or start storing food for the long term. That is my daily job. Because of the pandemic, many people found that food was difficult to get in March, April and May 2020. I spoke to many people during that time who needed help getting started. I have had grown men cry on the phone saying they couldn't get food for their families for weeks during the early part of the pandemic here in the United States. I cried with them and helped navigate the long term food storage, and many said they would never be caught without food for their families.

I helped navigate the 'whys, the 'how-tos,' and the 'what-fors.' But let me tell you that these were U.S. states like New York, New Jersey Connecticut and Florida, just to name a few. This was an eye opener for many people throughout the world. As stores were cleared out of products, the need to wait for the items to be restocked ensured some got items and some did not. Early on we all heard of the TP hoarders. The long lines and empty shelves as they were cleaned out within hours of opening. Most places limited the amount of each item people could take home and there are still shortages of items almost a year later.

If you haven't started storing food, please do not wait. No matter the size of your home there are ways to store food that will fit for your needs. I have one lady in Texas who lives in an RV. She is a backpacker and a prepster. Have a small apartment? There is room under your bed if you add risers to lift it and store there. There are places like your entry closet where you can add a bin or two of long term food storage. The upper part of the extra bedroom closet is another place.

The basic food for long term food storage includes rice, beans, oats, corn, wheat, flour, paste, salt, and sugar that you can store long term, and most can be stored for 20+ years.

A short term food storage is a 3 to 6 month pantry. It is also a great way to expand your regular pantry to the next level. Keeping a 6 month supply of your regularly used items by simply keeping a pad of paper by your pantry and every single time you pull something out, write it down. After 2 weeks to a month, add them up and multiply to get a 3 month or 6 month pantry of extra items on hand. Purchase these items when they are on sale and rotate as needed.

## Long Term Food Storage *(continued)*

Items include your canned goods: soups, pasta sauce, veggies, fruits, broths, chicken, tuna canned beans, tomato sauces and so forth. Your usual items such as mac n' cheese, quick mashed potatoes, rice-a-roni and such should be added to expand your monthly or bi-monthly pantry to be a 3 or 6 month pantry.

Remember, the seasonings are important. Add chili seasoning packets or taco seasoning to ensure you can open canned beans and make a simple chili dinner for your family. Jars of peanut butter and crackers are great to keep on hand. Use your list to ensure you have those items that you and your family have come to rely on.

Thank you from our family to yours,

*Pandemic Preppers*





# Mick's Gardening Tools

**[Question]** Mick, can you tell me what all these tools are and what you do with each? I have a few, but need to get that big one?

**[Mick's Answer]** The big red and black one is called a broad fork. I don't own one of those. I borrowed it. So, someone else better tell you what it's for. <https://www.youtube.com/watch?v=gm0SPAuDrK8>  
As far as the other tools, here's a rundown.



**(1) Watering Can:** it sounds silly, but that's for watering when you don't have a hose or a sprinkler or a drip irrigation system or even rain. Our hose won't stretch to the back garden (I would need about 200 feet of hose, and what a pain!). So I water the gardens with watering cans. I have 24 of them, 8 in the front garden and 16 in the back garden. These are especially necessary when we're in a drought, because then I have to water everything by hand.

## Mick's Gardening Tools *(continued)*

Next to the broad fork is a **(2) Grub Hoe**. It is used for peeling back sod from a grassy area that you want to use for gardening. It is also used for digging trenches, hilling potatoes, and cutting through tree roots that are in your garden space (I have cut through tree roots an inch in diameter, with only one or two whacks of the grub hoe). When I was about 42, I used that tool (along with the grape hoe, which I'll get to in a minute) to clear a 4-ft-by 60-ft area of lawn, and prepare it for planting herbs. I took it from grassy area to ready-to-plant in about 4 hours.

**(3) The Grape Hoe** is behind the watering can. It is similar to the grub hoe except that the head is wider and is at a less steep angle with the handle. It can also clear sod, but it is better for weeding large areas and working up the cleared ground for planting. It's great for taking out large weeds, clumping weeds like crabgrass, large burdock plants, and even small bushes. It will also hill potatoes and cut through tree roots.

Next to the grub hoe is a **(4) Stirrup Hoe** (also called a scuffle hoe or a hula hoe). It is used for cutting off weeds just below the soil level, and it allows you to weed large areas quickly and easily without moving a bunch of soil while you're weeding. The blade on the one shown is 7 inches wide. I also have this tool in versions with a 5-inch blade (I don't use this one too much) and a 3-inch blade (very helpful for weeding between onions or beets or other closely spaced plants).

**(5) The Digging Fork** (also called a potato fork) has the yellow handle. It is used for digging potatoes. I also sometimes use it when I want to dig up a deep-rooted perennial plant for transplanting (this is how I dug up some comfrey for Natalie on Friday).

Directly behind the watering can is a **(6) Cobrahead Weeder**. It is used for weeding right up next to your garden plants, so that you can get out the weeds without damaging your plants and without having to get on your hands and knees and pull them by hand. It is good for closely spaced plants like onions and beets. It can also help clear areas where there are lots of dandelions or small/medium burdock or thistle plants. I also used this tool for marking my rows for planting, and for digging shallow furrows for planting bean seeds and such.

The last tool behind the watering can has red near the bottom. That's a **(7) Garden Weasel**, and it's a rotary cultivator (basically a shallow rototiller). I use it to break up clods of dirt after roughly working up the soil with my grub hoe or grape hoe. **(8)** On the table I have an 11 1/2 inch hori-hori, a digging knife with a 7-inch double-edged blade (one edge is serrated and the other edge is smooth). This tool is my go-to for transplanting seedlings and small plants, and for digging and transplanting perennials that I want to move to other parts of the garden. It's also the tool I usually use when harvesting lots of herbs at once (way more efficient than scissors). The last tool on the table was a long metal file, which I used for sharpening my tools.





# New Respiratory Disease in Dogs

There have been several news articles on a new respiratory disease in dogs. The New Hampshire Veterinary Diagnostic Laboratory has been investigating these cases since fall of 2022 with an increasing number of cases in 2023. The affected dogs will present with symptoms that initially look like Kennel Cough: nasal discharge, sneezing, fever, runny eyes, cough, decreased appetite and lack of interest in playing. Kennel Cough will usually run its course in 3 weeks with gradual improvement and complete recovery in that time. However, with dogs suffering from the new disease the symptoms persist longer, with some dogs progressing on to pneumonia. Dogs with this disease haven't shown much improvement when treated with standard drugs for Kennel Cough. The mortality rate appears to be low, but as the investigation is still ongoing the actual mortality rate is unknown.

The diagnostic lab has been analyzing samples from these cases to try to determine a cause. One hallmark of these cases is that they test negative for all known canine respiratory pathogens including viral, bacterial and fungal diseases. Covid 19 has also been tested for and not found. The lab did identify a "bacterial-like organism, similar to Mycoplasma." Currently this organism is the prime suspect. Mycoplasmas are a unique form of very small bacteria that have some properties more like viruses than bacteria. Mycoplasma pneumonias have been known in many species for many years. Results at this point are preliminary. As more research comes in perhaps there will be more answers.

Currently this disease has only been seen in dogs. There is no evidence at this point, that either humans or other animal species are at risk.

In the meantime, I would encourage you to take measures to try to prevent exposure of your pet dog to other dogs. So, avoid boarding kennels and dog parks or anywhere your dog is exposed to dogs from other households, if you can. Try not to leave your dog at the groomers any longer than necessary. When going to the vet, try to pick less busy times like the first appointment of the day. If the clinic lets you wait in the car with your dog till appointment time, that could also help decrease exposure. You can ask your vet's office if there has been much incidence of this disease in your area. If your dog does come down with symptoms, then seek veterinary care.

*Source:*

Canine Respiratory Outbreak | New Hampshire Veterinary Diagnostic Laboratory (unh.edu)



# Off Grid Laundry Options

There are many options when it comes to off-grid laundry. This is to give you some ideas to build from. Even if you don't have the time or resources to buy special equipment eyeball some items around the house that will allow you to create an effective solution. Whatever you choose to use, put in some time to practice with it. It does not have to be a large load. Even a few T-shirts will help you come up with a process and ways to improve the solution.

## 1) Qty (1 - 3) 5 gallon bucket system:



## Toilet plunger with holes in it:



## Off Grid Laundry Options *(continued)*

Or, **washing wand** [https://www.amazon.com/EasyGoProducts-Hand-Powered-Clothes-Washing/dp/B00YQCOCAM/ref=sr\\_1\\_2](https://www.amazon.com/EasyGoProducts-Hand-Powered-Clothes-Washing/dp/B00YQCOCAM/ref=sr_1_2)



2) Old fashion washing machine:



3) Hand powered washing system - WonderWasher

[https://www.amazon.com/gp/product/B002C8HR9A/ref=ppx\\_yo\\_dt\\_b\\_search\\_asin\\_title](https://www.amazon.com/gp/product/B002C8HR9A/ref=ppx_yo_dt_b_search_asin_title)



4) **Modern washing machine with battery power back-up.** Plan to manually add water unless you have an off grid pressurized water system too.





# Preserving Eggs by Waterglassing

**[Erin]** My usual OOLF (Out of left field) question for this week. If one waterglassing eggs for preservation, is pickling lime the ONLY lime recommended? What about Dolomite lime? Thank you in advance.

**[Natalie]** I don't know what Dolomite lime is... is it the lime they sell in big bags at feed mills and Tractor supply? Because I believe Mick said that the lime in big bags at feed mills can be used, and it's cheap. I wait for her to clarify because I've only used the pickling lime.

**[Mick]** Great question, Erin. I wouldn't try using dolomite for waterglassing eggs. Dolomite is made up mostly of magnesium carbonate and calcium carbonate, whereas pickling lime is calcium hydroxide. Pickling lime is much more alkaline than either mag carb or calc carb, and so the pickling lime would be a much better preservation agent for the eggs than the dolomite would be.

Natalie is correct. Pickling lime is also called hydrated lime or slaked lime. Any grain elevator or feed store should carry it. You have to make sure to ask for slaked lime or hydrated lime; if you just ask for "lime," they'll think you want agricultural lime, which is calc carb or a calc carb/mag carb mix. I just called our local feed store, and they have 50-lb bags of hydrated lime for \$21.89. This is double what it cost in 2020, but it's still a good deal. Given that a 1-lb bag of Mrs. Wage's Pickling Lime is well over \$3, the feed-store price for 50 lbs is an absolute steal.

**[Donna]** Now, do these eggs need to be fresh from a farm or can they be store bought free range?

**[Mick]** The eggs must be fresh from a farm, unwashed, and without dirt or chicken mess on them. Eggs that have been washed or even just rinsed off will not work for waterglassing.

**[Jacquie]** As an aside, I water glassed 5 dozen eggs over a year and a half ago. They are getting pretty old, so I have been feeding them to the dogs; but they are perfectly fine. At this age, the yolks don't stay together and formed; but they are fine for scrambling or baking. Or for dogs!

**[Mick]** Just yesterday, my son and a friend of mine cracked open some eggs that I waterglassed in March 2020 or March 2021. (I've been too afraid to crack them, so they have just sat until somebody who wasn't chicken decided to evaluate them.) The yolks were runny and the whites had browned some, but they were NOT rotten. My friend took all of them home (four 5-gallon buckets) to cook and feed to her chickens over the next few weeks. It's unbelievable to me that the waterglassed eggs are at least 2 1/2 years old (and maybe 3 1/2, depending on which bucket she opened), but the eggs are still good enough for animal feed.

## Preserving Eggs by Waterglassing *(continued)*

**[Mick]** Epilogue: Last week, we were talking on this thread about the preservation of eggs by a process known as waterglassing. This is a topic that we discussed quite a bit probably two years ago. For those who are new here in the past couple of years, here's a recap on waterglassing: Eggs can be preserved for a number of months if they are stored in a solution made from water and calcium hydroxide (also called slaked lime, hydrated lime, or pickling lime). As mentioned above, the eggs must be farm fresh (not store-bought), unwashed, and free of grime on the shells. They should also not have been refrigerated. And of course, the shells must not have any cracks in them. The eggs are carefully put into a large glass jar, a ceramic crock that has a lid, or a food-grade plastic bucket. They are then covered in a solution made from one ounce of slaked lime per one quart of water. The eggs should be covered by the liquid by at least a quarter inch; more would be better. The lid of the bucket/crock/jar should be tight-fitting in order to prevent evaporation of the liquid, and the container of waterglassed eggs should be stored in the coolest-but-not-subject-to-freezing location that you have available (like a basement, root cellar, etc.). I'll be honest, though... the last eggs that I waterglassed (in March 2021) stayed in my dining room, out of direct sunlight. In the summer, the temperature in that room would reach the high 70s or low 80s (we don't have air conditioning). The eggs sat there for over 2 1/2 years until my friend took them home to feed to her chickens a week or so ago (early November 2023). she told me that there were 3 dozen eggs in the bucket, and only one of the eggs was rotten.

Here's a really good article on waterglassing eggs; it's definitely worth printing out:

<https://thehomesteadingrd.com/water-glassing-eggs/>

Here's a good video on waterglassing:

[https://youtu.be/iucDQQFijNw?si=ff-5joXcWY7\\_kA4Z](https://youtu.be/iucDQQFijNw?si=ff-5joXcWY7_kA4Z)





# Make a Self-Supporting Garden Trellis

## GARDEN TRELLIS EXAMPLE - SQUASH PUMPKINS

This document contains design concepts for a self-supporting garden trellis. In the photos are 16-foot cattle panels bent to make an arch and secured to itself with carabiners and chain. The total heights of the arch (with 16-foot panels) is 6 feet, so the 8-foot panels would be about 3 feet tall. The panels are able to sway and move with the wind.



### Materials List

- 16-foot cattle panel
- 16 feet of chain (two 8-foot piece)s
- 4 carabiners

### Price Reference List (12/20)

- Qty 1 of 16-foot cattle panel - \$27
- Qty 1 of 8-foot cattle panel - \$20
- Qty 1 of carabiners - \$2
- Qty 1 roll of 2/0 double loop yellow chain - \$125 for 175 linear feet

## Make a Self-Supporting Garden Trellis *(continued)*

### GARDEN TRELLIS EXAMPLE - SQUASH PUMPKINS

Tips from Tm B. in Ohio on building the cattle panel trellis. T-Posts can be added if the arch deforms. Right now, this system is totally movable because there are no stakes.



I chose zinc plated AND painted chain so I could see it on the ground in the garden. Carabiner and chain we're purchase at Home Depot and fence was purchase at Tractor Supply Company.



I used an 8 foot board to measure my length. I made 6 trellis systems at one time so this saved time and increased accuracy of the project.

I cut chain with bolt cutters. The bolt cutters did not always go through all the way, so I used wire snips to finish those cuts.





# Some Ideas for Patio Gardening



## Some Ideas for Patio Gardening *(continued)*





# Sprouting 101

## Introduction

So you've prudently stocked some nonperishable food supplies for an emergency (such as canned goods, rice and grains). That's good. Maybe you've tried your hand at gardening some of your favorite vegetables, or taken the time to learn something about foraging wild edibles. Even better.

Whatever prudent steps you've taken to hedge against food scarcity, you know that having a supply of nutritious and healthy food is an essential aspect of survival. But what are your options when your food cache runs low and or expires? Or what if you don't have the the right conditions, resources, and/or know-how to grow vegetables out of season?

The good news is that there's one seed variety with a relatively quick growing cycle that will provide you with fresh vegetables year-round, and it's easier and cheaper than any other options.

## Sprouts

The process of sprouting involves germinating seeds and legumes, and then eating them raw. Sprouts and microgreens can come from a variety of seeds such as radish, green pea, mung bean, red clover, wheat, garbanzo bean, lentil, yellow soybean, and many more. Not only are they great on their own, you can add them to almost any recipe -- and they're loaded with nutrients!

## Benefits

- **Extremely healthy.** Sprouts are high in nutritional value and loaded with vitamins and minerals. They contain proteins that are both high-quality and high-quantity in the form of amino acids and enzymes, which aid in healthy digestion and are known to work as cancer-fighting agents.
- **Easy to grow.** Sprouts will grow at all times of the year indoors and you won't need much space to make it happen. They also don't need soil; just the basics of water, air, and a bit of sunshine on the last day or two of the short growing cycle. In as little as three days, sprouts can be consumed raw without the need for cooking them.
- **Inexpensive.** What could be more cost effective than some seeds and simple sprouting trays? Certainly not an outdoor garden which can require a good plot of land, gardening tools, watering system, etc.

## Growing Sprouts

- Measure out your seeds according to the guidance on the seed package.
- Soak your seeds for 6-12 hours in a seed sprouter tray or simple jar (the warmer the temperature, the less soaking time is needed).
- Drain the water and spread seeds evenly.

## Sprouting 101 *(continued)*

- Cover your seeds in the container with a towel.
- Place them away from direct sunlight.
- Rinse and drain the seeds 2-4 times a day, depending on the seed. Refer to the seed package for guidance.
- On about the 3rd or 4th day put your sprouts in sunlight on the windowsill or near a window so they can develop chlorophyll.
- Continue to rinse and drain twice a day until the sprouts have grown up to 1-3 inches (depending on the sprout).

For the best results, be sure to check the specific growing instructions of each sprout type.

### Other tips

To help you get the best yield and keep your sprouts fresher for longer, here are some added tips for your sprouting effort:

- **Seeds.** Make sure to purchase seeds specifically packaged for sprouting. Seeds from the bulk bin at your local grocery store are mostly intended to produce vegetables for cooking and aren't designed for sprouting.
- **Care requirements.** Different sprout seeds can have some unique requirements for attention and care. For example, chickpeas and soybeans require some extra cleaning time and attention since they are poor germinators, so you may want to start with green peas, hard wheat, lentils and kamut. The latter are much easier by comparison.
- **Consumption.** Fresh sprouts can be eaten immediately. Proper storage can extend their life, but don't expect them to last in the refrigerator for weeks on end. Plan your time, supplies and needs accordingly to optimize your sprouting effort. Typically there's no need to sprout more than your family can consume in a 5-7 day window.
- **Storage.** Fresh sprouts are best stored in a sprout bag, glass container or plastic container, and placed in a refrigerator or cooler location.

### Some seed sources

- <https://www.ufseeds.com/>
- <https://www.trueleafmarket.com>
- <https://www.seedarmory.com>
- <https://www.thesproutingcompany.com>
- <https://www.harrisseeds.com>
- <https://www.sproutpeople.org>
- <https://sproutman.com>





# Sprouting 102 - Detailed Methods

## Seeds

Start with seeds that are raw and untreated. Bean seeds such as fava, black, and navy can be sprouted by following the information provided for pinto beans on the chart.

## Soaking Time

The number of hours listed don't need to be followed exactly. Most seeds will do fine if soaked for anywhere between 8 and 14 hours.

## Sprouting Methods

- **Tray.** Soak and rinse the seeds using a perforated plastic tray or wooden box with a plastic screen bottom as a container for the growing stage. Keep the top of the tray or box covered with a clear sheet of plastic and the bottom of the container propped up to allow drainage. This method is especially useful for shoots that you want to expose to sunlight so they can develop chlorophyll.
- **Jar.** Soak the seeds for the specified length of time (or overnight) in three times their volume of water. Next, place the swollen kernels in a jar fitted with a nylon mesh, cheese-cloth, or plastic screen cover so that its secured by a canning ring or rubber band. Invert the container, at an angle, so the water can drain and leave the jar in a convenient place (but not in direct sunlight). Flush the developing sprouts with clean water two to four times a day, as specified, until the shoots are ready for eating. Suspended nylon or cotton bags can be substituted for jars in this method.
- **Towel.** Spread pre-soaked seeds evenly over the surface of one moist towel and cover them with another towel. Put the cloths and seeds in a plastic bag and set the bundle in a warm place. Give the seeds fresh moisture each day by misting them. If the sprouts are not ready to eat after two days, the towels should be changed to prevent spoilage. This method works well for grains and larger seeds.
- **Clay.** Seeds listed for this method produce a gel when soaked and are difficult to rinse. Put such "mucilaginous" seeds with an equal amount of water into an unglazed clay flowerpot saucer, then set the saucer in water and cover it with a plate. The liquid can reach up to one-half inch short of the rim. No rinsing should be needed. If the seeds become too dry, mist them. If they're too wet, remove the top plate for a day.
- **Soil.** Soak the seeds and let them sprout in a jar or other container for 16 to 24 hours. Next, spread them in a box that's lined with a one-inch layer consisting of equal parts moist peat moss and topsoil. Cover the container with a black plastic sheet. When the plants are an inch tall, remove the sheet, place the box in sunlight, and add water as needed. This method is commonly used to sprout immature greens for salads. It can also be used to grow wheat, rye, and triticale grasses, which are then juiced for their nutritional content.

## **Sprouting 102 - Detailed Methods** *(continued)*

### **Ideal Temperature**

Sprouts will usually grow at slightly higher or lower temperatures than the chart indicates. At lower temperatures, fewer seeds will germinate and the process will take longer.

### **Water Rinses**

Rinse water should be cool or room temperature, neither cold nor warm. If you use tap water, let it sit in a window for a day or more so the chlorine can evaporate. Sprouts will need to be rinsed most often when the weather is hot and dry.

### **Sprouting Time**

The flavor of sprouts changes constantly as they grow. Sample them at different stages to find out when they best suit your taste.

### **Price of Seeds**

Sprouting seed prices can vary greatly by source, changing dramatically in short periods of time. The figures on the chart should only be used as rough estimates.

### **Suggested Uses**

Eating raw sprouts alone or added to other food, such as sandwiches and salads, is the best way to obtain their full nutritional benefits in most cases.





# Seed Sprouting Chart

SEED	METHOD	AMOUNT	SOAK	TEMP	RINSES	SPROUT TIME	LENGTH	GREENED	PRICE	KEY
Azuki Bean	jar	1/2 C	12	65-85	3-4	3-4	1/2 - 1 1/2		.79	C = Cup T = TBSP
Alfalfa	jar, tray	2 1/2 T	8	60-85	2-3	4-6	1 1/2 - 2	Yes	2.45	
Almond	jar, towel	2 C	16	70-85	2-3	3-4	1/4		3.69	GREENED = These sprouts can be put near a window where their leaves will develop chlorophyll and turn green.  LS = Length of seed.
Barley	jar	1 1/2 C	12	68-80	2-3	2-3	LS		.39	
Buckwheat (Unhulled)	soil	NA	20	65-80	NA	8-12	5 - 7		.59	
Cabbage	jar	1/4 C	10	60-85	2-3	3-5	1 - 1 1/2	Yes	2.85	
Chia	clay	NA	NA	65-85	NA	3-5	1 - 1 1/2	Yes	2.98	
Chinese Cabbage	jar	3 T	8	65-85	2-3	4-5	1 - 1 1/2	Yes	2.19	
Clover	jar, tray	2 1/2 T	8	65-85	2-3	4-6	1 - 1 1/2	Yes	2.39	
Corn	jar	1 1/2 C	20	65-85	2-3	2-3	1/2		.29	
Cress	clay	NA	NA	50-72	NA	4-5	1 - 1 1/2	Yes	3.85	
Fenugreek	jar	1/4 C	10	65-85	2	3-5	1/2 - 2		1.53	
Flax	clay	NA	NA	65-80	NA	2-5	1 - 1 1/2	Yes	.69	
Garbanzo Bean	jar	1 C	14	68-85	3-4	3	1/2		1.10	
Kidney Bean	jar	3/4 C	14	68-85	3-4	3-4	1 - 1 1/2		.87	
Lentil	jar	3/4 C	10	60-85	2-3	2-3	1/4 - 1/2		.75	
Lettuce	jar	3 T	8	65-85	2-3	4-5	1 - 1 1/2	Yes	4.98	
Millet	jar	1 1/2 C	10	70-80	2-3	3	1/4		.45	
Mung Bean	jar	1/3 C	15	68-85	30-4	3-5	1 - 3		1.29	
Mustard	jar	3 T	8	65-85	2-3	4-5	1 - 1 1/2	Yes	1.29	
Oat	jar, towel	1 1/2 C	1	68-80	1-2	3	LS		.39	
Pea	jar	2 C	12	50-72	2-3	3	1/4 - 1/2		.75	
Peanut	jar	1 C	14	68-85	2-3	3-4	1/4 - 1		1.39	
Pinto Bean	jar	3/4 C	14	68-85	3-4	3-4	1 - 1 1/2		.83	
Popcorn	jar	1 1/2 C	16	68-85	2-3	2-3	1/2		.45	
Psyllium	clay	NA	NA	65-80	NA	4-5	1 - 1 1/2	Yes	3.08	
Purslane	clay	NA	NA	65-80	NA	4-5	1 - 1 1/2	Yes	4.39	
Pumpkin	jar	1 1/2 C	10	65-85	2	2-3	1/4		3.59	
Radish	jar	3 T	10	60-85	2-3	4-5	1 - 2		2.39	
Rice	jar	1 1/2 C	12	55-80	2-3	3-4	LS	Yes	.49	
Rye	jar	1 C	12	50-72	2	2-3	LS		.25	
Sesame	jar	2 C	10	68-80	3-4	3	LS		.95	
Soybean	jar	3/4 C	12	65-85	3-4	3-4	1/2 - 2		.39	
Spinach	jar	3 T	10	65-85	2-3	3-5	1 - 2	Yes	4.98	
Sunflower (Hulled)	jar	1 C	10	60-80	2	2-5	1/4 - 1 1/2		1.19	
Sunflower (Unhulled)	soil	NA	20	60-80	NA	8-12	4 - 6		.75	
Triticale	jar	1 C	12	60-80	2	2-3	LS		.34	
Turnip	jar	3 T	10	65-85	2-3	3-4	1 - 1 1/2	Yes	2.39	
Wheat	jar	1 C	12	60-80	2	2-3	LS		.23	

(Per  
Qt Jar)

(Hours)

(°F)

(Per  
Day)

(Days)

(Avg  
\$/Lb.)



# Sprouting 103 - Seed Recommendations

If you are just starting out, here is a list of our top recommendations for a well-rounded, healthy and nutritious sprout yield.



**Alfalfa sprouts** are a popular sprouting variety featuring a mild taste. Add it to any dish for a big dose of nutrition and extra crunch. They are an excellent source of minerals, calcium, magnesium, and potassium – all crucial for muscle and bone health.

Alfalfa seeds will take 3-7 days to sprout. Be sure to eat them raw since the nutritional value in these sprouts will diminish when cooked.



**Beet sprouts** are more challenging to grow and take longer to sprout (typically 11-21 days from seeds), but they are worth the wait! Their taste is slightly earthy and sweet, like full-sized beets. Their striking hot pink stems and bright green leaves make any dish pop.

Not only do they look good, they're loaded with nutrients like Vitamin A, B, C, E, and K. They're also packed with iron, calcium, and protein.



**Broccoli sprouts** don't taste like broccoli but add a mildly spicy, nutty flavor to any dish. They also add a striking green color to your dishes, are high in antioxidants and are a good source of fiber, folic acid, and vitamins A, C, and K.

Expect edible-sized sprouts from seed after 5 days. Like most thin sprouts, these are best consumed raw to maintain their nutritional structure and value.

## Sprouting 103 - Seed Recommendations *(continued)*



**Chickpea sprouts** and other beans are sometimes difficult to digest, and sprouting helps to improve digestion. They are also more protein-rich than other sprouts and are packed with many nutrients such as Vitamin C and iron.

Since chickpeas are larger, they need to be soaked for longer and require more frequent rinsing and draining. They are one of the quickest beans to sprout (2 days). Enjoy them raw in salads or cooked in soups and burgers.



**Green pea sprouts** grow tasty, refreshing sprouts and have a sweet, mild flavor that adds crunch to salads or sandwiches. They are packed with Vitamin A, B, and C and minerals such as calcium, iron, and phosphorus.

Expect to harvest sprouted green peas in as little as 2-3 days. Due to their size, green peas need to soak longer and require more frequent rinsing and draining.



**Kale sprouts** have a unique shape with grey-green and violet purple-toned veins. They provide a crisp texture with a sweet flavor and undertones of nuts, pepper, and classic brassica bite. Kale sprouts are a good source of vitamin C, folic acid, calcium, and potassium and can be enjoyed both raw or cooked by lightly sauteeing them.

You can harvest kale sprouts in 3-6 days, depending on how long you want them to grow.



## Sprouting 103 - Seed Recommendations *(continued)*



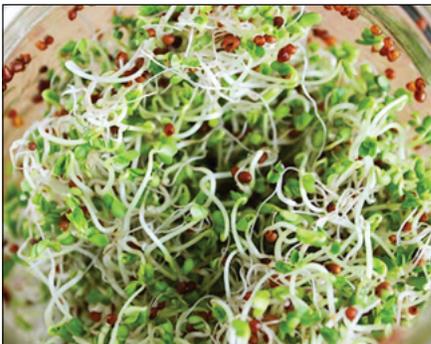
**Lentil sprouts** contain the most protein of all sprouts, are very low in calories, and will add great crunch with a rich, nutty flavor to any dish. They are rich in vital nutrients such as thiamine, copper, manganese, iron, and vitamin C.

Lentil sprouts can be eaten raw or lightly cooked to soften in 2-4 days after sprouting. Remember that split lentils won't sprout; you must purchase whole lentils.



**Mung bean sprouts** are another popular sprout. They originated in Asia and are widely used in diets there and in the West. They are high in protein and fiber, low in calories, and rich in vitamin C, calcium, and iron. With their mildly nutty flavor and bigger size, they go well in cooked dishes such as stir-fry or eaten raw in salads.

These sprouts take just 3-4 days to grow to an edible size and typically have 2-4 inch long white stalks.



**Mustard sprouts** look very similar to alfalfa sprouts and have a spicy, earthy flavor. They add a bit of spiciness to sprout blends or are great on their own. They are loaded with vitamins and minerals, including calcium, iron, zinc, magnesium, and selenium.

Mustard sprouts are ready to harvest in 3-6 days. The longer the sprouts mature, the more intense the flavor will become.



## Sprouting 103 - Seed Recommendations *(continued)*



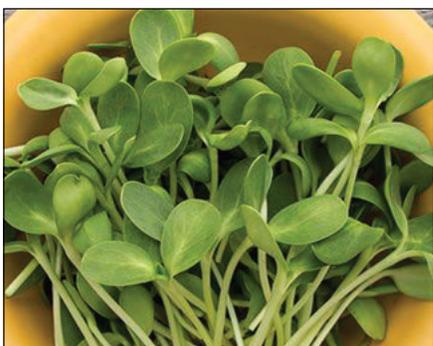
**Radish sprouts** come in just as many diverse varieties and taste similar to mature radishes but are less spicy. Their slender white and red stems look stunning as a garnish on salads, sandwiches, sushi, or tofu scramble.

Radish sprouts are rich in vitamin B and C, folate, and manganese and will sprout within 3-6 days from seeds.



**Red clover sprouts** have a long white, thin stalk with a light green top, providing a mild flavor and crunch. You can harvest red clover sprouts within 5-6 days from seeds. Due to their fragility, they should be eaten raw to maintain the nutrient content.

Like many other sprouts, these sprouts are rich in protein, vitamins, iron, and calcium.



**Sunflower sprouts** are another interesting sprout to add to dishes with their nutty flavor, more prominent size, and crunchier, crispier texture. They are loaded with vitamin D, calcium, and iron. These sprouts are more calorie-dense and high in fat (mostly healthy unsaturated fat), so go easy.

Expect a harvest within 12-14 days, since they will take longer to grow due to their size.





# Squash: How to Ensure Pure Seed

## [Carolyn]

Here's an excellent video entitled "How to Hand Pollinate Squash and Pumpkin Flowers: Seed Saving."

<https://youtu.be/K24vXkYb2x0>

## [Mick]

Carolyn, thanks for the link. I really enjoyed this video and learned a lot from it. A couple of points:

1. At the end, the lady talks about Suzanne Ashworth's book "Seed to Seed." It is a wonderful book, as she said. I would add that those interested in the book should make sure to get the second edition. I have both the first and second editions, and the second really is much better.
2. The lady mentions "zucchini, pumpkins, spaghetti squash, butternut squash..." Then she says that unless you're only growing one type of squash, then you'll usually need to hand-pollinate in order to ensure pure seed. However, this isn't necessarily the case. Edible squashes come in four different species; and while varieties within the same species will cross with each other, the varieties of different species will not (with one caveat that I discuss below). For example, the species *Curcubita pepo* includes zucchini, yellow summer, pattypan, spaghetti, and acorn squashes, as well as some varieties of pumpkin. These will all cross with each other. However, they will not cross with the *Curcubita maxima* squashes (which include the Hubbard and Sweet Meat squashes as well as some of the pumpkins). Nor will the *C. pepos* cross with the *Curcubita moscata* squashes (which include the butternuts, the "cheese" squashes, the *delicata* squashes, and some varieties of pumpkin). Nor will the *C. maximas* and the *C. moschatas* cross. Now for the caveat. The fourth variety of edible squash is *Curcubita argyrosperma* (which until fairly recently was called *Curcubita mixta*, in case you have gardening books that use that name). The *moschatas* can cross with the *mixtas*. But the *mixta* varieties are uncommon in the US. Only a handful of seed houses carry a *C. mixta*; the only variety I could find was the Green Striped Cushaw. Although edible, it's not very tasty (I used to grow it, and bleh) and it's usually grown as an ornamental. Thus, for practical purposes, we can ignore the *mixtas* in the discussion of the crossing of squash varieties. What all of this means is that you can safely grow one variety of *C. pepo*, one variety of *C. maxima*, and one variety of *C. moschata* and be able to save pure seed without the need to hand-pollinate.



# Summer Outdoor Bulk Laundry Experiment

**Ideas for washing bulk items** (sheets, towels, blankets, T-shirts, jeans):

How hot can the sun warm water on an average day? I had all the wash items in the black 50 gal trough soaking in a homemade enzyme cleaner while the water warmed by the sun. The kiddie pool had no wash items and was used for the clean rinse. The pot had a heavily soiled (from an extreme bloody nose incident) Large T-shirt also with enzyme cleaner.



Beginning temperature outside 75°F.

Time	Kiddy Pool Temp	Trough Deep Temp	Trough Shallow Temp	Canning Pot Temp
10:30am	64°F	64°F	64°F	64°F
11:30am	80°F	70°F	76°F	76°F
12:45pm	86°F	74°F	80°F	88°F
1:45pm	88°F	84°F	86°F	90°F
3:30pm	85°F	85°F	86°F	90°F

Outdoor high was 85°F and the wind started to pick up and cool the ambient air temperature around 2pm.

In less than 30 mins I was able to hand wash and hang out to dry on a clothesline a fitted twin sheet, wool socks, toddler denim overalls, 3 large T-shirts, 3 boys underwear, 2 washcloths, and a kitchen hand towe

Laundry soap was added to the black trough and the clothes were agitated inside the trough. Since I was using such a wide container on the ground, one agitation technique that could be used was to walk in the trough and stomp the clothes down. Scrunching with hands was also done. Clothes were individually gently squeezed out and then individually rinsed in the kiddie pool. Items were then hand wrung and hung on a clothes line. Clothes are significantly wetter than when using the washing machine.



## Summer Bulky Outdoor Laundry Experiment *(continued)*



**Final smell test after dry:** No discernible difference between the hand washed T-shirts and the machine-washed T-shirts (2 of each, both washed the same day and dried at the same time). If anything, the machine-washed ones smelled less fresh than the hand washed ones. Smell test was conducted by the washer and a double-blind volunteer. Results were the same.

### **Conclusion:**

If you are looking for heating water using this passive solar method the smaller dark, tin canning pot was the most efficient. You could consider putting a few of those out in the yard if you want more warm water. None of the water actually got hot. The extended sun exposure killed more germs than the temperature of the water. Using a larger kiddie pool or trough makes it much easier to wash large items like sheets, compared to a pot, bucket or some of the portable washers you can buy. My set-up was in a full sun, but very exposed area. If you have a full sun but protected area, you could probably improve the heating potential. Another option to try for heating water is snaking a very long black hose in the sun, but you would need pressure to get water in and out of the hose.





# Tallow Soap Recipe

## Pure Tallow Soap Recipe

- 30 oz tallow or lard
- 3.88 oz 100% pure lye
- 11 oz distilled water

*\*When making soap, always measure by WEIGHT, not by volume*

Melt the tallow in the crock pot (or a pot over the stove if you're in a hurry).

Once the fat is nearly all melted, put on your safety gear and carefully measure the lye.

In an area with good ventilation (I do this under with my oven fan on), carefully stir the lye into the measured water. ALWAYS add the lye to the water- do NOT add the water to the lye, as it can result in a volcano-like reaction.

Stir this lye/water mixture until it has dissolved and let it sit for a few minutes. There will be a chemical reaction between the lye and water, and the water will become very hot, so be careful handling the container.

Place the melted tallow in the crockpot (if it's not already there), and slowly stir the lye/water mixture in.

Switch to an immersion blender (trust me, unless you want to stand there stirring for an hour, you'll use an immersion blender), and proceed to blend the tallow, lye, and water until you reach trace.

Trace is when the mixture turns to a pudding-like consistency and holds its shape when you drip a bit on top.

Trace can take anywhere from 3 to 10ish minutes to achieve.

Now put the lid on the crockpot, set it on LOW, and allow it to cook for 45-60 minutes. It will bubble and froth, which is fine. Just keep an eye on it to make sure it doesn't attempt to bubble out of the pot. If it attempts an escape, just stir it back down.

Once it has cooked for a while and passes the "zap" test (test the soap to make sure the lye has reacted with the oils completely and no longer remains in the mixture. I like to do this by grabbing a small amount of the soap mixture, allowing to cool for a second, and then touching it to my tongue. If it "zaps" me, I know there is still lye remaining in the mixture and it needs to cook longer. If it just tastes like soap, we're ready for the next step) pour/scoop it into a mold and allow it to set for 12-24 hours.

## Tallow Soap Recipe *(continued)*

Remove the solid soap from the bar, cut into bars, and allow to cure for 1-2 weeks. You can technically use the soap right away, but the dry time will produce a nicer, harder bar of soap.

### Tallow Coconut Oil Soap Recipe

- 20 oz tallow or lard
- 10 oz coconut oil (I use expeller-pressed coconut oil– it has no coconut scent and is cheaper)
- 4.37 oz 100% pure lye (where to buy)
- 9 oz distilled water

Follow the above directions for pure tallow soap, melting the coconut oil in with the tallow in the first step.

### Tallow Soap Notes:

- Why distilled water? Tap water can contain a variety of minerals which may cause weird results in the final soap. It's best to remove this variable by simply using distilled water.
- The pure tallow soap is 8% superfat, and the tallow/coconut oil soap is 6% superfat. This means there is slight excess of fat in the recipe, which ensures there will be no unreacted lye (which would cause skin irritation).
- This is the soap mold I've been using. It's cheap and perfect for smaller batches.
- This is where I get my coconut oil. I buy it in 5 gallons buckets and it lasts FOREVER.
- Does it smell weird? My tallow soap has a bit of a "fatty" smell, but it's not offensive (at least to me). And it does NOT smell like rendering tallow, which is good, because that's an icky smell.
- Can you add essential oils to this soap? Yes, you can. If you do, add it at the very end right before you place it into the mold. However, like I've mentioned in the past, it takes a LOT of essential oil to make soap smell strong. If you're using high-quality essential oils like I do, this usually isn't an option as it makes your homemade soap pretty costly, pretty quick. Therefore, I tend to leave my soap unscented. Or you can just purchase fragrance oils designed for soaping.





# The Stay-in Bin

Most of us will stay at home in a crisis, so we don't need a Bug-out Bag; we need a Stay-in Bin. This is just the basics.

- Protein sources: tuna, Spam, salmon, other canned/pouch meats
- Fat sources: olive oil (healthiest of the oils), mixed nuts
- Carb sources: canned or dried fruits and vegetables
- Coffee: you get 15 times as many cups per ounce from instant as from grounds
- Garlic: strong anti-inflammatory, keeps colds at bay, adds interest to food
- Dark chocolate: anti-oxidant, feel-good treat
- Vitamins: at minimum, C, D3, zinc and quercetin
- First Aid kit, supplemented by Neosporin, Advil and Advil PM
- Lifestraw: water purification (also Katadyn or Sawyer)
- Heavy duty Hefty bags: sanitation
- Pocket knife or multi-tool
- Duct tape: 101 uses
- Tactical flashlight
- Portable radio, AM/FM at least (crank style is good option)
- Batteries
- Sewing kit
- Toilet paper, and torn-apart t-shirts for re-useable "sanitation cloths"
- Plastic drop cloths: for catching rain, sealing gaps in doors and windows
- Binder clips: modern man's answer to clothespins
- Bleach: disinfectant, water purification
- Lighter: for your portable stove, sterilizing needles
- Cash: it may still have some value
- Large storage bin: can be used with plastic sheet for rainwater collection



# Tips For Productive Asparagus

## **Asparagus that you can harvest for 20 years - *It's an investment!***

- 1) Don't harvest for the first 2 years. Let them grow into ferns and just do their thing.
- 2) During years 3 and 4 only harvest for 4 weeks, then let go again.
- 3) All harvests year 5+ only harvest for 8 weeks and then let them go.
- 4) Snap off the spear just above ground level. Never cut below the ground level or you will ruin the crown.
- 5) Crowns will slowly lift out of the ground so every other year add dirt to the top of the bed.
- 6) Don't let the female plants produce berries unless you are planning to collect seeds. Cut all berry producing spears down so the energy goes back into the plant.
- 7) Don't cut your patch down to prepare it for the spring until the ferns are all brown and there is no green.
- 8) Mulch to overwinter the crowns and in the spring pull back the mulch to help warm the ground.

## **Building a Bed**

- 1) Dig a large trench 6-8" deep.
- 2) Use 1 year old crowns from a trusted source.
- 3) Make little mounds within the trench and drape your soaked crowns over each mound, spreading the roots out.
- 4) Cover the crown mounds and water in.
- 5) In 2 weeks you should start to see growth. Cover again with 2" of soil. Repeat this step every two weeks (3 times) until you have reached ground level again.

These notes are based on the information in this video: <https://youtu.be/s5tyAXEVxVY>



# Water Filter Recommendations

## EXISTING RESOURCES

Be sure to explore the resources already available on the CORAC Sustainability site:

- <https://corac.co/2022/10/28/what-to-do-in-a-water-emergency/>
- <https://corac.co/2022/02/15/child-personal-care-laundry-water-filtering-resources/>
- <https://corac.co/2022/01/26/do-it-yourself-water-filter/>
- <https://corac.co/2023/02/20/water-treatment-for-toxins/>

## SELECTING A GRAVITY FILTER

Here is a summary of recommendations on countertop gravity water filters.

First, you will need a housing. The stainless steel Berkey / Doulton / British Berkefeld housings are the most popular, readily available, and can utilize a variety of different filter options (discussed below). There are different sizes of housings; for example the “Big Berkey” (2.25 gallon) is typically suitable for a 1-4 person household (using it for drinking and cooking water). Here is an overview to help you select the right size of housing:

<https://www.berkeyfilters.com/pages/system-calculator>

Often, the UK-based Doulton / British Berkefeld branded housings are more cost-effective to acquire than the US-based Berkey branded housings. Here is the Doulton / British Berkefeld equivalent of the Big Berkey:

<https://www.amazon.com/Doulton-Berkefeld-Gravity-Fed-Countertop-Purification/dp/B093R8F3Q1>

Other housings are available (typically made of plastic or ceramic) and can be homemade even from simple, cost-effective materials such as 2 lidded 5-gallon buckets. For one component of a homemade filter system, you can buy activated charcoal in bulk here:

<https://buyactivatedcharcoal.com/hardwood-neutral-ph.html>

Housings can typically run multiple filters simultaneously (to increase the “throughput” of water production) but for many households only one filter need be used at a time. Plugs are available for the unused holes:

<https://www.berkeyfilters.com/products/hole-plug>

A “sight glass” spigot is also very useful to monitor the level of water in the lower chamber (note that there are different lengths depending on which housing you have, available in plastic:

<https://www.amazon.com/Berkey-SG-7-5-Spigot-Travel-Systems/dp/B00BWIX0JW>

or stainless

steel: <https://www.berkeyfilters.com/products/stainless-steel-berkey-water-view-spigot>).

## Water Filter Recommendations *(continued)*

Second, you will need to select a filter. You will likely want to filter four types of “threats:” large particulates (mud, soil, etc), organisms (viruses, bacteria, protozoa, etc), chemicals (including pesticides, pharmaceuticals, industrial chemicals, etc), and some metals (e.g. lead, fluoride). Each of the three latter “threats” requires a specific “media” to filter it; many filters combine several types of media into a single filter unit or “element.” Organisms and large particulates are typically filtered with a porous media that allows water to pass through, but not the bodies of the organisms / particulates. Chemicals are typically filtered with carbon – if this threat is a concern ensure your filter contains some sort of carbon media. Filters which address metals often have a separate / specific media which binds them inside the filter. The Doulton (aka British Berkefeld) ceramic “candle” type filters are based on a longstanding, proven design and are recommended for their simplicity and effectiveness. There are several types of Doulton candle filters:

- Sterasyl only filters organisms.
- Super Sterasyl filters organisms and chemicals. <https://berkeyfilter.com/SuperSterasyl>
- Ultra Sterasyl (formerly known as Super Sterasyl ATC) filters organisms, chemicals, and heavy metals including lead.  
<https://www.discountfilterstore.com/replacement-element-doulton-w9121214.html>
- Ultra Fluoride filters everything the Ultra Sterasyl does plus fluoride.  
<https://www.discountfilterstore.com/w9120133-british-berkefeld-7-inch-ultra-fluoride-imperial-gravity-filter.html>

Other filters such as the Berkey Black are very popular, though of a different design and not recommended by this author due to a record of lower reliability and inconsistent quality control.

It is critical to understand that no filter is perfect, and no filter will remove 100% of any contaminant. Different filters are effective to varying degrees against varying threats. For specific information, consult filter datasheets or contact the manufacturer.

### USING A GRAVITY FILTER

Understand that a countertop gravity filter is not an instant-production system due to the slow rate of flow (dripping) through the filter. Keep it filled in advance of your demand. Watch the level of water in both the upper and lower chamber, and learn to anticipate your needs. Understand that the lower (clean) reservoir can overflow if the supply from above outpaces your demand. Ceramic filters are not super fragile, but can crack if dropped or frozen when wet; don't use a cracked filter. Any filter containing carbon (Super Sterasyl, Ultra Sterasyl, Ultra Fluoride) should be replaced every 6 months (stock spare filters accordingly). If the flow rate slows dramatically before replacement, simply scrub the gunk off the ceramic element in the upper chamber to restore better flow. Consider having a spare spigot and hole plugs on hand, as these can eventually leak or break.



## Water Filter Recommendations *(continued)*

### WATER SOURCES & PRE-TREATMENT

In general, you should use the purest source of water possible as the input to your filter system. If you have a choice between a source that's likely to contain organisms vs chemicals, go with the organisms (easier to filter out). You can pre-treat the water in a variety of ways, as needed. For water with large particulates, run it through a homemade pre-filter (cheesecloth, sand trap, etc). When chemical threats are of significant concern, put the water through multiple stages of carbon filtration (e.g. a homemade filter with activated carbon, then a Doulton filter, or even a second Doulton filter). You can evaporate some chemicals, such as chlorine, by leaving a container uncovered on the counter for a day before you filter it. Distillation can also remove many chemical / heavy metal contaminants, but it will not remove chemicals which have a boiling point lower than water, and it also removes healthy minerals. Distillation is energy-intensive, so you will also need to consider how to accomplish it in a grid-down situation.

To establish a baseline for the condition of your water source, you can test it. A variety of test kits are available, depending on the threats you are concerned about. One example of a test kit is here: <https://www.amazon.com/Premium-Drinking-Water-Test-Kit/dp/B0837Z5PBJ/>

Can you filter pool water? Maybe, but it's not recommended due to the high levels of chemicals in most pools. If you have to use pool water as a source, apply the techniques listed above (evaporation, distillation, multi-stage carbon filtration) for best results.

<https://web.archive.org/web/20210618231332/https://knowledge-base.berkeywater.com/black-berkey-purification-elements-chlorine-pool-water/>

### OTHER FILTER SYSTEMS

To reduce chemical threats absorbed by your skin during showering, you can use a shower filter: <https://www.amazon.com/Rejuvia-Shower-Filter-Universal-Multi-Stage/dp/B07QBZ5XWZ/>

Whole-house filter systems can "scale up" your capability (from a countertop gravity filter providing drinking / cooking water only) to providing purified water for bathing, livestock watering, etc. However, these systems often require a pressurized source.

<https://www.livingwatersway.com> (not all their offerings are shown on their site, it is recommended you call to consult with them).





# Water Purification

**THESE PURIFICATION METHODS** can remove groundwater contamination from bacteria (*Legionella pneumophila*), protozoa (*cryptosporidium*, *giardia lamblia*), and fungi. Only proper filtration can remove chemical contaminants such as heavy metals (cadmium, lead, copper...) and nitrates from fertilizer run-off or animal waste.

- Boiling
- Chemical treatment
- Ultraviolet radiation
- Filtration



*Legionella*



*Cryptosporidium*



*Giardia*

## BOILING

Reliable and safe way to kill ALL harmful bacteria and microorganisms including viruses, giardia, and cryptosporidium. Boiling does not filter water and cannot remove heavy metals, nitrates, or chemicals.

- TEMP above 160 F (70 C) for 30 minutes kills ALL pathogens or
- TEMP above 185 F (85 C) for a few minutes kills ALL pathogens
- SUMMARY: ALL pathogens are killed as a ROLLING BOIL is reached at 212 F (100 C)

## CHEMICAL TREATMENTS

- CAUTION consuming excessive IODINE during PREGNANCY, with INFANTS and CHILDREN, persons with THYROID disease, and persons taking LITHIUM medication. Consult your provider.
- Effectiveness of chemical treatment is related to temperature, pH, clarity of water, and time.
- Cloudy water requires higher concentrations of chemical to disinfect. If water is cloudy or has visible particles, then strain through a cloth before treating to remove as much as possible.
- When using liquids to treat water, the chemical should sit for at least 30 minutes. If using tablets, let water sit for 30 minutes after tablet has dissolved.
- WARMER WATER WORKS BEST. Chemical disinfection is less effective with cold water. Best temp is above >60 F (16 C). If water temp is below <40 F (4 C), increase treatment time to 1 hour.
- Iodine is not effective against cryptosporidium and minimally effective against giardia. Use chlorine.

## IODINE



- LIQUID 2% TINCTURE of IODINE: Add 5 drops per quart (1 L) when water is clear. Add 10 drops per quart when cloudy. Let sit 30 minutes for water over 68 F (21 C).

## Water Purification *(continued)*



- **POTABLE AQUA TABLETS:** Use 2 tablets per quart and wait 30 minutes. Potable Aqua Aqua Plus includes second agent that removes the iodine taste. After 30 minutes of treatment, add 2 tablets of PA Plus per quart, stir well, and wait 3 minutes before drinking.

After iodine treatment is complete, may add 50 mg Vitamin C per 1 quart to improve taste.

### CHLORINE

Chlorine dioxide (ClO<sub>2</sub>) products are stronger, more effective germicides than iodine. Another advantage is after disinfecting, no elemental chlorine remains. Do not confuse ClO<sub>2</sub> with household bleach (NaOCl) which is sodium hypochlorite, listed last.



- **AQUA MIRA SOLUTIONS (ClO<sub>2</sub>):** Place 7 drops Part A and 7 drops Part B Activator in mixing cap. Wait 5 minutes until solution turns yellow, then pour solution into water to be treated. Wait ~15 min. If Cryptosporidium is suspected, double dose of Part A and Part B and wait for 30 minutes.



- **KATADYN MP1 TABLETS (ClO<sub>2</sub>):** One tablet treats 1 quart (1 L) of water. Bacteria and viruses are killed in approximately 15 minutes with water at 68 F (21 C). Cryptosporidium and giardia purification takes ~4 hours.



- **CHLORINE BLEACH (5.25% NaOCl):** Put 2 drops of bleach in 1 quart (1 L) of water or 8 drops per gallon. Let stand 30 minutes. If water is cold or cloudy, wait 60 minutes. (Note: some elemental chlorine will remain in water)

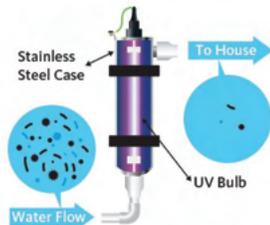
### ULTRAVIOLET LIGHT (UV)

UV kills 99.99% of pathogens in water. UV energy damages the microorganism's DNA so it cannot reproduce or infect humans.

- UV light does not remove particles, bad taste or odors, heavy metals, or nitrates.
- Some portable UV systems use power so LOW that it does not kill some microorganisms like Giardia and Cryptosporidium. Ensure your system is strong enough.
- Water must be CLEAR without large particulates or cloudiness.
- **DISADVANTAGE:** Electricity is required



Hydro-Photon Steri-PenR



Steri-Pen Adventurer Opti  
UV Water Purifier®



Household UV Unit



## Water Purification *(continued)*

### FILTRATION

- Filter the clearest water available. Cloudy water with large particles can clog filters more quickly.
- If water is cloudy or has large particles, prefilter by straining through a cloth or bandana before treating.
- If water is very cloudy, let stand for several hours for particles to settle out to the bottom before filtering.

Filters are rated in 3 size categories: Filter, Microfilter, and Purifier. A water PURIFIER will remove all microorganisms including viruses to 0.004 microns ( $\mu\text{m}$ ).

TYPE	PORE SIZE	TARGET ORGANISMS	Examples
Filter	1.0 – 4.0 $\mu\text{m}$	protozoa (5 $\mu\text{m}$ or larger)	Cryptosporidium, giardia...
Microfilter	0.2 – 1.0 $\mu\text{m}$	bacteria (0.2 – 0.5 $\mu\text{m}$ )	Cholera, E. coli, Salmonella...
Purifier	down to 0.004 $\mu\text{m}$	viruses (0.004 $\mu\text{m}$ )	Hepatitis A, rotavirus, adenovirus...

**Mechanical Filtration:** Removes sediment, dirt or other particles in the water using a physical barrier. This includes simple meshes that trap large debris to ceramic filters with complex pore structures that catch microorganisms.



**Absorbtion Activated Charcoal** (carbon treated with oxygen) is typically used, consisting of either granular carbon pellets or a solid block. It readily captures certain contaminants with its highly porous and immense microscopic surface area. Over time, the carbon pores become saturated with particles and must be replaced.



- Activated charcoal reduces unwanted tastes and odors, and adsorbs a wide range of impurities including chlorine, pigments, and mercury. Other substances like sodium, fluoride, and nitrates are NOT as attracted to the carbon and are not filtered out.
- BLOCK FILTERS are generally more effective than granular filters and usually carry a micron rating for particle removal. Disadvantage is slow filtering, higher cost. Advantage is filter longevity.
- NATIONAL SANITATION FOUNDATION (NSF) Rating: Filters with Standard 42 (aesthetic effects) certification are designed to minimize non-health related contaminants such as chlorine, taste, odor, and some particulates. Filters with Standard 53 (health effects) certification reduce exposure to microbiological, chemical and other contaminants that might be hazardous to health. Standard 53 is best suited for well water.



## Water Purification *(continued)*

### REFERENCES

- [https://armypubs.army.mil/epubs/DR\\_pubs/DR\\_a/pdf/web/atp4\\_44.pdf](https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/atp4_44.pdf)
- <https://outdooraction.princeton.edu/training/guide-water-purification>
- <http://www.readyforanythingnow.com/Survival%20Manual/06.htm>
- <https://www.survivalfitnessplan.com/>
- <https://offgridworld.com/how-to-make-a-5-gallon-bucket-water-filter/>
- <https://www.h2odistributors.com/pages/info/how-to-make-a-water-filter.asp>
- <https://www.thoughtco.com/how-does-activated-charcoal-work-604294>
- <https://www.discountfilters.com/blog/nsf-ansi-certification/>



*Life Straw®*



*Zero Water Filter Pitcher®*



*Katadyn Vario  
Microfilter®  
(portable)*



*Alexapur Pro®*



*Big Berkey  
Water System®*





# Your 7 Basic Survival Needs

## BACKGROUND

Learning how to survive in an emergency situation is important for everyone. Although wilderness-based survival situations are most common, survival situations can occur in urban and rural environments, too. The following hierarchy of needs will help participants learn about the definition of a survival situation and what basic needs must be met to ensure survival.

### 1. Positive Mental Attitude

Keep your cool, because panic never helps. Your brain is your best tool to take stock of the available resources and for coming up with a plan to provide for your needs. Panic can lead to making irrational, counter-productive decisions that actually make the situation worse, not better.

**Action timetable:** *as little as 3 seconds.*

### 2. Air/Oxygen

We often take it for granted, but in a choking, toxic fume situation or drowning it becomes critical to maintain an adequate supply of oxygen to the brain.

**Action timetable:** *3 minutes. After that, brain cells begin to die.*

### 3. Shelter

A shelter is used to conserve the heat your body already has. Clothing is considered shelter because it traps a layer of warm air and holds it next to your body. Shelters do not add heat. Fires or electric blankets may add heat. Would you be warmer standing outside in winter in a swimsuit next to a fire, or in a parka and snowpants with no fire? The best way to keep warm is to keep from losing heat.

**Action timetable:** *3 hours. If you are wet and exposed to wind and/or cold temperatures, failure to seek shelter can lead to fatal hypothermia. Keeping yourself dry and out of the wind are the two most important assets of any shelter.*

### 4. Warmth

If you are in an extended survival situation that may last for days, shelter alone may not be enough to prevent frostbite and/or hypothermia. Warmth can be added through building a fire or drinking hot liquids. Physical activity of any kind will increase blood flow and raise body temperature. The body heat from a warm person can be used to add heat to a cold person.

**Action timetable:** *3 hours - 3 days. The length of time varies, depending upon your conditions.*

## Your 7 Basic Survival Needs *(continued)*

### 5. Rest/Sleep

Any physical activity will burn calories – energy that cannot be used later. Resting will conserve calories so that they may be burned slowly for warmth over time. Before any activity, make sure to weigh the benefits and costs, especially if you have no food to give yourself more energy.

**Action timetable:** 1 - 3 days. *Variable, depending upon conditions. About 24 hours without sleep or rest will lead to fuzzy thinking and bad decision making for most people.*

### 6. Water

It is possible to survive a full three days without water, but as the body dehydrates it begins to function less efficiently. Water loss can occur through breathing, sweating, and evaporation.

**Action timetable:** 3 days. *Especially in winter, people forget to drink because they are not hot. Drink even before you are thirsty! Thirst is a warning signal telling you that you are already dehydrated. If snow is the only source of water, melt it first so you do not cool your body temperature by eating snow.*

### 7. Food

In most survival situations, food is not a top priority. However, food helps your body stay warm by adding calories to burn and raising body temperature by activating your metabolism.

**Action timetable:** 3 weeks. *Without food, your body will burn fat reserves as fuel. After fat reserves are used up, the body will begin to metabolize protein, burning muscle as a food source.*





# Bringing Home Chickens

This presentation is meant to provide a basic checklist for creating a system for egg laying chickens. This is not meant to be exhaustive but rather is more like a quick-start guide with some tips and tricks:

**Shelter (brooder):** Any tub, container or closed-in area.

- 100 gallon steel water trough works great.
- Bedding of wood chips, about 4-6 inches deep works great. Newspapers or dried leaves could also work but need to be changed more frequently.

**Water:** Pet bowls or gravity water dispensers are widely available.

- Water and feed delivery are often different for small chicks compared to adults.
- Make sure the chicks cannot fall in and drown if using a bowl.
- The first time you bring them home you must show them where the water source is by picking them up and placing their beaks in the water until they drink. Chickens are dumb and may not find water without this step.



**Food:** Pellets and crumbles are commercially available in bags like pet food.

- Baby egg layers and meat birds require more protein until they are mature. This is denoted by the word "starter feed" on the bag label.
- Organic starter and adult chicken feed are available but not at every outlet so if you want organic just shop around. (Sources include local feed stores/farmers co-op, grocery delivery companies like Azure Standard, national brands like Tractor Supply Company).
- Metal trash cans, Gamma seal containers or gamma lids on food-grade buckets are great at storing food while keeping critters out.



## Bringing Home Chickens *(continued)*

**Heat:** Maintain the minimum temperature specified by your breed.

- Electric heat lamps with red bulbs work great.
- Red heat bulbs are great for nighttime or anytime while white light is better for daytime only.
- If using heat lamps be sure to secure the lamp so it cannot fall on the bedding and start a fire!  
(Clamps or chains could be used for this).
- Ambient temperature in a garage or a basement may be warmer than an outbuilding.



After about 2 months in the brooder or when their feathers change color from yellow chick fuzz to their adult coloring they will be ready to moved to a larger enclosure. The single main point here is that their home needs to be able to resist predators such as raccoons, coyotes, rats, hawks, snakes and bigfoot.

The coup in the photo is commercially bought, but if you choose to make your own enclosure note the following:

- Birds like to perch and roost (nest) off the ground.
- Protection from above and below from predators.



## Bringing Home Chickens *(continued)*

### Securing Your Shelter

This is an example of my outdoor coup setup (in the city) that progressed over time so maybe it will be a shortcut for somebody else:



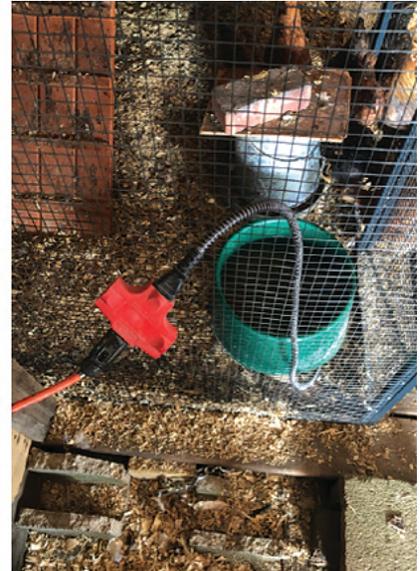
- Treated lumber and exterior fasteners were used.
- Movable dog fencing to keep chickens in and most daytime predators out. Note this was also within a fenced in suburban backyard.
- Place the coup on a wooden deck or rubber mat to secure the floor from predator intrusion.
- Garden bird netting to keep hawks out and chickens inside.
- 1/4 inch wire mesh below deck boards to prevent rats chewing from underneath.
- Wheels were later added to the deck: (Swivel wheels to make the deck/ coup system movable and chain to be able to pull the deck by hand).



## Bringing Home Chickens *(continued)*

Cold weather accommodations include:

- Heat lamp, heated dog bowl, and ample bedding.
- Follow safe procedures for running electric to your shelter.
- Reinforce shelter from storms, as need for your region, with tarps, roofing felt, house wrap, house siding insulation.



### CONTINUING CARE

**Bedding:** For bedding I choose wood chips because they are effective, readily available and low cost. I store open bags in a large plastic trash can to keep the mess down and prevent rodents from making a bed.

- I have refined my bedding process to include the following:
- Base layer (thin) of horse pellets to soak up liquids.
- Small pine chips to cover the floor of the nesting box.
- Large pine chips for comfort and warmth as needed.



## Bringing Home Chickens *(continued)*

- Diatomaceous Earth mixed in to keep bugs down.
- Food grade or garden grade.
- I exchange the bedding every 2-4 weeks in the summer.
- I exchange the bedding every 1-3 months in the winter.
- To refresh the nesting box bedding without exchanging the entire bed I use dog poop bags to remove poop from the top then add more large (cedar/pine) wood chips on top.
- Straw and large wood chips are used in the chicken run and pasture as needed.



**Clipping wings:** Chickens can fly and jump about 4 feet off the ground in my experience.

- To reduce escaping, I clip the wings so they cannot get more than about 2 feet off the ground.
- I clip the chick at about the 3-month mark or when I think they might jump over the fence. Only a fraction of the tips of the wings need cut to keep them from taking flight. Note that I do not want to cut any part of the wing and just the feather tips.
- I clip the adults about once per season or as needed.
- After the first clipping, the chickens learn they cannot jump over the fence so they mostly stop trying to escape.
- If they do escape see the net I use on the next page.



**Other Highlights:** Fishing net for rounding up, herding or catching loose chickens.

- This 16 inch diameter fishing net works for my medium sized breed.
- The red crayfish net also worked but had a short handle.
- A leaf rake also works for herding.
- Now, when the chickens see me with the net in my hand they just go to where they are supposed to be.



## Bringing Home Chickens *(continued)*

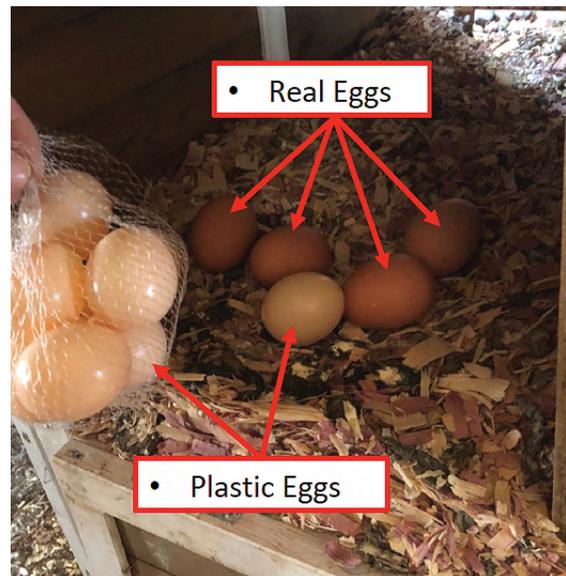


*Chicken bath for self cleaning.* Chickens will clean themselves naturally so I make an advantageous mixture and place it in the rubber bowl. There are recipes online but this is what I remember:

- 1 part of Diatomaceous Earth – food grade
- 2 parts of Play sand
- 1 part of Charcoal
- 4 parts of Clay/dirt

### *Egg laying:*

- I use plastic eggs in the nesting box to help teach the chickens where they are supposed to leave me their nutritious eggs.
- I positioned the nesting box doors in a convenient location so I can extract the eggs easily.
- Most laying chicken breeds produce 1 egg every 1-2 days.
- Generally, chickens produce eggs for 2-3 years.
- Egg production drops in cold weather and low daylight conditions but will pick up again in the summer. (Heat lamps and daylight bulb can help increase production in the winter but will shorten the amount of time they lay overall (to 1-2 years for example.)
- Laying chickens (females) may become “broody” where they have instincts to hatch a baby chicken. (Egg production will drop during this time but they will resume normal production afterwards.)
- Techniques to reduce broodiness duration can be found online but we like to cut off access to the nesting box and keep them cool with plenty of drinking water and shade.





# Child & Personal Care Resources

## DIAPERS

### ***Buying Pre-Made Diapers***

- <https://clothdiaper.com/collections/osocozy-prefolds>
- <https://www.greenmountaindiapers.com/collections/quantity-discounts>
- <https://www.cottonbabies.com/>
- [https://www.amazon.com/s?k=cloth+diapers&ref=cs\\_503\\_search](https://www.amazon.com/s?k=cloth+diapers&ref=cs_503_search)

### ***Homemade Diapers***

- <https://www.survivalsullivan.com/make-homemade-diapers/>
- <https://sewguide.com/cloth-diaper-patterns-for-babies/>
- <https://www.wikihow.com/Make-Cloth-Diapers>
- <https://howtoadult.com/how-to-make-homemade-adult-diapers-5690974.html>

### ***Homemade Soakers & Diaper Covers***

- <https://babybearbums.wordpress.com/2008/08/27/what-is-a-soaker/>
- <http://www.borntolove.com/pattern.html>
- <https://www.eucalan.com/products-1/delicate-wash/natural>
- <http://dirtydiaperlaundry.com/1-00-diy-no-sew-fleece-cloth-diaper-cover-video/>

### ***In an Emergency***

- <https://www.wikihow.com/Make-a-Homemade-Diaper>
- <http://dirtydiaperlaundry.com/cheap-and-easy-make-two-t-shirt-flats-from-1-xxl-shirt/>
- <https://www.youtube.com/watch?v=DnqLgtU6TPw>

## BABY FOOD

### ***Making Your Own Baby Food***

- <https://www.youtube.com/watch?v=9GvPj6L8JqY>
- <https://www.youtube.com/watch?v=9GvPj6L8JqY>
- [https://www.amazon.com/green-sprouts-Seperates-electricity-Dishwasher/dp/B002F9MUL6/ref=sr\\_1\\_2?dchild=1&keywords=Baby+food+grinder&qid=1623118265&sr=8-2](https://www.amazon.com/green-sprouts-Seperates-electricity-Dishwasher/dp/B002F9MUL6/ref=sr_1_2?dchild=1&keywords=Baby+food+grinder&qid=1623118265&sr=8-2)
- <https://www.eatright.org/food/planning-and-prep/snack-and-meal-ideas/how-to-make-homemade-baby-food>

### ***Breastfeeding***

- <https://wellnessmama.com/377452/increase-milk-supply/>
- <https://wellnessmama.com/76418/nursing-mom-tea/>

### ***Breastfeeding Products to Buy***

- <https://mountainroseherbs.com/nurse-me-rhyme-tea>
- <https://www.mountainmausremedies.com/mommy-and-me-herbal-tea-nursing/>

## Child & Personal Care Resources *(continued)*

### PERSONAL CARE

#### ***For Menstrual Periods***

- <https://www.youtube.com/watch?v=iV2TgwjjhOE>  
I Tried Using an 18th-Century Menstruation "Pad". Instructions start at 14:00.
- <https://www.youtube.com/watch?v=OjZ93pDKmWs>
- <https://www.littlehouseliving.com/homemade-cloth-pads-tutorial-and-pattern.html>
- <https://abundanceonadime.blogspot.com/2011/01/how-to-make-your-own-menstrual-pads-in.html>

#### ***Bathroom Necessities***

- <https://urbansurvivalsite.com/ways-to-wipe-your-butt-when-the-toilet-paper-is-gone/>
- <https://www.survivalsullivan.com/toilet-paper-plants/>
- <https://www.primalsurvivor.net/bucket-toilet/>
- [https://www.survivorjane.com/index.php?option=com\\_content&view=article&id=263:preptorial-how-to-make-a-survival-bidet&catid=61&Itemid=71](https://www.survivorjane.com/index.php?option=com_content&view=article&id=263:preptorial-how-to-make-a-survival-bidet&catid=61&Itemid=71)
- <https://www.youtube.com/watch?v=ZWQ3UG6hGzo>

#### ***Tooth Care***

- <https://www.youtube.com/watch?v=YcZVtyi9EU0>
- <https://www.youtube.com/watch?v=Vlwt0i-5BWw>
- <https://www.cbc.ca/life/video/surviving-in-the-wild-how-to-transform-campfire-charcoal-into-a-teeth-cleaning-powder-should-you-need-to-1.5181928>
- <https://www.youtube.com/watch?v=aBTU1tD8KEA>
- <https://www.youtube.com/watch?v=DtFzd3TBYil>

#### ***Lotions & Creams***

- <https://bumblebeeapothecary.com/how-to-make-tallow-balm/>
- <https://jesspryles.com/whipped-beef-tallow-body-butter/>

#### ***Lip Balm***

- <https://www.youtube.com/watch?v=TskjE1iMNvI>
- <https://www.youtube.com/watch?v=7Sv7WujNmXI>

#### ***Deodorant***

- [https://www.youtube.com/watch?v=hx\\_Ddh0ReEQ](https://www.youtube.com/watch?v=hx_Ddh0ReEQ)
- <https://www.youtube.com/watch?v=3lt3FO2x1ql>
- <https://www.youtube.com/watch?v=4Z7-Oa7vArE>

#### ***Soap***

- <https://www.youtube.com/watch?v=IU7bfuCvavA>
- [https://www.youtube.com/watch?v=Z55\\_9ATfEU0](https://www.youtube.com/watch?v=Z55_9ATfEU0)
- <https://www.youtube.com/watch?v=IU7bfuCvavA>



## Child & Personal Care Resources *(continued)*

### LAUNDRY/WASHING

- <https://www.youtube.com/watch?v=RtbkXyWFFm8&t=11s>
- <https://www.youtube.com/watch?v=kE5OQA6L-Xo&list=PL-4AwcQXbB3xiCiEDt4dhZUtLRyRlndDc&index=18>
- <https://letscampsmore.com/washing-machine/>
- <https://letscampsmore.com/washing-machine/>
- <https://momwithaprep.com/how-to-wash-clothes-without-electricity/>
- <https://www.youtube.com/channel/UCSi64g0azbv5ULkDLxMN9tw>
- <https://www.youtube.com/watch?v=t-3p7uqZZ1k>
- <https://www.youtube.com/watch?v=BaBLq0YJ9NM>
- <https://www.youtube.com/watch?v=CzjEVXNizUQ>
- <https://www.bestdryingrack.com/drying/>

### ***How to Make Washing Soda From Baking Soda***

If you cannot find washing soda in your area and don't want to place an online order, you can make your own by slowly heating baking soda. Baking soda (sodium bicarbonate  $\text{NaHCO}_3$ ) is plentiful and inexpensive. By heating baking soda you will release the carbon dioxide and water molecules, leaving you with dry sodium carbonate or washing soda.

- Place about 2 cups of baking soda in a shallow baking dish or on a shallow baking sheet. Working in smaller quantities is easier to monitor and control.
- Place the dish in a 400 degrees Fahrenheit oven for one hour.
- Stir the baking soda and smooth back out to an even layer.
- Bake an additional hour at 400 degrees Fahrenheit.
- Allow the baking soda (now washing soda) to cool completely. It will look more yellow and be much more coarse in texture.
- Store in an airtight container.
- Label the container and store out of reach of children and pets.

### ***Laundry Soap Recipe***

One can make a year's worth of laundry soap for a large family for well under \$10. This recipe requires a bar of Fels-Naptha (heavy duty) or Zote soap (general laundry use). Both are available for around a dollar at Walmart, many farm-and-fleet stores, and many grocery stores in the laundry aisle. You will also need a box of Washing Soda (NOT baking soda; costs about \$4 at Walmart), a box of Borax (also about \$4 at Walmart) and a bucket that holds at least 2 gallons. A lid for the bucket would be helpful.

Here are the directions:

- Take 1/3 of the bar of Fels-Naptha soap and grate it with a cheese grater. Put it in a pan with 4-6 cups of water.
- Heat it and gently stir it until the soap is dissolved. Do not boil or simmer.
- Once the soap is dissolved, add 1/2 cup of Washing Soda and 1/2 cup of Borax to the pan. Stir until dissolved.



## Child & Personal Care Resources *(continued)*

- Next, add about a gallon of hot (not boiling) water to your bucket.
- Then pour in the hot soap/Borax/Washing-Soda mixture, and stir.
- Add more hot water to the bucket until you have a total of 2 gallons.
- Stir well, put the lid on the bucket, and then let the mixture sit for 24 hours (during which time the mixture will sort of "gel"; stir it a few times during the 24 hours, if possible).
- When it is ready, you use it just like any other liquid laundry soap. Use about 1/4 cup per load.

### **WATER FILTERING**

#### ***Buying Water Filters***

- <https://www.amazon.com/Katadyn-Personal-Backpacking-Emergency-Preparedness/dp/B0007U00YE>
- <https://www.sawyer.com/>
- <https://pleasanthillgrain.com/berkey-water-purifier-filter>
- <https://www.usaberkeyfilters.com/product-category/factory-blemished-berkey-systems/>

#### ***DIY Water Filters***

- [https://www.youtube.com/watch?v=\\_gx2nDtEDXo](https://www.youtube.com/watch?v=_gx2nDtEDXo)
- <https://www.askaprepper.com/building-the-three-5-gallon-bucket-bio-water-filter/>
- <https://theselfsufficientliving.com/homemade-water-filters-purified-water/>
- <https://www.popularmechanics.com/home/outdoor-projects/a28848441/how-to-make-charcoal/>
- <https://www.youtube.com/watch?v=IN0fT1Uvcsw>
- <https://buyactivatedcharcoal.com/granular-activated-charcoal-coconut-8x16-mesh.html>

#### ***In an Emergency***

- <https://www.cdc.gov/healthywater/emergency/making-water-safe.html>

#### ***Homemade Well Pump***

- <https://www.motherearthnews.com/diy/pvc-manual-well-pump-zmaz00jjzgoe>





# Cooking, Canning, Dehydrating & Storage Resources

## **STOVES**

- Stove with a bottom-lit updraft that can burn twigs, pine needles, pine cones, etc.  
<https://www.youtube.com/watch?v=KFBhJK8Becg>
- Stove called the EcoZoom Versa, Amazon
- Dutch Oven (Rounded lid)  
<https://www.youtube.com/watch?v=QDz3hWeLd0o&list=PL0SLxnUNovDcwoIlkzkAUcAehAkzxa45I&index=9>
- Dutch oven (Flat lid)  
<https://www.youtube.com/watch?v=Bd4TidBqMcQ>
- On a wood stove Dutch oven bread  
<https://www.youtube.com/watch?v=SenEZV1j9nE>
- No yeast Dutch oven bread on a coal grill  
<https://www.youtube.com/watch?v=fGsTpIMqphA>
- DIY Baking Soda 5 Acres & A Dream: Baking With Wood Ash?  
<https://www.5acresandadream.com/2016/01/baking-with-wood-ash-part-3-results.html>

## **Online Resources**

- <https://www.youtube.com/channel/UCHyogJwpG0scirn6PNu510w?app=desktop>
- Don't Waste the Crumbs "is an upbeat and encouraging blog dedicated to helping other families eat real food, and live healthier lives, without going broke in the process"  
<https://dontwastethecrumbs.com/>

## **Print Resources/Books**

- Prepper's Canning Guide, 2017 Amazon
- Root Cellaring, by Mike and Nancy Bubel, 1991 Amazon or Abebooks
- Ball Blue Book Ace Hardware
- Growing and Canning Your Own Food, Jackie Clay, 2012 Amazon
- Preserving Food without Freezing or Canning, by the gardeners and farmers of Terre Vivante, 2007, Chelsea Green Publishers
- Preserving food through fermentation, Holly Howe  
<https://www.makesauerkraut.com/>

### ***To order prepackaged, prepared food or bulk foods***

- Serves the Midwest.  
<https://countrylifefoods.com/>
- Ships to the lower 48 USA  
[https://beprepared.com/?utm\\_source=google&utm\\_medium=cpc&gclid=Cj0KCQiAu62QBhC7ARIsALXijXQmTC-TpXCKTeABFlgSb32wTFiHXsDH8jYo15ZyoGS3GhMNvwZa984aAml1EALw\\_wcB](https://beprepared.com/?utm_source=google&utm_medium=cpc&gclid=Cj0KCQiAu62QBhC7ARIsALXijXQmTC-TpXCKTeABFlgSb32wTFiHXsDH8jYo15ZyoGS3GhMNvwZa984aAml1EALw_wcB)
- Ships throughout the USA and Canada.  
<https://4patriots.com/collections/food>

### ***What to do if you lose power and have 3 freezers full of meat***

- Have on hand multiple food-grade 5-gallon buckets with lids, as many as you think you will need and then add extras!
- Non-iodized salt (Redmond's Earth Salt, or pickling salt, or any non-iodized food-grade salt that you can buy in 25- to 50-lb bags), more than you think you will need.
- Brine as much meat as you are able.
- For detailed directions, see "Back to Basics, How to Learn and Enjoy Traditional American Skills", Readers Digest, 1981, p224
- If you have any means of cooking such as a propane canning stove (e.g. Simply Canning- Outdoor stove, or Amazon-Outdoor propane canning stove) pressure-can as much meat as you are able.
- Build the smoker now and practice using it now. Luckybelly-21 Homemade Smoker Plans Give away any thawed meat that will otherwise go to waste.

### ***Other Methods***

- Info on potting meat.  
<https://www.askaprepper.com/how-to-make-potted-meat/>
- <https://www.youtube.com/watch?v=povvINECyb0>
- [https://www.youtube.com/watch?v=tXh\\_VT5ygOY](https://www.youtube.com/watch?v=tXh_VT5ygOY)
- <https://www.youtube.com/watch?v=SdKzWQOVET4>
- <https://www.youtube.com/watch?v=ZdmPIpQZPRg>
- <https://www.youtube.com/watch?v=90bhL8B0ha8>
- <https://www.askaprepper.com/how-to-make-potted-meat/>





# First-Aid Resources

## FIRST-AID CLASSES, VIDEOS, AND BOOKS

- <https://www.redcross.org/take-a-class/first-aid/first-aid-training>
- <https://www.youtube.com/watch?v=XjMvBW9KDLA>
- <https://www.youtube.com/watch?v=R3fEWiXr0Nk>
- <https://www.youtube.com/channel/UCmTe0LsfEbpkDpgrxKAWbRA>
- <https://goldiesocks.com/blogs/news/diy-rice-sock-homemade-cold-and-hot-pack>
- <https://www.redcross.org/store/first-aid-fast-reference-guide/758274.html?cgid=first-aid-cpr-aed-materials#start=3&cgid=first-aid-cpr-aed-materials>
- [https://www.amazon.com/Survival-Medicine-Handbook-Essential-Guide/dp/0988872501/ref=sr\\_1\\_3?keywords=the+survival+medicine+handbook+joseph+alton&qid=1643285899&sprefix=the+survival+medicine+handbook+joseph%2Caps%2C213&sr=8-3](https://www.amazon.com/Survival-Medicine-Handbook-Essential-Guide/dp/0988872501/ref=sr_1_3?keywords=the+survival+medicine+handbook+joseph+alton&qid=1643285899&sprefix=the+survival+medicine+handbook+joseph%2Caps%2C213&sr=8-3)

## HOW-TO VIDEOS REGARDING HERBAL PREPARATIONS

- [https://www.youtube.com/watch?v=y\\_JHPcuU9VY](https://www.youtube.com/watch?v=y_JHPcuU9VY)
- Also see the video for the tincture-making workshop at CORAC's National Conference: <https://corac.co/2021/07/05/part-15-health-wellness-workshop-tinctures/>

## HOW-TO BOOKS ON MAKING HERBAL PREPARATIONS

- Making Plant Medicine, fourth Edition by Richo Cech, 2016 Strictly Medicinal Seeds
- Herbal Antibiotics: Natural Alternatives for Treating Drug-Resistant Bacteria, 2nd Edition by Stephen Harrod Buhner, 2012 - Amazon
- Herbal Antivirals: Natural Remedies for Emerging & Resistant Viral Infections, 2nd Edition by Stephen Harrod Buhner, 2021 - Herbal Antivirals, 2nd Edition: Natural Remedies for Emerging & Resistant Viral Infections: Buhner, Stephen Harrod: 9781635864175: Amazon.com: Books
- The Herbal Home Remedy Book by Joyce Wardwell, 1998 (25 medicinal and edible plants that grow in much of the US) (see links on the next page) - The Herbal Home Remedy Book: Simple Recipes for Tinctures, Teas, Salves, Tonics, and Syrups (Herbal Body): Wardwell, Joyce A.: 0370380001608: Amazon.com: Books OR - AbeBooks
- The Medicinal Garden by Anne McIntyre, 1997 - The Medicinal Garden: How to Grow and Use Your Own Medicinal Herbs: McIntyre, Anne: 9780805048384: Amazon.com: Books
- The Lost Book of Herbal Remedies by Nicole Apelian and Claude Davis - Amazon.com: The Lost Book of Herbal Remedies: 9781732557109: Claude Davis: Books

## First-Aid Resources *(continued)*

### IF YOU'D LIKE TO GROW YOUR OWN MEDICINAL HERBS...

*Some of the best herbs to grow (or forage) for medicinal purposes are:*

- Thyme
- Purple-flowered oregano (*origanum vulgare*)
- *Echinacea angustifolia*
- Calendula
- Oats (for depression and adrenal fatigue; a 2-by-4-foot area will grow enough for a family for at least a year)
- Alfalfa
- Comfrey
- Garlic
- Onion
- John's Wort
- Dandelion
- Plantain
- Burdock
- Nettle
- Violet
- Mallow (wild or marsh),
- Elder (elderberry)
- Purslane
- Plantain
- Tulsi (Indian basil or sacred basil)
- Lemon balm
- Mullein
- Rugosa rose, dog rose, wild rose
- Cayenne (It must be over 90,000 heat units)

<https://www.southernexposure.com/products/cayenne-carolina-hot-pepper/>

*Although not cayenne peppers, Habaneros and other hot peppers would also probably work.*

- Hot Peppers  
<https://www.fedcoseeds.com/seeds/hot-peppers>
- Strictly Medicinal Seeds:
  - *Sida acuta* is a broad-spectrum antibiotic
  - Baikal skullcap/Chinese skullcap is a broad-spectrum antiviral
  - *Houttuynia*/Chameleon plant is another broad-spectrum antiviral
  - *Bidens* is a broad-spectrum antibiotic
- *Isatis/Woad* is a broad-spectrum antiviral. Seed available at Pinetree Garden Seeds
- Licorice is a synergistic herb that is used whenever taking the other herbs because it helps them to work more effectively. Licorice is very difficult to grow, and it takes 4 years to get usable roots. But for those who'd like to try it, Strictly Medicinals and Richter's carry seeds and plants.
- *Cryptolepis* is a broad-spectrum antibiotic that cannot be grown in most of North America. It can be purchased at Herbs ([herbies-herbs.com](http://herbies-herbs.com)) and Monteagle Herbs



## First-Aid Resources *(continued)*

### WHERE TO PURCHASE BULK HERBS FOR MAKING TEAS, TINCTURES, SALVES, ETC.

- <https://www.pacificbotanicals.com/>
- <https://www.mountainmausremedies.com/>
- <https://mountainroseherbs.com/>
- <https://herbies-herbs.com/bulk-herbs>
- <https://monteagleherbs.com/>
- <https://1stchineseherbs.com/>





# Gardening Resources

## GARDENING

### **Seeds & Plants**

- <https://www.stclareseeds.com/garden-help/>
- <https://www.fedcoseeds.com/>
- <https://www.southernexposure.com/>
- <https://www.superseeds.com/>
- <https://nicholsgardennursery.com/>
- <https://www.ufseeds.com/>
- <https://victoryseeds.com/>
- <https://www.adaptiveseeds.com/>
- <https://www.rareseeds.com/>
- <http://www.seedtreasures.com>

### **Garden Ideas for Regions** - *what will grow, when*

- <https://homesteadersofamerica.com/what-to-plant-october-vegetable-garden/>  
This blog covers each month with the current month highlighted.
- <https://gardenseason.com/four-season-vegetable-garden/>

### **Pest Control Ideas** - *insects, voles, moles, gophers*

- <https://www.youtube.com/watch?v=yVLSGDmrCcM>
- <https://www.youtube.com/watch?v=KiVLUWr7foc>

### **Cold Weather Garden**

- <https://www.youtube.com/watch?v=GcqAJkYgCw>
- <https://www.youtube.com/watch?v=k-oLSbcuy7o>

### **Hanging Baskets & Other Containers**

- <https://www.youtube.com/watch?v=zrCxLnDcvG0>
- <https://www.youtube.com/watch?v=LQIPSnAbjQ>

### **Vetables for Highest Nutrients**

- <https://www.youtube.com/watch?v=ysKFLtixxlc>
- <https://www.youtube.com/watch?v=LQIPSnAbjQ>

### **Sprouting of Untreated Seeds**

- <https://www.youtube.com/watch?v=qynti1u9ywE>
- <https://www.youtube.com/watch?v=dtvuMNVLIso>

## Gardening Resources *(continued)*

### ***Sprouting of Untreated Seeds***

- <https://www.youtube.com/user/GrowVeg>
- <https://www.gardeningknowhow.com/edible/vegetables/>
- Gardening when It Counts, by Steve Solomon, 2006, Amazon
- The Resilient Gardener, by Carol Deppe, 2010, Chelsea Green Publishing
- Seed to Seed, by Suzanne Ashworth, 2002, Amazon
- Joy of Gardening, Dick Raymond, 1983, Amazon
- Square Foot Gardening, Mel Bartolomew, 2018, Amazon

### **Tools** - All found at <https://www.easydigging.com/>

- I suggest the 6-inch grub hoe rather than the 4-inch.  
<https://www.easydigging.com/garden-hoes/grub-hoe.html>
- Italian grape hoe.  
<https://www.easydigging.com/garden-hoes/italian-grape-hoe.html>
- Metal files for keeping the tools sharp.  
<https://www.easydigging.com/gardening/farmers-sharpening-file.html>

### **COOKING, CANNING, DEHYDRATING & STORING**

- <https://www.youtube.com/channel/UChyogjwpG0scirn6PNu510w>  
The bottom-lit updraft stove that can burn twigs, pine needles, pine cones, etc.
- <https://survivalblog.com/pats-product-review-silver-fire-rocket-stove/>
- There is another stove called the EcoZoom Versa, Amazon
- <https://dontwastethecrumbs.com/>
- <https://www.youtube.com/watch?v=SenEZV1j9nE>
- Rounded lid Dutch oven Outdoor Cooking Adventures With Knynmanrog, Baked Bread In a Dutch Oven - <https://www.youtube.com/watch?v=QDz3hWeLd0o>
- Flat lid Dutch oven Baking Artisan Bread in a Dutch Oven Super Easy Recipe  
<https://www.youtube.com/watch?v=bc5wQlo3S4E>
- On a wood stove. Dutch oven bread - [https://www.youtube.com/watch?v=\\_6vbiVYIIG0](https://www.youtube.com/watch?v=_6vbiVYIIG0)
- No yeast Dutch oven bread on a coal grill SURVIVAL BREAD NO YEAST VERSION IN THE DUTCH OVEN - <https://www.youtube.com/watch?v=fGsTpIMqphA>
- DIY Baking Soda 5 Acres & A Dream: Baking With Wood Ash? (Part 3: The Results!)  
<https://www.5acresandadream.com/2016/01/baking-with-wood-ash-part-3-results.html>  
<https://www.5acresandadream.com/>
- Prepper's Canning Guide, 2017, Amazon
- Root Cellaring, by Mike and Nancy Bubel, 1991, Amazon or Abebooks.com
- Ball Blue Book Ace Hardware
- Growing and Canning Your Own Food, Jackie Clay, 2012, AmazonSmile: Books
- Preserving Food without Freezing or Canning, by the gardeners and farmers of Terre Vivante, 2007 Chelsea Green Publishers
- Preserving food through fermentation, Holly Howe,  
[https://www.makesauerkraut.com/?ck\\_subscriber\\_id=1268376565](https://www.makesauerkraut.com/?ck_subscriber_id=1268376565)



## Gardening Resources *(continued)*

- National Center for Food Preservation  
[https://nchfp.uga.edu/questions/FAQ\\_canning.html](https://nchfp.uga.edu/questions/FAQ_canning.html)
- To order prepackaged, prepared food or bulk foods:
  - Serves the Midwest  
<https://www.clnf.org/>
  - Ships to the lower 48 USA.  
<https://beprepared.com>
  - Ships throughout the USA and Canada.  
<https://4patriots.com/collections/food>

### ***What to do if you lose power and have 3 freezers full of meat***

- Have on hand multiple food-grade 5-gallon buckets with lids, as many as you think you will need and then add extras!
- Non-iodized salt (Redmond's Earth Salt, or pickling salt, or any non-iodized food-grade salt that you can buy in 25- to 50-lb bags), more than you think you will need.
- Brine as much meat as you are able.
- For detailed directions, see "Back to Basics, How to Learn and Enjoy Traditional American Skills", Readers Digest, 1981, p224
- If you have any means of cooking such as a propane canning stove (e.g. Simply Canning - Outdoor stove, OR Amazon-Outdoor propane canning stove) pressure-can as much meat as you are able.
- Build the smoker now and practice using it now. Luckybelly-21 Homemade Smoker Plans
- Give away any thawed meat that will otherwise go to waste.

### Other Methods

- <https://www.askaprepper.com/how-to-make-potted-meat/>
- [https://www.youtube.com/watch?v=povvINECyb0&ab\\_channel=SmokeTrailsBBQSmokeTrailsBBQ](https://www.youtube.com/watch?v=povvINECyb0&ab_channel=SmokeTrailsBBQSmokeTrailsBBQ)
- [https://www.youtube.com/watch?v=tXh\\_VT5ygOY](https://www.youtube.com/watch?v=tXh_VT5ygOY)
- [https://www.youtube.com/watch?v=SdKzWQOVET4&ab\\_channel=TownsendTownsendVerified](https://www.youtube.com/watch?v=SdKzWQOVET4&ab_channel=TownsendTownsendVerified)
- <https://www.youtube.com/watch?v=ZdmPIpQZPRg>  
This uses a hot brine.
- <https://www.youtube.com/watch?v=90bhL8B0ha8>  
This uses regular brine.
- <https://www.youtube.com/watch?v=g7QcWXSUU8>





# Survival & Power Outages

## **SURVIVAL & SUSTAINABILITY**

### **Websites**

- <https://majorsurplus.com/>
- <https://colemans.com/>
- <https://tacticalgear.com/camping-and-survival>
- <https://www.survivopedia.com/how-to-use-cattail-for-survival/>
- <https://theprepperproject.com/>
- <https://modernsurvivalonline.com/emp-proof-tools/>
- <https://thepeppyprepper.wordpress.com/>
- <https://www.youtube.com/user/jastownsendandson>
- <http://theselfsufficientliving.com/homemade-wood-stoves-and-heaters>
- <https://www.humilitasfirst.com/>
- [https://drive.google.com/file/d/1wF6Pziwv7teTuC2\\_\\_HlbFTAers6n49lr/view?usp=drive\\_web](https://drive.google.com/file/d/1wF6Pziwv7teTuC2__HlbFTAers6n49lr/view?usp=drive_web)
- <https://corac.co/2021/02/09/u-s-army-survival-guide/>
- <https://www.rei.com/blog/camp/diy-paracord-survival-bracelet>
- <https://www.happypreppers.com/buckets.html>

### **Books**

- Tim MacWelch's book: The Ultimate Bushcraft Survival Manual, 2017, AbeBooks
- Boy Scout Books - Amazon
- Boy Scout Survival Skills
- Boy Scout Manual

## **DISASTER PREPAREDNESS**

- Back Door Survival What to Stock on now  
<https://www.backdoorsurvival.com/staying-ahead-of-the-shortages-what-to-stock-up-on-for-the-coming-year/?fbclid=IwAR1yXYTwQeSGRWDYru-CG-JKEezuMPw51ywX3Zt8UfboD0liYPGj39VBI7Q>
- The Most Important News  
<http://themosimportantnews.com/archives/a-list-of-50-things-you-should-get-right-now-to-prepare-for-the-chaotic-events-of-the-next-12-months>
- Survival essentials: Prep now before shortages get worse due to the supply chain crisis  
<https://foodcollapse.com/>
- Plan Ahead for Disasters (Information and videos)  
<https://www.ready.gov/>

## Survival & Power Outages *(continued)*

### **Power Outage** - Lights! No cameras! Action!

- [https://www.youtube.com/watch?v=fWsosXb2NGU&t=1s&ab\\_channel=DIY](https://www.youtube.com/watch?v=fWsosXb2NGU&t=1s&ab_channel=DIY)
- [https://www.youtube.com/watch?v=n\\_fdLyeNMd0&ab\\_channel=Make%3A](https://www.youtube.com/watch?v=n_fdLyeNMd0&ab_channel=Make%3A)
- [https://www.youtube.com/watch?v=7fFf-gtesH4&ab\\_channel=EnvironMoldsEnvironMolds](https://www.youtube.com/watch?v=7fFf-gtesH4&ab_channel=EnvironMoldsEnvironMolds)
- [https://www.youtube.com/watch?v=jZysaqpXNNQ&ab\\_channel=EnvironMolds](https://www.youtube.com/watch?v=jZysaqpXNNQ&ab_channel=EnvironMolds)
- If you need clay for your lamp project:  
[https://www.youtube.com/watch?v=Vbnp2lOHR8E&ab\\_channel=OffgridSecretsOffgridSecrets](https://www.youtube.com/watch?v=Vbnp2lOHR8E&ab_channel=OffgridSecretsOffgridSecrets)

### **EMP**

- <https://techprotectbag.com/how-to-prepare-for-an-emp-a-comprehensive-guide/>
- <https://disasterpreparer.com/informative-videos/>

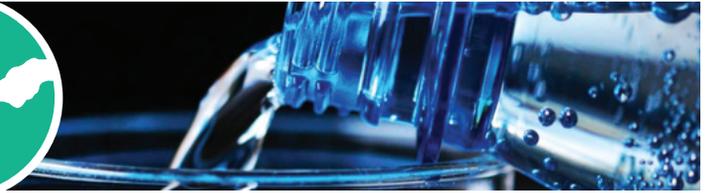
### **Preparations**

- Be Prepared For a Power Outage  
<https://www.ready.gov/>
- Preparing for a Blackout, Department of Energy  
<https://www.energy.gov/energysaver/articles/how-prepare-your-home-blackout>
- Preparing For A Power Outage: The Ultimate Guide - Survivor's Fortress  
<https://survivorsfortress.com/>
- Prepare for a power outage - what to do when the grid goes down  
<https://www.keepyourtribealive.com/articles/prepare-for-a-power-outage/>

### **Emergency Cooking & Heating**

- <https://www.youtube.com/watch?v=Lsg-yWv-6QE>
- <https://www.youtube.com/watch?v=xnNHM4OLkvE>





# What to do in a Water Emergency

There has been a lot of discussion recently about water, water purity, and what to do if there is a water emergency. This paper will attempt to answer most of those questions.

First, it is best to have a supply of emergency water on hand. This can be bottled water, water stored in jugs or other large containers, or 50 gallon barrels. If, for some reason, the supply of municipal water or well water is interrupted or, because of a natural disaster that has washed away or destroyed your emergency supply of water, river, stream, pond, or lake water can be used if available. There are three methods for making water safe to drink.(1)

**Boil:** If water is clear, the water should be brought to a rolling boil for 1 minute at elevations up to 6,500 feet and below and 3 minutes for elevations above 6,500 feet, will take care of viruses, bacteria, especially the parasites Giardia and Cryptosporidium. If water is not clear, filter it using a t-shirt, coffee filter, or paper towel. You can also allow it to settle and draw off the clear water. Then boil as recommended above. There will be some sediment that settles to the bottom. Draw off the clear water for use. To overcome the flat taste of the boiled water, add a pinch of salt or pour the water back and forth between two containers or allow the water to sit for a few hours.

**Disinfect:** If boiling is not possible, you can use unscented household chlorine bleach, iodine, or chlorine dioxide tablets, though these are not as effective. Giardia is especially resistant but chlorine dioxide tablets will kill Cryptosporidium if you follow the manufacturer's instructions carefully.

Tables for using bleach for disinfection are given below. Check the active ingredients label for the percentage of sodium hypochlorite. Please note that bottled bleach expires after 6 months.

Making water safe to use with bleach having a 5%-9% concentration of sodium hypochlorite (most common in the US). If the water is cloudy, murky, colored, or very cold, add double the amount of bleach listed below.		
Making water safe to use with bleach having a 5%-9% concentration of sodium hypochlorite		
1 quart/liter water	1 gallon water	5 gallons water
If you have a dropper: Add 2 drops of bleach	If you have a dropper: Add 8 drops of bleach	If you have a dropper: Add 40 drops of bleach
If you have something that measures milliliters (mL): Add 0.1 mL of bleach	If you have something that measures milliliters (mL): Add ½ mL of bleach	If you have something that measures milliliters (mL): Add 2½ mL of bleach
If you have a measuring spoon: Add a tiny amount (too small to measure)	If you have a measuring spoon: Add a little less than ¼ teaspoon	If you have a measuring spoon: Add ½ teaspoon of bleach
Making water safe to use with bleach having a 1% concentration of sodium hypochlorite (this concentration is not common in the US but is used in other countries). If the water is cloudy, murky, colored, or very cold, add double the amount of bleach listed below.		
Making water safe to use with bleach having a 1% concentration of sodium hypochlorite		
1 quart/liter water	1 gallon water	5 gallons water
If you have a dropper: Add 10 drops of bleach	If you have a dropper: Add 40 drops of bleach	If you have a dropper: Add 200 drops of bleach
If you have something that measures milliliters (mL): Add ½ mL of bleach	If you have something that measures milliliters (mL): Add 2½ mL of bleach	If you have something that measures milliliters (mL): Add 12½ mL of bleach
If you have a measuring spoon: Add ¼ teaspoon of bleach	If you have a measuring spoon: Add ½ teaspoon of bleach	If you have a measuring spoon: Add 2½ teaspoons of bleach

## What to do in a Water Emergency *(continued)*

Chemical disinfectants can be used with some caveats. Be sure to follow the manufacturer's instructions when using chemical disinfectants. Chlorine dioxide tablets will kill germs and Cryptosporidium but not Giardia. Regular chlorine tablets, iodine tablets, or tablets with tetraglycine hydroperiodide, will kill most germs but not Cryptosporidium. The CDC gives the following warning: Water that has been disinfected with iodine is NOT recommended for pregnant women, people with thyroid problems, or those with known hypersensitivity to iodine. It's also not recommended for continuous use—don't use it for more than a few weeks at a time. Solar disinfection is also an option if you cannot boil the water or do not have filters or disinfection tablets available. It is not as effective in reducing germs. First, put clear water in clear plastic or glass containers that have lids. Cloudy water does not work as well because the small particles in the water will block sunlight. Place the containers on their sides, preferably on a dark background. Leave in the sun for 6 hours if the weather is sunny or two days if the weather is overcast.

**Filter:** Pick a water filter that has an absolute pore size of 1 micron or smaller. This will filter out Giardia and Cryptosporidium but not viruses or bacteria. After filtering the water, add chlorine, chlorine dioxide, or iodine to kill viruses and bacteria. You can also make a water filter. Here are four ideas for making simple water filters for emergency situations. How to Make a Homemade Water Filter (4 Easy DIY Projects) ([waterfilterguru.com](http://waterfilterguru.com))

Over all, the best method for making safe drinking water is boiling.

What if you suspect the water around you has other contaminants such as heavy metals or PFAS? It would be a good idea if you suspect these contaminants in the area water to have your most likely emergency source of water tested beforehand to find out what you might be dealing with.

There are three methods of removing heavy metals from drinking water.(2) One is rather surprising.

1. **Cilantro!**(3) I know some of you were asking the question of what to do with your extra cilantro. Well, now you know! You can take cilantro, fresh or dried, or its seed, coriander, or an extract to put into your water. The chelating effect of Coriandrum Sativum removes heavy metals by attaching to the metals and making them inert. They are then harmlessly secreted by the body. For further mind-numbing reading on the process, see Chelation - Wikipedia. Time Magazine had a short article on the use of cilantro to remove heavy metals in water with some instructions here:  
<https://healthland.time.com/2013/09/12/cilantro-more-than-an-herb-it-can-purify-water-too/>



## What to do in a Water Emergency *(continued)*

2. **Reverse Osmosis Units:** While these work very well, they are quite bulky, can be difficult to use without water pressure, require more maintenance, and are very expensive. They are not a practical alternative in most cases in an emergency.
3. **Distillation:** Distillation turns water into steam and then the steam is collected and funneled into a container as it returns to its liquid water form. If the water is not clear, filter it first. There are a few methods to make a distillation set up from simple to more complex. Here is one using just plastic bottles. [How to Make an Emergency Water Distiller With Plastic Bottles – SurvivalKit.com](#) This one uses pits, bags, and vegetation: [How to Make Water in the Desert: 15 Steps \(with Pictures\) \(wikihow.com\)](#) This one is a bit more complicated and needs some planning ahead. [DIY Camp Water Distiller \(chicksontherocks.com\)](#) Here is a filter that removes heavy metals and PFAS. [Water Filters & Water Filter Pitchers - Clean Water at Home – ZeroWater](#) This one uses a pressure cooker/canner. [How to use your pressure cooker as a water distiller – Magefesa USA](#) You can also buy home distillation systems.

