

**APRIL EDITION**

# **SURVIVAL LIFE**

**M A G A Z I N E**

## **PEST REPELLING PLANTS:**

KEEP YOUR GARDEN  
PEST FREE

## **THIRTEEN SURVIVAL TIPS FROM THE GREAT DEPRESSION**

## **HOW PREPARED ARE YOU?**

## **SMARTPHONE APPS FOR GARDENERS**

**BUILD A BETTER GARDEN**

**KEEP YOUR  
FOOD FRESH  
IN AN  
OUTAGE**

# **SEVERE WEATHER SAFETY**

### **ELECTRICAL BACKUP**

Keep your food  
through an outage

### **RAISING RABBITS**

An excellent  
meat source

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# FROM THE EDITOR

## DEAR SURVIVALIST,

It seems like spring is officially in full swing.

I love this time of year. It's a perfect time to make a change and a new start in your life. If you

have some habits you want to change, a new skill you want to learn or a new hobby you want to

try...what better time to do it than spring?

Have you ever wanted to try your hand at survival gardening? Raising rabbits for food?

Alternative energy?

Now is the time to get started.

## IN THIS MONTH'S EDITION OF SURVIVAL LIFE MAGAZINE:

we've put together some great tutorials on the

above topics, as well as tips to survive the harsh spring weather, and some life lessons that can

be learned from those who lived through the Great Depression. All these topics and more can be found in the pages of our April issue.

I hope that these articles are useful to you in your survival journey, and that as you learn and grow, you will share your knowledge and skills with others in order to help grow the prepping community.

Helping new preppers on their journey (and even experienced preppers who want to learn more) has always been my passion. I am so lucky to be able to do what I do, and to have met so many awesome people along the way. It's a privilege to be able to share my knowledge with you.

## REMEMBER, WE'RE ALL IN THIS TOGETHER!

**"Above Average" Joe**

Editor-in-Chief  
Survival Life Magazine





# RAISING RABBITS: AN EXCELLENT MEAT SOURCE FOR PREPPERS & HOMESTEADERS

By: Michael Filppu

*The decision to raise rabbits, for me, came down to a few factors. I wanted an animal that would supplement the usual meats in my diet: chicken, beef, and pork. I also wanted an animal that would be easy to take care of, easy to clean, wouldn't cost too much, and one where I would not have a big allergic reaction. I found out later that rabbit meat is very high in protein and very low in fat.*

## FOOD

There are a few different kinds of food on which rabbits will thrive, and they range from store bought rabbit food to things that grow in the backyard. Store bought rabbit food at a pet supply store is expensive. A farm animal supply store will have bulk products at reasonable prices. A 50 lb. bag of rabbit feed costs between \$15 and \$20. Rabbits also eat carrots, timothy hay, and lettuce to name a few convenient options. A 50 lb. bale of timothy costs about eight dollars. One family of garden vegetable to avoid when feeding rabbits is onion. That means do not give onions, garlic, asparagus and chives. The rabbits eat about 1 cup of pellets per day. If we do not feed the rabbits with pellets, we give carrots, apples, timothy hay, or cabbage.

The water bottles we use can be purchased from a pet store, but we found them cheaper at the same

place we buy the feed. In the winter and summer, the bottles need to be changed frequently. In the winter, because the water freezes. In the summer, because the rabbits drink more when it is hot.



Special note – A rabbit's teeth never stop growing, so they need something on which to gnaw to prevent their teeth from getting too big to the point where it could harm itself. A rabbit whose teeth are too

big can hurt itself through its bites, or by refusing to eat. Our rabbits will chew on protruding pieces of wood, the salt licks we put in with them, or even the metal caging. The best thing to give them is a couple of apples or apple branches, some timothy hay, carrots, or hardened bread.

## POOP

Rabbit poop is generally small, round, and a little bigger than a raisin. Their poop makes a great fertilizer for garden soil. The manure is safe to use in the soil around food plants.



## CAGES

Our rabbit cages have a few aspects to them that are worth mentioning. Each one has a roof that slopes, so rain will not collect on it. The cages for the females include a hutch. The hutch has a hole that is 6-7 inches in diameter to allow a full-sized rabbit to easily pass through from the hutch to the main cage. The hutch is primarily used for nesting and giving birth. The floor of the hutch is solid wood, while the floor of the main cage is metal wire caging. The purpose of the wire caging is to prevent the build-up of bodily waste inside the cage. This way, it will build up beneath the cage, and

is easier to clean. The dimensions of the cage are 24 inches long, 24 inches wide, 24 inches tall. The hutch is about 13 inches wide, 24 inches long, and between 13 and 16 inches tall (with a sloping roof).



## SEPERATING MALE & FEMALE

When the rabbits are babies, it is not so much of an issue to keep male and female rabbits together. When they get a little older, they must be separated for a couple of reasons. First, they will breed. Babies from brother and sister are usually smaller than from unrelated parents. Second, the rabbits may kill each other. Males especially will fight. Females seem to get along when they are in the same cage together.

Telling the difference between male and female can be a bit

of a challenge, especially when the rabbits are young. I usually separate my rabbits when they are between 1 and 2 months old, so they are still too young to mate. The best way to tell the difference is to check the genitals with your thumb and finger. Young rabbit genitalia looks almost the same for male and female. The way we do it is to grab the rabbit and hold him or her belly up. Find the anus with your thumb, and with your finger, stretch the fur just above the thumb. This will expose the genitals. The difference between male and female is that the male will have a “.” at the tip of his penis. Seriously, it looks like a pin hole. The female will have a “|” that just looks like a longer version of the pin hole. I tried to capture this in the pictures, but not sure if I did a good job. If you do not stretch the skin down there enough, it could be easy to confuse a female for a male.





## BREEDING

Ok, you've got your male rabbit and female rabbit living in separate cages. They are not brother and sister, mother and son, or father and daughter. The way to get them to breed is to take the female and put it into the male's cage. If they fight too much, or one starts to scream, separate them and try again in a couple of days. I usually let our male and female rabbits spend about 20 minutes together. It does not take that long, but sometimes they need to mate more than once to get it right.

## BABIES

A female rabbit can have multiple babies. The most that any of ours has had is 8. The female will give birth around 30 days after she mates. Shortly before the mother is ready to give birth, she will pull off a bunch of her fur and place it in the hutch. As you check on the rabbits, and you notice the fur piling up in the hutch, just know that the babies are not far away. Check the fur once a day. You don't need to stick your hand in it, but just look for movement in the fur. After you see the movement, part that top layer of that fur (if the mother rabbit allows you) to confirm all babies are alive. Keep



feeding the mother normally, she will take care of the babies. **DO NOT TOUCH THE BABIES!** The mother will separate any that are sick and they will die. Be vigilant to remove the dead babies if there are any.

## COSTS VS. BENEFITS

To start raising rabbits, there are a few costs that need to be assessed. There is the cost of cages. As an unskilled carpenter with a 3rd grade ability to build things, I constructed cages for my rabbits for about \$25.00 each. However, they only lasted one year before they were uninhabitable. We purchased 2 larger cages that were divided in half, and had 3 hutches for \$235.00 total. We found a guy who worked well with wood and metal caging. He built the cages from durable materials. They have taken a beating from the wind, sun, rain, snow, and

rabbits, and they are as strong today as the day we bought them. The cost of the feeders is around \$9.00 each, the cost of the water bottles is around \$6.00. When you are only feeding one rabbit, a 50 lb. bag of rabbit feed will last a long time. Once the rabbits start having babies, the food goes faster..

## A FEW THINGS TO NOTE

If you want to raise rabbits for food, do not buy them from a pet store. Our first rabbit was a birthday gift for my wife. The rabbit was already pregnant. The first rabbit we bought was at a kind of flea market. Craigslist can also be a resource for purchasing a rabbit. If you live within city limits, be sure to check the city ordinances to find out how many adult animals you are allowed to have. If a rabbit dies, remove it immediately and do not breed your rabbits until you are sure whatever it died from is not contagious.

There is something else I want to say here. If you are raising rabbits for food, do not name them. The more emotionally attached you are to them, the more difficult it will be to kill and butcher them. In my next article, I will go through the killing and butchering process.



# PLANTS THAT REPEL INSECTS AND PESTS

## >KEEP YOUR GARDEN PEST-FREE THIS SPRING

By: Stacy Bravo

Repel Insects and Other Pests... Naturally! Here are 8 plants that can deter those pesky insects and other pests such as mice.

### 1. MINT

Mint is a useful and inexpensive herb that can repel flies. You can use mint in both forms – in fresh or dried form – to deter flies. Apart from flies, mint is also helpful against mosquitoes, ants, and mice.

You can keep crushed mint leaves in shallow bowl, to keep flies away. If you want, you can also fill few muslin tea bags with dried crushed mint leaves and keep them in the infested areas.

Tip: Because mint grows so quickly, keep your mint plant in its own pot to prevent it from taking over your garden.



### 2. BAY LEAVES

Bay leaves produce a subtle scent that flies hate. Other insects like moths, roaches, earwigs, and mice also hate the fragrance of bay leaves.

You can grow bay leaf plants in pots to place in the infested areas to keep roaches, flies, and mice away. Dried bay leaves are equally effective in repelling flies.



### 3. LEMONGRASS

To help deter mosquitoes with its strong fragrance, plant lemongrass along walkways and in locations close to seating areas. Also, plant lemongrass in large planters which can be moved around as they also function as a privacy screen and smells wonderful.



### 4. BASIL

In fly infested areas, you could use potted plants of basil to deter flies. You can use them near external doorways and/or seating areas. If, for some reason, you are unable to use fresh basil, you can also use



dried basil. You can keep dry basil leaves in a muslin teabag, near the infested area.

One important thing about the basil plant – it should always be watered at the root and not on the leaves, as this will produce a stronger fragrance.



## 5. GERANIUMS

They not only add a boost of color but geraniums also keep out Japanese beetles. These would look beautiful in the front walkway. Curb appeal and bug deflector... can't beat that!



## 6. CATNIP

We all know that cats love catnip, but this perennial also has quite a reputable history as a medicinal herb. One trait that this plant is less known for is its mosquito

repelling ability. The natural oil within the leaves has been proven to be ten times more effective than DEET at repelling mosquitoes.



## 7. PYRETHRUM CHRYSANTHEMUMS (SPECIFICALLY, THE ONES THAT LOOK LIKE DAISIES)

The blooms of these lovely chrysanthemums contain pyrethrum, which is frequently used in natural insect repellents and dog shampoo. The chemical can kill and repel ants, ticks, fleas, spider mites, roaches, Japanese beetles, lice, and even bed bugs. This characteristic makes it a popular insect-repelling companion plant in vegetable gardens. Pots brimming with these yellow and white blooms are also a welcome addition to any outdoor seating areas.



## 8. CITRONELLA MOSQUITO PLANT

The Citronella Mosquito Plant is a genetically engineered geranium hybrid with a unique characteristic – it repels mosquitoes! It is easily grown as a potted patio plant, and it is easily enjoyed for its attractive foliage and sweet lemony scent, as well as for its mosquito repelling powers. Citronella is the substance in citronella candles, which have long been used to deter mosquitoes. This plant is most effective as a repellent if you crush a few leaves and rub them on your skin.





# 13 SURVIVAL TIPS FROM THE GREAT DEPRESSION

By: Leslie Hale

*I've often heard my grandmother tell stories about growing up during the Great Depression. She was around 10 years old, the seventh of eight children. Their family was very poor, and her father (my great-grandfather) took every odd job he could to make ends meet while her mother stayed home to raise the eight children. She's told me many stories of standing in line for cheese and bread rations, and how they could only afford one pair of shoes a year, which they wore until holes were worn into the bottom.*

*I've always admired the wisdom and resilience of people who grew up during that time. Growing up in such great hardship equips one with mental toughness and the skills to survive almost any situation.*

*Here are 13 survival skills we can learn from those who grew up in the Great Depression.*

## 1. REUSE, REUSE, REUSE



To this day, my grandmother is the type to not throw anything away that she might use later. Scraps of fabric, wrapping paper, containers such as pill bottles and tons of other items we might consider trash can actually be reused and

re-purposed. If you think something might be of use later, don't throw it out.

## 2. USE MEAT EXTENDERS TO MAKE MEALS STRETCH FURTHER



During the Great Depression, people would use "fillers" such as oatmeal or lentils to bulk up their meat dishes and make them go a little further. This is also a great way to make your meals a little healthier.

## 3. MAKE YOUR OWN TOILETRIES



Toiletries such as soap, shampoo and toothpaste can be made at home for a fraction of the cost.

## 4. DON'T PAY FOR ANYTHING YOU COULD DO YOURSELF



The convenience of hiring someone to mow your lawn, change your oil or clean your house might be convenient, but you're really just throwing money away. Save money by doing it yourself, and enlist the kids to help.

## 5. GROW YOUR OWN HERBS & VEGETABLES



Growing your own food is not only a rewarding and healthy hobby; it will save you hundreds of dollars every year.

## 6. BUY GENERIC WHEN YOU CAN



From clothes to food to cleaners to medication, name brand doesn't always mean better. Do your research, and buy generic.

## 7. JUST A DAB WILL DO



Believe it or not, most of us are using too much soap, shampoo and laundry detergent. Our grandparents learned that "just a dab will do" — any more is a waste.

## 8. CLEAN WITH VINEGAR



Vinegar is an amazing natural household cleaner. Use it for everything from cleaning windows and mirrors to deodorizing drains.

## 9. LEARN TO SEW & MEND YOUR OWN CLOTHES



Sewing your own clothes is fun and will save you tons of money, and knowing how to mend them yourself will allow you to get a lot more use out of your clothes.



## 10. REUSE CONTAINERS



Tubs like the ones butter or sour cream are sold in can be washed and reused for a multitude of purposes. You can even make your own “miracle safe” out of an old mayonnaise jar.

## 11. RAISE ANIMALS FOR FOOD



Even if you don't have land for large livestock, smaller animals like rabbits and chickens can be raised in your backyard and killed for food.

## 12. LEARN TO PRESERVE AND STORE FOOD



Even if you don't have land for large livestock, smaller animals like rabbits and chickens can be raised in your backyard and killed for food.

## 13. CHERISH THE TIME SPENT WITH FAMILY



One thing I've always admired about my grandmother and her siblings is how they've stayed so close throughout the years. Times of hardship have a way of bringing us together, and cherishing the time spent with your family will make the hard times seem just a little better. Even if SHTF, staying close to your family — physically and emotionally — will give you hope and comfort no matter what happens.

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# SEVERE WEATHER SAFETY: >TIPS FOR SURVIVING EXTREME SPRING WEATHER

• • • • • By Stacy Bravo

## **SURVIVING THE SPRING WEATHER**

Spring – a season so dynamic and so unpredictable. Spring storms can change on a dime. Knowing exactly what to do when faced with fierce weather conditions is so important. In this article we'll discuss the dangers of tornadoes, floods, and lightning – and further discuss the safety measures you and your loved ones can take to ensure your family's safety.

We'll also discuss 72 hour emergency kits which anyone should have ready at all times for any emergency situations.

## **TORNADOES**

Tornadoes are violent by nature. They are capable of completely destroying well-made structures, uprooting trees and hurling objects through the air like deadly missiles. A tornado is a violently rotating column of air extending from the base of a thunderstorm down to the ground. Tornado intensities are classified on the Fujita Scale

with ratings between F0 (weakest) to F5 (strongest). Although severe tornadoes are more common in the Plains States, tornadoes have been reported in every state.

## **THE DIFFERENCE BETWEEN A TORNADO WATCH AND A TORNADO WARNING**

### **TORNADO WATCH:**

Tornadoes are possible in and near the watch area. Review and discuss your emergency plans, and check supplies and your safe room. Be ready to act quickly if a warning is issued or you suspect a tornado is approaching. Acting early helps to save lives!

### **TORNADO WARNING:**

A tornado has been sighted or indicated by weather radar. Tornado warnings indicate imminent danger to life and property. Go immediately underground to a basement, storm cellar, or an interior room (closet, hallway or bathroom).

## **HOW TO PREPARE FOR A TORNADO**

- Pick a safe room in your home where household members and pets may gather during a tornado. This should be a basement, storm cellar, or an interior room on the lowest floor with no windows.

- Practice periodic tornado drills so that everyone knows what to do if a tornado is approaching.

- Move or secure lawn furniture, trash cans, hanging plants or anything else that can be picked up by the wind and become a projectile.

## **TORNADO DANGER SIGNS**

- Dark, often greenish clouds – a phenomenon caused by hail

- Wall cloud – an isolated lowering of the base of a thunderstorm

- Cloud of debris
- Large hail
- Funnel cloud – a visible rotating extension of the cloud base
- Roaring noise

## WHAT TO DO DURING A TORNADO

- The safest place to be is an underground shelter, basement or safe room.
- If no underground shelter or safe room is available, a small, windowless interior room or hallway on the lowest level of a sturdy building is the safest alternative.
- Mobile homes are not safe during tornadoes or other severe winds.
- Do not seek shelter in a hallway or bathroom of a mobile home.
- If you have access to a sturdy shelter or a vehicle, abandon your mobile home immediately.
- Go to the nearest sturdy building

or shelter immediately, using your seat belt if driving.

- Do not wait until you see the tornado.
- If you are caught outdoors, seek shelter in a basement, shelter or sturdy building. If you cannot, quickly walk to a shelter, immediately get into a vehicle, buckle your seat belt and try to drive to the closest sturdy shelter.
- If flying debris occurs while you are driving, pull over and park. Stay in the car with the seat belt on. Put your head down below the windows, covering with your hands and a blanket if possible. If you can safely get noticeably lower than the level of the roadway, exit your car and lie in that area, covering your head with your hands.

## FLOODING

Flash flooding is the number one killer associated with severe weather. A mere six inches of fast-moving flood water can knock over an adult. It takes just 12 inches of rushing water to carry away a small

car, while two feet of rushing water can carry away most vehicles.

## THE DIFFERENCE BETWEEN A TORNADO WATCH AND A TORNADO WARNING

### FLASH FLOOD WARNING: TAKE ACTION!

A Flash Flood Warning is issued when a flash flood is imminent or occurring. If you are in a flood prone area move immediately to high ground. A flash flood is a sudden violent flood that can take from minutes to hours to develop. It is even possible to experience a flash flood in areas not immediately receiving rain.

### Flood Warning: Take Action!

A Flood Warning is issued when the hazardous weather event is imminent or already happening.

### Flood Advisory: Be Aware

A Flood Advisory is issued when a specific weather event that is forecast to occur may become a nuisance. A Flood Advisory is issued when flooding is not





expected to be bad enough to issue a warning. However, it may cause significant inconvenience, and if caution is not exercised, it could lead to situations that may threaten life and/or property.

## WHAT TO DO DURING A FLOOD

Water levels and the rate the water is flowing can quickly change. Remain aware and monitor local radio and television outlets. Avoid flood waters at all costs and evacuate immediately when water starts to rise. Don't wait until it's too late!

## WHEN FLOOD WATERS RECEDE

The damage left behind can be devastating and present many dangers. Floods can destroy homes and buildings, damage possessions, and decimate roadways. However, what you can't see can be just as dangerous. Floodwaters often become contaminated with sewage or chemicals. Gas leaks and live power lines can be deadly, but are not obvious at first glance.

## TURN AROUND, DON'T DROWN!

Never Drive or Walk into Flood Waters – Turn Around Don't Drown! On average, flooding claims nearly 90 lives each year. More than half of these deaths occur in motor vehicles when people attempt to drive through flooded roadways. This happens because people underestimate the force and power of water, especially when it is moving.

## LIGHTNING: WHAT YOU NEED TO KNOW

- NO PLACE outside is safe when thunderstorms are in the area!
- If you hear thunder, lightning is close enough to strike you.
- When you hear thunder, immediately move to safe shelter: a substantial building with electricity or plumbing or an enclosed, metal-topped vehicle with windows up.
- Stay in a safe shelter at least 30 minutes after you hear the last sound of thunder.

## INDOOR LIGHTNING SAFETY

- Stay off corded phones, computers and other electrical equipment that put you in direct contact with electricity.
- Avoid plumbing, including sinks, baths and faucets.
- Stay away from windows and doors, and stay off porches.
- Do not lie on concrete floors, and do not lean against concrete walls.

## LAST RESORT OUTDOOR RISK REDUCTION TIPS

If you are caught outside with no safe shelter anywhere nearby the following actions may reduce your risk:

- Immediately get off elevated areas such as hills, mountain ridges, or peaks
- Never lie flat on the ground.
- Never shelter under an isolated tree.



- Never use a cliff or rocky overhang for shelter.

- Immediately get out and away from ponds, lakes and other bodies of water.

- Stay away from objects that conduct electricity (barbed wire fences, power lines, windmills, etc.)

## 72 HOUR EMERGENCY KITS

There are many types of disasters and emergencies: floods, fires, earthquakes, hurricanes, and tornadoes. In many cases, a 72 hour kit could mean the difference between life and death. It is

estimated that after a major disaster, it may take up to three days for relief workers to reach some areas.

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# HELPFUL GARDENING APPS:

## >USE THESE CELL PHONE OR TABLET APPS TO PLAN YOUR GARDEN

By: Stacy Bravo

*You know the phrase “There’s an app for everything these days”. Well, as far as gardening goes, it’s true! I came across some gardening planner apps in Google Play that I think every gardener will love. Whether you are a beginner or a seasoned gardener, these five apps are a must have for any gardener!*

### GARDENATE

4.2 out of 5 stars

Cost - \$.99



All the information you need to “grow your own” and enjoy your successful vegetable garden.

Record your planting information and keep it synced on all your phones!

- Winner of 2012 Northern Inland Innovation Awards Professional Services category

- Recommended in New York Times '10 freshest picks' for gardening apps 2012.

The “Planting Now” calendar lists the vegetables and herbs you can plant every month, and adapts to your preferred planting dates – ideal if you use a greenhouse or cloche.

Use the ‘Wish List’ to plan your garden and record your seed and seedling purchases ready for planting.

Contains a detailed guide to growing 90+ of the most popular garden vegetables, with local planting information for the USA, Australia, Canada, New Zealand, South Africa and the UK.

Plant lists for planning your garden, detailed growing information on plants, and hints and tips from the community at [www.gardenate.com](http://www.gardenate.com).

All the information is on your phone

and there is no need for an wifi connection while using the app, except if you choose to sync to your other phones!

**Features include:**

- Local planting calendar for 90+ of the most popular garden vegetables, herbs, and soft fruits.
- Wish list for planning your garden and tracking your seed purchases.
- Add your own plants
- Add your own notes to any plants to record the best varieties and successes and failures.
- Use 'My Garden' to track your plantings, with the predicted harvest dates to assist in your garden planning. Add notes and photos.
- General diary notes with photos and Markdown text formatting.
- Print out planting and diary notes or save or email as PDF.
- "Share your garden" will sync your plantings and notes with your other phones and tablets, Android and iOS.

Our app uses the 'Identity' permission to create an account so you can (optionally) share your garden with your other phones and tablets. It doesn't read any other accounts. It uses the 'Photos/Medias/Files' permission so you can take photos in the app and attach them to your notes and planting details. It doesn't access any other files.

## VEGETABLE GARDEN — YUM GARDEN

4.1 out of 5 stars

Cost - Free



Home & kitchen garden planner is a must app for both a starter and an experienced gardener who want to learn more and take control over the gardening and planting tasks (like watering).

Kitchen garden planner allows you to define a variety of alarms for each vegetable or herb in your garden and get reminders when an action (like planting) should be performed on a vegetable or herb.

With Home & kitchen garden planner you will know the best companion plant for your vegetable and you will water your plants on time.

**Features include:**

- Companion planting catalog for herbs and vegetables
- Define alarms and scheduling for different activities on the plant
- Track the growth and health of your plants

- Track expense for your plants

- Track images for your plant

## GARDROID — VEGETABLE GARDEN

4.0 out of 5 stars

Cost - Free



Have you always wanted a kitchen garden but you have no idea how to get started? Gardroid helps you to harvest your own vegetables by providing useful information about the cultivation methods of various vegetables.

**Features include:**

- Suitable sowing and harvesting periods
- The desired temperature to sow
- Helpful tips for taking care of the plant
- The right sowing depth, row distance and spacing between plants
- Track the progress of your vegetables
- Gardroid allows you to put the probable harvesting day for each



plant in your calendar, so you have an idea when you'll be able to enjoy your fresh crops!

## VEGETABLE GARDEN IDEAS

3.4 out of 5 stars

Cost - Free



Only have a small space for your veggie garden? Want to plan a garden that's both beautiful and productive?

No problem! Get ideas for growing your own crops in pots, pocket gardens, and clever raised beds.

## ORGANIC GARDENING

3.5 out of 5 stars

Cost - Free



Organic Gardening is an essential quick guide on organic gardening.

### Table of Contents of Organic Gardening:

- Why Garden Organically?

- Planning Your Organic Vegetable Garden

- Growing Your Organic Vegetable Garden

- Why Grow an Organic Herb Garden?

- Growing an Organic Herb Garden

- You Have Organically Grown Herbs, Now What?

- Organic Garden Fertilizers

- Organic Gardening Compost

- Why Use Organic Pest Control?

- How to Control Garden Pests Organically

- How to Bring Your Organic Plants Indoors; for Easy Year

- Round Growth

- Organic Container Gardening

- Organic Hydroponic Gardening

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# ELECTRICAL BACKUP FOR YOUR REFRIGERATOR-FREEZER: >KEEPING YOUR FOOD FRESH IN A POWER OUTAGE

By: Robert Brenner

*My greatest challenge for power-out backup electricity has been how to keep the side-by-side refrigerator-freezer in my kitchen going after the grid goes out. The issue is how to produce 6.5 Amps of 120VAC for the appliance on a 24/7 basis.*

I've looked at a number of possible solutions and each has an associated cost-benefit. Solar works only when the sun is shining. Deep cycle batteries require ventilation and monitoring for safety—which means vacation trips would be short or someone staying in my home to monitor battery condition. Backup generators require fuel to operate. And I don't have sufficient wind or hydro resources in this area to produce enough electricity for the application.

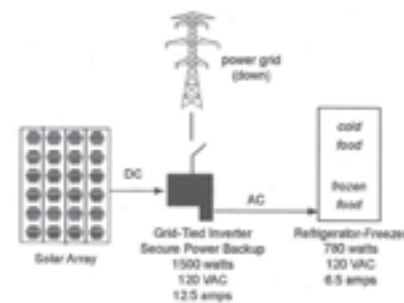
After studying the situation while gradually building up my backup resources, I found a way to solve my problem—or at least mitigate it to a manageable level.

I have solar power and use the new Sunny Boy 3800TL-US SMA inverter with the secure AC electrical backup socket as shown in Figure 1. The actual socket connection is in the lower right of the photo.



This handy product produces 1500 watts of 120 volts AC and can provide 12.5 amps if grid power goes out and the sun is still shining. I need 6.5 amps even though the refrigerator-freezer operates on a 20% duty cycle (draws 6.5 amps 20 percent of the time when the compressor is running), so the secure power from the inverter works just fine during sunny days. Figure 2 shows the configuration chosen for this application.

Since a solar day here is about 7 hours long, I need another way to

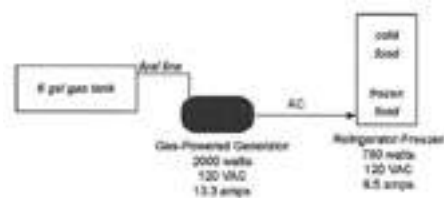


produce electricity for the 17 hours my solar panels aren't producing power. I decided to use a Honda 2000i portable generator (Figure 3).



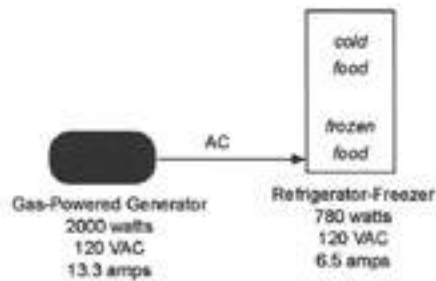


The 2000i has several external power sockets and can produce 13.7 amps of 120VAC using unleaded gas. The 1 gallon gas tank in the 2000i can keep the generator going for about 5 hours—9.6 hours if the economy burn rate is selected (Figure 4). It's been quite dependable—and quiet.



a 7-gallon tank that can drive the generator for between 35 and 65 continuous hours—normal setting or economy setting.

supply and the gas generator worked just fine. Except for the time to disconnect from the SMA inverter and plug the refrigerator-freezer into a power cord from the Honda 2000i generator, I experienced no down time of significance. This design can easily run for the three-days or indefinitely by refilling the marine gas tank periodically while the sun-driven SMA inverter was providing power. Refrigeration was a major concern for me, and this configuration met the challenge nicely.



When I connect a 6 gallon marine gas tank to the 2000i (Figure 5), I have a power system fueled from

There are ways to connect multiple 6-gallon gas tanks, but this single tank design is essentially all I need to provide 24/7 backup and give me a comfortable feeling that my food will be kept cold or frozen all through the power outage.

During my operational tests of this design, the inverter secure power

