

# Farm It

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As food prices spiral upwards, the personal and group garden will come back into vogue. This Victory Garden puts us somewhat above the heavy handed and regularly used strategy of people control through the selective distribution of food to the "good" people. Try to acquire and seed non hybrid seeds before times of trouble, as these seeds can be used generation after generation. Don't kill yourself with poisons; use natural insect repellents and fertilizers. Try to plant some staple foods, like spinach, cabbage, and squash, which offer more versatility for dishes. Even an urban dweller is not excused, you have greenspaces, rooftops and even suspended window platforms to farm from.

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# General Farming

First, you need seeds. Most seed packets cost about a dollar, and can contain hundreds of seeds. More hardy plants, like squash, can go for about 15 cents a seed. Almost all packets have growing facts printed right on them, including best climate, harvest periods, and even how to plant them in the ground. Most harvest periods for solid, edible crops range from only 50 days to about 100 days. Be sure to look to see what seasons are recommended to grow your crops in and where to plant them. After replanting the hardier plants from your seedlings into the ground, most just need about a foot or two between each plant. Even a backyard a few yards across and a few yards deep, if devoted to your new plants, can yield enough food at harvest time to feed yourself for a few weeks.

Remember to rotate which crops you plant seasonally. If you only plant one type of plant in the same row for a few seasons, you risk severely damaging the soil and depleting it of various minerals. Try to first add crops that can be brought into operation in a few months so you can start cutting your food budget rather than for example waiting years for an orchard.

Be sure to contact your nearby university with an ag program they are chartered to run extension services by the U.S. Department of Agriculture in furtherance of the Acts of Congress of May 8 and June 30, 1914.

# What to grow

Plan for complete nutrition, this means something like corn and beans or potatoes and beans, some of the the natives of what many call North America, before they had their land taken at gunpoint, would base their agriculture on "the three sisters" corn, gourds, and beans. The corn stalk provided a pole for the beans to climb on to grab sunlight and the low crawling squash or pumpkins would keep the weeds at bay. Remember to either rotate or move fields every season to keep infestation and soil burn out minimized.

- Roots

Root vegetables are easy to grow and have high food content per acre. The potato fed the Irish until the blight sent them packing to new shores due in part to lack of crop rotation.

Potatoes are one of the easiest plants to grow without access to a plot of land. The most important step is to acquire good quality seeds/eyes. You can often use a potatoes from the supermarket, unless they have been treated with chemicals to prevent eyes from forming, let them sit for a few weeks to see if they sprout. Most big box stores with a "garden" section will also have one or two varieties in early spring. Carrots, beets, and onions are also pretty easy to grow from seed.

Acquire a large garbage can or other large container and clean it out with a 1:5 ratio of bleach and water to kill any molds and fungi. When you are finished punch a half dozen holes in the bottom for drainage. Put about four to six inches/ten to fifteen centimeters of soil in the bottom. If necessary, cut the seeds up so that there are two to three on each piece. Place the seeds or eye sprouts on top on the surface of the soil, eyes up. Some suggest soaking the seeds beforehand others say dry them out to prevent rotting and others yet say don't do anything at all. Look at the package in your hands and see what it says and then use the grey matter between your ears. If something doesn't work do the other next year. Cover the seeds and keep the soil watered but not soaked, about an inch a week. Once the plants have grown about six to eight inches/fifteen to twenty centimeters cover the bottom third with soil. Continue adding soil whenever you get some new growth until the plants begin to flower. It is essential to keep the "seeds" and/or tubers covered with soil as exposure to the sun will cause them to turn green. Never eat any green part of a potato or potato plant, they are poisonous. You can harvest these as new potatoes or wait. Your choice. Once the flowering is over and the plants start to yellow stop watering. Wait a few weeks for the potatoes to settle and dig them up.

Optional variants: Use sawdust (non-pressure treated wood) and feed with liquid kelp or compost tea whenever you add a layer.

see Camping for wilderness potato growing.

- Gourds

Most types of squash are good for carb filler food in typical meat dishes, such as chili. Cut up gourds and pumpkins are good in soups or as a filler for pies.

- Corn

Corn is starch and sugar rich and can be dried and ground up for cornbread and stews in the winter.

- Beans



Beans are high in protein and usually easy to grow, eat whole or shell out the inner seeds and dry in the sun for storage. Combined with rice you have a complete if boring diet since beans are rich in protein. Their roots have nodules that actually add nitrogen to the soil so they are very useful in crop rotation plans, allowing nitrogen grabbers like wheat to thrive the next growing season..

- Grains

If you have a large field at least an acre you might try growing wheat, oats or barley. Once you harvest the wheat you need to be able to cut down, de-hull, and thresh away the chaff. See also Caching and Cheap Chow

- Bamboo

Bamboo is of the grass family but the wood can be used in place of trees. The stalks are quick growing, strong, and lightweight. Bamboo can be grown from a cutting placed in water and once roots sprout potted. Bamboo will take over a yard if allowed so caution must be used in planting especially near a water source. Bamboo rots quickly if allowed to remain damp. Young tender bamboo shoots are tasty if cooked.

- Blackberries

Blackberry briar's not only provide supplemental food for pies or juices but it is also an excellent barrier plant, literally a quick growing spiky living protection. Blackberries grow quickly and care must be taken to prevent overgrowth especially in wet climates or near water. Be careful not to overeat on berries as it can cause diarrhea. Blackberries are an excellent food to jar for winter desserts.

- Hay

If you harvest hay during the fall and keep it dry you can feed your livestock during the winter, store feed is expensive. Be sure the hay is well protected and dry. Hay that is harvested green or gets damp will compost generating temperatures high enough to start a fire, this is a serious danger for hay kept in a barn or near an animal pen. Your goats and other livestock will help you determine which grass is the best hay by constantly grazing near their favorites.

# Farming Techniques

If you have access to the internet a search on the US Government ERIC system should hopefully still find you a copy of the Remote Areas Development Manual (<http://eric.ed.gov.nyud.net/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?accno=ED242881>) It is one of the most useful farming and village life handbooks available especially if you can find the printed pocket size. It covers everything from fertilizer to blacksmithing to medical care everything a Peace Corps worker would need, and since it is a US FedGov publication there is no copyright on it, share, edit, print, and repurpose it!

## Urban

If you can not access a piece of soil for a whole season fear not, you can still bring in a nice crop without spending too much money. You will probably want to find a place with good soil and a wheelbarrow to transport it to your alternate cement slab gardening area.

## Guerrilla Farming

Our revolutionary warriors need never use violence to feed the people. By building an arsenal of seed bombs even the ignorant people can be equipped for the coming changes, plus this is fun to do even if you are mobile and have no garden of your own. Just mix one part clay, three parts compost, and edible vegetable seeds, soften with water, and roll into small balls. Deploy in any open areas. Easy to grow crops include onions, peas, beans, beets, rutabaga, squash, potato, and zucchini. Aim your bombs for areas that have the right sun/shade ratio and moisture, avoid mowed areas where the crops will be killed.

## Tire Farming

A stack of tires filled with soil is the start of a vertical farm. Plant between the tires and wedge small openings for your plants. The tires help conserve water and space and are especially good for growing root vegetables.

## Trash sack

Fill a double NON-biodegradable trash sack with soil and twist the top shut in a loose knot. Some people like to put a burlap sack or other cover over this to protect the plastic from sun damage and overheating the roots. Plant your seeds through small melted through holes so the double bag will stay joined and make slits over the holes through any cover. Water through the top to keep the soil moisture up, if done properly there should be little waste through evaporation. If planting on a paved surface you may need to shade your crops and water a little during the day because black top absorbs so much heat and might kill your roots.

## Open Field

Even in urban areas it is often possible to find a real piece of land with soil that you can grow on. The best soil is often found in urban areas which started as farming colonies over a hundred years ago.

## Preparing a Field

A new piece of land needs to be prepped before seeding. Choose a location near the bottom of a downslope or at the bottom of a valley, a place that is already green most of the year, this means there is water near the surface. Alternatively plant near a source of irrigation water, but choose wisely surface water is controlled by the government. Unless you can arrange drainage or plant swamp reduction trees over time avoid swamps or areas known to flood which could destroy a whole crop. If the area is very weed infested you might consider a controlled burn off but be careful this can lead to erosion of your priceless topsoil, quickly planting clover will enrich and anchor the topsoil. First off remove all large rocks down to fist size to at least six inches deep, worldwide the solution is to build stone fences around the field to get rid of these rocks. Add mulch and compost to enrich the soil, this will also encourage earthworms who aerate the soil. Turn over the soil and mulch, whether it is a cow pulled plough or a motorized rototiller you need to turn over and soften packed soil. Clay retains moisture but can become very hard, sand helps drainage but washes away easily, you need the correct mix for water conditions as well as good organic mass and nutrients to feed your crops.

## Watering

The trick to watering a garden is to water it around dawn or dusk, when the plants are still warm, or about to get warmer, and to water until it starts to flood. Too little water, and you're only hurting the plant by teasing it. Too much will erode the soil, but this takes a lot of water. If you're in an area where it gets below freezing at night, water your plants before it gets there, then cover them with a blanket or tarp. Ice makes a surprisingly good insulator, and the blankets do too.

One of the best sources of free water is your roof gutters, it is best to store this in a rain barrel or cistern since the rain is already watering your garden that day, use the stored water on a dry evening. Replumbing your residence to store your shower and sink water for evening may supply your whole irrigation budget. Also look for ways to catch the runoff from parking lots and driveways, an artificial pond is one way to save this water.

## Greenhouse

PVC pipe and UV Plastic sheet are almost all you need to start a greenhouse, saving you water and increasing crops. It is important that the clear plastic you use will resist degradation, ask at a garden or hardware shop. Choose a site with well drained soil. If you will be growing only in summer build under the shade of a tree to reduce overheating, but place in direct sun if you plan to grow full life cycle plantings, shade cloth or white plastic can substitute for natural shade if overheating is a problem. Use environmental friendly ground contact pressure treated wood like CCA, untreated wood will rot quickly. When leveling the frame on uneven ground dig a trench on the upper side which will be easier to seal. The large 4x4 posts are to keep the greenhouse anchored in wind. Use Schedule 80 Pipe if possible, other pipe will be weaker. The mid rib PVC pipe is cut into about 22 Z' in long pieces and rejoined with the cross joints. EMT tubing in the mid-rib (number 14) or spine strengthens the rejoined tube. Use two or more people when bending and anchoring the PVC ribs into the EMT strap loops(number 4) to prevent damage to the joints and ribs. Stapling down the plastic cover is the best way to attach it, allow some extra plastic to extend and be covered with dirt to help make a seal. Find some old garden hoses and punch drip holes or use drip irrigation tube, it will stay under the ground

sheet for drip irrigation. Lay down ground sheet plastic and punch holes for your baby plants, or a few inches of sand or gravel, these limit mud and weed problems. Bury the edges of the greenhouse plastic with soil or sand, it is important that the edges be sealed to keep rainwater and moles out. Even in the coldest weather be careful that a small heater or heat lamp doesn't overheat the greenhouse, in summer open the door if overheating. This greenhouse design will support four inches of snow, if there is more snow add additional prop supports Connect twine hanging from the ribs for vine and soft plants. As the plants grow help them twist around the twine for easier vertical growth. This works great for cucumbers, beans, and tomatoes. Flowers and food for sale can be grown year round in most areas. If you need more room extend the length of the greenhouse following this design, a wider frame will be weak in wind and snow. If you need to save money leave out the door but keep the door frame and use overlapping plastic flaps.

Illustrations and design courtesy of North Carolina State Cooperative Extension Service, modified for Steal This Book Today

Bill of Materials (print and take to the hardware store)

- Item Qty. Description
- 1- 16- 1/2 in. PVC Schedule 80 Pipe, 10 ft long
- 2- 6- 1/2 in. PVC Cross Joints, Schedule 80
- 3- 2- 1/2 in. PVC Tee Joints, Schedule 80
- 4- 32- 1/2 in. Galvanized electrical metallic tubing (EMT) Straps
- 5- 2- 2"x6"x14" Outdoor Treated No. 2 Pine Boards
- 6- 2- 2"x6"x12" Outdoor Treated No. 2 Pine Boards
- 7- 4- 2"x4"x7" Outdoor Treated No. 2 Pine Boards
- 8- 4- 2"x4"x6" Outdoor Treated No. 2 Pine Boards
- 9- 4- 4"x4"x2" Outdoor Treated No. 2 Pine Boards
- 10- 2- 2"x4"x3" Outdoor Treated No. 2 Pine Boards
- 11- 2- 1"x4"x12" Outdoor Treated No. 2 Pine Boards (to cut up for door parts)
- 12- 1- Set of door Hinges
- 13- 1- Sheet of Plastic 24 ft x 20 ft, 4 mil thickness
- 14- 1- 1/2 in. x 10ft. Galvanized Electrical Metallic Tubing
- 15- 1- PVC cleaner
- 16- 1- PVC cement
- 17- - misc nails, screws, and staples

^Jimage:Greenhouse.png

## Plastic Sheet

In your greenhouse, an open field, or a small garden, bury old perforated garden hose or irrigation tube under black UV plastic sheet, cut or poke holes for your plants or seeds, this will reduce the need for herbicides and weeding and save huge amounts of irrigation water.

## Open Source Ecology

This wiki is dedicated to the open, collaborative development of a basic and robust infrastructure for a Global Village economy, as embodied in the list of the 28 of the above products and services. Such a village is by design

- one which promotes the highest autonomy and freedom
- grounded in self-sufficiency
- dedicated to voluntary pursuits, right livelihood, and quality of life

The basic assumption for a New Village economy is that humans are capable of transcending struggle for survival and resource conflicts, where this preoccupation is replaced by higher pursuits of personal and societal evolution.

At the time of this writing several of the core projects are in testing phase but together should form the core of a fully self sufficient settlement avoiding many pitfalls of depending on globalist commerce.

<http://openfarmtech.org/>

# The Organic Way

As various studies can show, you don't need to dump fertilizers and pesticides on your plants to have a thriving farm/garden. The organic methods of gardening really took off in the 70's when many of the hippies, yippies, and yuppies took to the country in order to have a cheaper and peaceful life. After the conservative era of the 80's, and the party era of the 90's, people really began finding the advantages of growing organically in the last few years.

## Organic Pesticide Solutions

When using even mild pest removers remember to wash your foods, there are all kinds of things in the soil and compost that could give you a rough few days and cause you to lose a great deal of nutrients through diarrhea. Always use safe drinking water to wash your food, wash your hands, and wash your plates and utensils.

- Rotenone is the extract from the roots and stems of several tropical and subtropical plant species belonging to the genus *Lonchocarpus* or *Derris*. It was first used as a fish poison; its powder is an effective pesticide and is only moderately toxic to humans, birds, and mammals. Rotenone is allowed by most organic certifying agencies.
- Tobacco leaf extract can be made as a tea from tobacco leaves which you can also grow in your garden. Spray the tobacco leaf tea onto your plants, one cup of shredded tobacco leaf to one gallon of water. Do not use on pepper (capsicum), eggplant (aubergine), or tomato (to-MAH-to) plants as this carries a very high risk of infecting your plants with tobacco mosaic virus. Nicotine from the tobacco tea is mildly toxic.
- One clove garlic and 2 tablespoons cayenne pepper crushed and soaked in warm water will work effectively: filter and spray onto plants.
- Mild soap solution (preferably an organic, vegetable-oil based soap) sprayed onto plants will often repel pests, as well as remove pre-existing insects. A mild salt solution often works too, but avoid spraying it onto your soil.
- Most plants with strong odors or sharp flavor have these attributes to repel insects, try alone or in combination to eliminate insect problems.
- Avoid planting the same type plant in the same location year after year. Also, remove and burn dead plants in the winter time to prevent providing a comfy winter home for insects.
- Ladybugs are very effective at eating aphids, those tiny lime green bugs which attack leaves, ladybugs are available at most garden stores.

## Organic Fertilizers

Organic farmers use animal manure, manufactured seed meal, home and garden compost, and mulching as well as several natural mineral powders like rock phosphate and greensand, a naturally occurring form of potash. Used tea leaves are very good for restoring nutrients to the soil. What else would you do with them anyway? Straw can also be used super effectively as an organic mulch.

## Compost

Composting is the natural breakdown and return to soil of organic wastes such as garden and kitchen wastes. It is best to keep your home composting to the waste of vegetarian animals and vegetable matter, meat and dairy require higher composting temperatures, consider burying this waste instead. Once the composting is under way, start a new bin or pile and use the older heaps for garden fertilizer. Composted vegetable matter is even more important than nitrogen sources like manure for feeding your plants.

If you are involved in a food co-op or something similar, such as a commune, or even a group of like-minded individuals living on your street, you should designate someone as the official composter. Sending all of your organic waste to the compost cuts down on your waste output as well as that of the whole world. Once the compost batch is done, distribute it out to those growing food.

Most coffee places especially if asked will bag their used coffee grounds for people who want to use them to add to their soil. It's 100% free, and can be a great additive to your soil.

## Crop rotation

Some crops like wheat will remove nitrogen and nutrients from the soil, while others actually increase available nutrients. It is important to remember that one crop grown continually will burn out a field and will attract pest infestation. Some examples of good rotations to improve overall soil nutrition are alternating rice then cotton, or soybeans then maize, old Europe farmers planted rye the first year, oats or barley the next year and nothing the third year. The Irish potato famine could have been prevented had crop rotation been used. Sweet-clover is a great fallow cover crop with very high nitrogen fixation but be careful as it can cause bloat in some animals if they get into it. Also remember to use all available compost and green manure to improve soil nutrition. Chemical herbicides and pesticides can kill the nitrate fixing bacteria in the roots of your plants. Here are some vegetables that do well when they are planted together: beans-potatoes; peas-carrots; peas-turnips; cabbage-beets; kohlrabi-beets; spinach-cauliflower; spinach-eggplant; corn-cucumbers and corn-beans.

### **Nitrogen fixation in legumes grown under irrigation of 8 inches of H<sub>2</sub>O/yr**

Crop - Nitrogen Fixed Symbiotically (lb N/ac)

- Sweet-Clover - 223
- Fababean - 267 (Must have proper irrigation or nitrogen fixation drops greatly)
- Field Pea - 178
- Lentil - 134
- Soybean - 134
- Chickpea - 108 (good in dry soil)

- Dry bean - 62

When we grow tired of war as a species there will be a great surplus of explosives and gunpowder, when the time comes consult a soil chemist as to which powders and explosives can be safely turned into valuable non-toxic nitrogen fertilizer.



# Farm Animals

## Bees

A fun way to commune with nature and help out your own crops is to start and run a bee hive. Try to be organic in your bee farm by not using weird chemicals. Bees like to stay in one place. Don't bother them by constantly moving their hive or smoking them. Leave them part of their honey for food. Don't completely substitute corn syrup.

A web search will turn out several good designs for beehives but the basic idea is a stackable wooden box with a small entry at the bottom and vents toward the top. Proper design allows enough ventilation for easy cooling in summer but closed enough that the bees can keep warm in winter as well as easy regulation of humidity, if your hive doesn't address these design issues the bees will have to waste energy fixing the problem thereby consuming more honey and spending less effort collecting. Honey comb frames are slotted into the the box and beeswax sheet is attached to these frames, be sure there is gap enough for the bees to add honey or larva cells. Bees are calmed with a smoker, it knocks them out, a brush helps knock off the stragglers. You carefully remove your frames once they are full of honey and press it out, keep enough wax to roll out and restart a new honeycomb sheet. You can make a bee keepers hat by putting a drawstring around a mosquito net and wearing it over a wide brim hat, gloves and long sleeves, closed collar with scarf or tie, and long trousers to reduce skin exposed to stings. Expect to get stung occasionally as you raid for honey.

## Design

(wikipedia)

The Langstroth bee hive is made up from top to bottom of:

- **Telescoping cover** or migratory cover
- **Inner Cover**
- 1 or more **hive body** / **hive bodies** or honey supers made of wood, polystyrene, or plastic
- (optional) queen excluder between brood box and honey supers
- 8-10 **Frames** made of wood or plastic per hive body or honey super
- Foundation made of wax and wires or plastic
- **Bottom Board** with optional entrance reducer

## Outer cover

This is a wooden or polystyrene cover that fits on the top of the hive. In the north, where the cover usually telescopes down around the inner cover and an inch or so down over the top super, it is called a telescoping cover. Many commercial beekeepers use what is called a migratory cover, which is a solid cover that does not extend beyond the sides of a hive body.

## Inner cover

The inner cover provides a barrier between the telescoping cover and the bees. In the more temperate climates a plastic foil may be used as an inner cover. (It is not wise to winter bees under plastic foil, as the hive would become wet and bees can be lost easily). In areas with a hot summer a solid inner cover with a communication hole provides dead air space for insulation against heat and cold. It prevents the bees from gluing the top cover to the top bars of the super under it. With an inner cover, the top cover is easy to remove from the hive. When the frame of the solid inner cover and telescoping cover is notched it can serve as a top entrance for the bees. A communication hole in the middle allows bees to reach emergency food placed above by the beekeeper if it becomes required.

Granulated sugar can be poured onto the inner cover near the hole and the bees will be able to get to it during even the coldest of days.

## Hive body and hive super

Hive bodies and hive supers are four-sided boxes with standardized inside dimensions. There are generally four different sizes. Outside box dimensions vary depending on the type of material used. Polystyrene boxes have much larger outside dimensions than boxes made out of wood. Deep and medium hive bodies are provided to serve as the brood chamber, the part of the hive where the queen lays eggs and the bees care for the larvae. Medium, shallow and comb honey supers are used for honey stores and to harvest the honey. The inside width is 14 11/16 inches (373 mm) and the inside length is 18 5/16 inches (465 mm). The frames rest on a rabbeted side along both ends of each box.

The deep hive body is normally used only for brood as it becomes too heavy to manually handle if it is filled with honey. Commercial operations usually use one or two deep hive bodies for brood and additional shallow hive components for honey supers. Most hobbyists prefer to standardize on all mediums. Shallow supers are not ideal for the brood chamber of the hive because the bees need to form a single compact sphere during the cold winter months – a sphere that can expand and contract without being divided by a horizontal plane in the middle caused by the gaps between combs in multiple hive bodies.

### **Type**

Deep body  
Medium (Illinois) super  
Shallow super  
Comb super

### **Depth**

9 9/16 inches (243 mm)  
6 5/8 inches (168 mm)  
5 3/4 inches (146 mm)  
4 3/4 inches (121 mm)

### **Frame length**

19 inches (483 mm)  
19 inches (483 mm)  
19 inches (483 mm)  
19 inches (483 mm)

### **Frame depth**

9 1/8 inches (232 mm)  
6 1/4 inches (159 mm)  
5 3/8 inches (137 mm)  
4 1/8 inches (105 mm)

**Frame width**

1 1/8 inches (29 mm)

1 1/8 inches (29 mm)

1 1/8 inches (29 mm)

1 1/8 inches (29 mm)

The hive body or hive super holds 8-10 frames that are standardized in length. The frames hold the foundation and the honeycomb that is built on it.

**Bottom board**

The bottom board supports the hive. It must be strong to hold the weight of a hive that is filled with honey. The hive weight may exceed 300 pounds (140 kg). The bottom board is the floor of the hive with a 3/4 inch (2 cm) rim around three sides to allow the bees to enter the hive on one side. It also extends 2 inches (5 cm) in front of the boxes to provide a landing board for the bees. Because it is close to moisture in the soil, it is the first to show any sign of decay or rot and it is advisable to use bottom boards constructed of cedar wood. When the hive body sits on the bottom board the provided opening is 14 11/16 by 3/4 inches (37.3 by 1.9 cm). This opening may be suitable for a strong bee hive during the summer but it also may be reduced with a hive entrance reducer when necessary. A reduced opening allows a weaker hive to defend itself and prevents mice and cold winds from entering the hive.

Many bee keepers have screened bottom boards instead of solid bottom boards to aid in hive hygiene, air circulation and to screen for diseases. Some beekeepers add a slatted rack between the bottom board and the hive body. A slatted rack helps the queen in establishing brood comb closer to the entrance of the hive.

**Chickens**

Even if you only have a small available run area, like an urban rooftop, raising chickens will help eliminate some bugs and provide you with eggs. Use a bright light after laying to shine through and find the unfertilized eggs if there is a rooster around. Unfertilized eggs will rot if not harvested. Have a dark box for the hen to lay in otherwise she will hide and bury the eggs, be sure to get the unfertilized eggs before the hen eats them which many hens do when not brooding, keep putting the hen in the box until she nests there. Let your chickens run wild if possible, as they will usually stay near the feed. Ducks, quail, pheasants, and peacock are also fun to raise for eggs. These birds can live off of fresh compost bin stuff, cracked grains and corn in winter. Placing a bright light over their run will tell their bodies to produce eggs even in winter, be sure to feed them enough that egg laying will not overtax their bodies, most hens produce an egg once a day or every other day. Save the high nitrogen manure soil for fertilizer. In an apartment with a balcony or rooftop lay a few square meters of soil on a tarp and provide shade. Chicken hens are fun safe pets for kids but teach them to not abuse them.

It is still possible to order chickens and other farm birds in the mail, do a web search, or take a drive to the country and visit a feed store, a rare pet shop might be able to help you. After Easter go door to door collecting live colour dyed chicks to raise for your brood, most of these will be male throw-away chicks, which is OK if you are a carnivore and plan to kill them anyway for food.

Speaking of killing, use a big knife or hatchet to behead your birds, hopefully a very quick death after a healthy free range life. Pluck the bird before opening, some people like to quickly dip the dead bird in a bucket of boiling water to loosen the feathers, although this will alter the taste. Cut open the abdomen and remove the guts, give them a quick look to make sure they are smooth and glistening, otherwise the bird might be sick, most guts are good for use in cooking, don't waste them. If you are still hungry after this, bon-apetit.

## Goats

Goats are smart, probably as smart as a dog when compared to dumb sheep, they need stimulation to keep them out of trouble, once bucks (males) mature they can sometimes get aggressive depending on breed. Goat does (females) will start giving milk after having their first litter of kids, there are very small pygmy goats that still produce one to two liters of milk a day if they are fed well. Goats will eat almost anything and are useful for clearing a yard of blackberry overgrowth and mowing the lawn. But they will also tear plastic parts from cars, rubber tires, house siding, nails, and other non healthy things if they are too close, especially if they are bored and have nothing else to do. They will also eat a rope if they are tied up. They are less able to survive solely on scraps and also need hay if there is not grass to eat. As with chickens they need place to be free and they like a high place to stand on sometimes. Some goats can be trimmed for wool.

## Sheep

Domestic sheep are friendly although a little dumb, they need a lot of help which a smart sheep dog will provide. The natural maternal instincts of a Shepard dog pushes them to herd and protect these sweet dumb animals. Pick a breed that won't be too hot in your climate. Once a sheep has lambs you can start milking the sheep. Shear sheep right before hot weather sets in. Sheep are too dumb to move if they have eaten all of the grass and will mow an area bare, don't let your sheep cause erosion problems, keep them moving.

## Aquaculture

If you have a pond where you live or if you can lay down a plastic liner in a depression in the ground you can start raising fish and aquatic plants. You can start by stocking fast growing fish which you either catch or buy and then introduce them into your pond and feed them. You will need to watch water temperature and aeration (oxygen) as well as pH so your fish will survive. Adding aquatic plants both helps feed and oxygenate the tank the plants are also fed by the fish. Chicken wire fence will help keep robber animals like raccoons from stealing the fish.

## Cows

American size cows take up too many resources to be practical. If used as a tractor to pull a plow or wagon having a cow might be justified. Cows are easily seen from the road by agriculture dept. inspectors, a problem once compulsory animal registration is enforced.

## Donkeys

A donkey is a great choice for a labor helper animal. They are usually gentle and sweet if treated well. Horses are mostly a wasteful extravagance in both food and care, you can walk while the donkey pulls a cart or carries a proper load. A harness or saddle must be fitted by someone trained in this skill, always check for rubbing and soreness. Never ride or work a new donkey until you have taken him to a veterinarian for a checkup.

## **Rabbits**

Rabbits are the workhorse of meat animals. Two females (does) and one male (buck) can produce enough offspring in a year to provide at least one meal a week for a small family. Rabbits can be fed hay, commercially produced pellets, or vegetable scraps. Dietary changes should be made gradually to avoid gastric upset. Pelts can be tanned using salt/alum or even brain tanned.

## **Animal Medicine**

Merck & Company, one of the world's largest pharmaceutical companies, offers an on-line version of its book, *The Merck Veterinary Manual*: <http://www.merckvetmanual.com/mvm/index.jsp>. You can also buy the 2,700 page print version from the usual sources.

# Canning and Pickling

REFERENCE: Complete Guide to Home Canning, Extension Service, USDA, 1994.

If you have a good harvest from your greenhouse or if you want to preserve a particularly good dumpster haul you should consider home canning. Canning is a way to preserve food by heating and killing bacteria and then sealing the food in with special lids so no new bacteria can enter ruin it. Most canned foods last around a year although the more acidity the longer the life even if the acid removes some nutrients. If you can find glass jars that fit canning lids it is OK to use them for canning as long as there are no chips around the rim and that there are no hairline cracks anywhere, but real canning jars are always the best. The very best canning system is to use a pressure cooker, this vessel might be expensive if you get a proper model capable of the 15psi, they might also be hard to find, especially in tough times, but watch thrift stores for deals but know how to recognize good form the cheap low pressure models. We will only discuss hot water bath canning which requires only a container of hot water at a minimum. As with many subjects that we cover read up on the subject before starting, we only cover the very basics.

Many stores sell canning lids, these lids have a special compound which seals to the jar rim. DO NOT REUSE jar lids, they are not designed to seal twice, especially do not reuse the screw on lids from store foods, these are just not safe. Jar lids are inexpensive and there is normally no reason to substitute. Most lids have sealing compounds that can be shelf stored five years from date of manufacture and after that may not seal properly. Some older books recommend using wax as a sealing compound for reusing lids on jams and jellies, this is not the best as the seal is questionable it often allows mold in.

If normal canning you food is not possible due to lack of proper lids and jars we suggest cutting the food into thin strips and sun drying fruits and veggies under a fly net or salting and smoking or oven drying meat and fish at around 100C(212F) until the meat is hard. Improper canning is a waste of your food, it will spoil, although cold vinegar and salt pickling in a reused clean jar should work for a few months on boiled eggs, and raw or slow cooked fish, and meats.

Always use your senses to tell you if the seal is good on your stored foods

- Is the lid sucked down, and does it pop when you open it, or is it bulging from rot?
- Is the coloration normal or do you see unusual spots or discoloration
- Does the food smell wrong?

If any of these or something else makes you suspicious throw the food out, there is no reason to poison yourself, your friends, or pets with botulism, molds, or other toxins from improperly canned food.

The only foods that may be safely canned in an boiling water bath (non-pressure cooker method) are highly acidic ones with a pH below 4.6, such as fruits, pickled vegetables, or other foods to which acidic additives have been added, such as vinegar, citric acid powder, ascorbic acid, or lemon juice.

## Canning Process

Here is what to do:

- Pack food firmly into jars. Leave 1/2 inch headspace at the top of the jar.

Note: Some fruits will need to be precooked before packing into jars. This is called the "hot pack" method. To "hot pack," the fruit is brought to a boil in the syrup, juice, or water, cooked briefly, and packed into hot jars. Hot liquid is poured over the fruit. Hot packing helps to prevent fruit from floating in the jar.

- Pour boiling fruit juice, water, or syrup over the fruit in the jar. Fill within 1/2 inch of the top of the jar. Run a non-metal knife or spatula along the inside of the jar to remove air bubbles. Wipe off the top of the jar rim with a clean cloth.
- Place hot sealing lid on packed jar next to glass. Screw band on jar until just tight.

The canner(or large pot) should be covered during processing. The hot boiling water should cover the tops of the jars during the entire processing time.

After processing time is completed, remove hot jars and place on a towel or rack to cool. Keep jars out of drafts. DO NOT TURN JARS UPSIDE DOWN. When jars have cooled, check for sealing.

## Processing Times

Processing Times For High-Acid Foods Using A Boiling Water Bath Canner (212° F)  
Fruits & Vegetables | Pints(1/2 l) | Quarts(Liter) |

Apples (hot pack)	20 minutes	20 minutes
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Apricots (raw pack)	25	30
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Berries (raw pack)	15	20
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Cherries (raw pack)	20	25
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Dill Pickles (raw pack)	10	15
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Sweet Pickles (raw pack)	10	15
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{Fruit Juices (hot pack) | 15 | 15 |

iFruit Jams and Jellies	10	10
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{Peaches (hot pack)	20	25
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jPears (hot pack)	20	25
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{Plums (hot pack)	20	25
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{Pickle Relish (hot pack)	10	—
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●Rhubarb (hot pack)	10	10
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{Tomatoes (hot pack)	35	45
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jTomato Juice (hot pack)	35	40	- If using the raw pack method, have the water in the canner hot, not boiling. Placing raw pack jars in boiling water may cause the jars to break.
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- If the rack does not have handles, leave the rack in the canner and place the jars in the rack using a jar lifter.
- When fruit is hot packed the fruit is heated before it is placed in the jar. Raw packed fruit is not heated, but it is still covered with boiling liquid.
- Tomatoes are normally considered to be an acid food. However, some varieties may have pH values above 4.6. Therefore, if tomatoes are to be canned as acid foods, they must be acidified with lemon juice or citric acid. Add 2 tablespoons of bottled lemon juice or 1/2 teaspoon of citric acid per quart of tomatoes. For pints, use 1 tablespoon bottled lemon juice or 1/4 teaspoon of citric acid.



# AgriBiz and Seeds

It can't be stressed enough that corporately designed and patented GMO seeds will grow GMO crops. Sadly, there are a number of seed companies that are owned by the largest agricultural businesses with the illusion that they are independently owned. Six companies (Aventis, Dow, Du Pont, Mitsui, Monsanto and Syngent) reportedly control 98 percent of the world's seeds. On every continent, these companies are opening research facilities and acquiring local seed companies.

The following is a list of seed brands that are known to sell GMO seeds (as compiled by Garden-Of-Eatin.com at: [//www.garden-of-eatin.com/how-to-avoid-monsanto/](http://www.garden-of-eatin.com/how-to-avoid-monsanto/))

- Audubon Workshop, Breck's Bulbs, Burpee, Cook's Garden, Dege Garden Center, Earl May Seed, E & R Seed Co., Flower of the Month Club, Ferry Morse, Garden Trends, Gardens Alive, Germania Seed Co., HPS, Jungs, Lindenberg Seeds, McClure & Zimmerman Quality Bulb Brokers, Mountain Valley Seed, Osborne, Park Bulbs, Park Seed, Park's Countryside Garden, Rocky Mountain Seed Co., Roots and Rhizomes, Rupp, Seeds for the World, Seymour's Selected Seeds, R.H. Shumway, Snow, Stokes, Spring Hill Nurseries, T&T Seeds, Tomato Growers Supply, Totally Tomato, Vermont Bean Seed Co., Wayside Gardens, Willhite Seed Co.

The Council for Responsible Genetics maintains a "Safe Seed Resource List" of non-GMO seed dealers in the USA, Canada and France, complete with addresses, phone numbers and website links:

- <http://www.councilforresponsiblegenetics.org/ViewPage.aspx?pageId=261>

The following books contain information on saving seeds for future harvests:

- *Basic Seed Saving* by Bill McDorman
- *Breed Your Own Vegetable Varieties: The Gardener's & Farmer's Guide to Plant Breeding & Seed Saving* by Carol Deppe
- *Heirloom Vegetable Gardening: A Master Gardener's Guide to Planting, Seed Saving, and Cultural History* by William Woys Weave
- *Saving Seeds: The Gardener's Guide to Growing and Storing Vegetable and Flower Seeds* by Marc Rogers and Polly Alexander
- *Saving Seeds As If Our Lives Depended On It* by Dan Jason
- *Seed Sowing and Saving: Step-by-Step Techniques for Collecting and Growing More Than 100 Vegetables, Flowers, and Herbs* by Carole B. Turner
- *Seed to Seed: Seed Saving and Growing Techniques for Vegetable Gardeners* by Suzanne Ashworth and Kent Whealy
- *The Zero Mile Diet: A Year-round Guide to Growing Organic Food* by Carolyn Herriot



Farm It

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