

The Long-Term Survival Bucket

Duncan Kunz

July 1994

Legal Stuff

This article is copyrighted, which means it belongs to me. You may make all the copies you want, paper and/or electronic, and hand them out to anyone you want to, as long as you follow these three rules:

- *You can't charge for the copies. You got them for free; you pass them on for free.*
- *You can't change any of the text or drawings.*
- *You have to pass on the entire copy, including this copyright data, and the headers and footers of the document.*

Okay, enough of the lawyer talk. Build your bucket!

New Introduction

It's mid-1999, and I'm reviewing a document that's more than five years old – written long before I ever thought about Y2K. Well, Y2K's approaching, and I don't have the faintest idea how serious it'll be. Hopefully, it won't be all that bad; both pollyannas and gloom-'n'-doomers will breathe a sigh of relief, and we'll go back to doing whatever we were doing.

But maybe not: Maybe we'll be in a position where we'll need to be responsible for ourselves and our families again, like we were when this country was new. There's a scary thought – we won't have a big benevolent Someone Else to look after us, and WE choose whether our family eats or not.

If that time comes, it'll be like a birth: full of blood and pain, resulting in a new life. Maybe the information in this article – and the garden you can grow from it – will be one of the midwives at that birth.

Breathe deeply.

*Duncan Kunz
Mesa, Arizona
June 1999*

Pick your scenario – something really bad has happened. The infrastructure is breaking down. No food deliveries, no money, no jobs. Riots and fires, with the cops and firemen powerless. It's time to get out of town, away to that place you'd picked out -- back when the picking was good.

You have your month's worth of MREs to feed you and yours. Your Mini-14 will keep the Bad Guys at bay, your first aid kit will keep your wounds bandaged, and the 12-gauge and .22 will get you the game you need, until....

Until when?

If things get bad, we simply can't rely on stored food, weapons, and high hopes to keep our family alive. Your stored food will only last so long. Living off the land? No way. Within two weeks of an exodus to the countryside, every deer, bunny, and round-tailed ground squirrel in the woods would be high-tailing it to Upper Manitoba, and the bulk of those self-styled survivalists would be dead of poison mushrooms, dehydration, or gunshot from their fellow refugees or a farmer who simply doesn't want to share.

Face it: we can no longer live off the land. First, there are too many of us (hunter-gatherers require a square mile apiece to feed themselves). Second, we just don't have the skills. If you want to maintain life in the face of a major breakdown of the infrastructure, you have only one realistic choice: grow your own food.

And you can do it, of course. If you live in a remote rural area with a big garden, you're already home free. If you've ever gardened before and have a small plot in your back yard, you're ahead of the game. But what are you going to do if you have to relocate? Pick up your garden and take it with you?

In a way, yes! This article will give you the information on how to prepare everything you need to grow food. You'll start by selecting and acquiring seeds that fit all the requirements of

location, nutrition, and taste. You'll be able to put this together for less than \$150. It'll all fit into a five-gallon plastic bucket, and will be safe and usable for at least five years. Most importantly, you'll be able to toss the bucket, along with some carefully-chosen tools, into the back of your pickup and head out with the reasonable expectation of being able to feed yourself and your family for the rest of your lives.

Sounds interesting? Read on.

There're four tasks to designing the long-term survival bucket, and we'll go through each task in order. In some cases we'll divide each task into several steps. Please read everything before you start, and make sure you know exactly what you're doing before going on! Like almost everything else, careful planning and not getting ahead of yourself will make this a straightforward and easy job.

TASK 1. WHERE DO YOU THINK YOU'LL BE GOING – AND GROWING?

What grows in a mountain valley will probably not grow well in a desert. Coastal plain vegetables might not make it in the bayou. You need to have a good idea of what kind of soil, sunlight, temperature, growing season, and water is available, and choose your seeds accordingly.

Visit your candidate location, if possible, before you have to. Find out from an almanac or the county extension agent the following:

- Rainfall by month
- Average temperature by month
- Amount of sunlight
- Dates of first and last frosts
- Common pests (insects and microorganisms)
- Common crops
- Type of soil.

Soil type will require a bit more research. Your best bet is to take some to the county agent for testing, or, you can take some home and test it yourself with a soil-testing kit. These kits are available at most nurseries and some of the larger hardware stores. Make sure the kit has the capability for measuring nutrient values, such as nitrogen, etc., and can also measure pH, or acidity. (We'll talk more about the soil kit later.)

If you have a chance to talk with some of the locals, you'd be surprised how helpful they can be. Most gardeners love to talk shop with other gardeners, and they'll probably have the best practical information about growing vegetables there.

At the end of this step, you should know all the necessary stuff about your future food-factory. You cannot believe how important this information is, because it's directly applied in....

TASK 2. CHOOSING YOUR CROPS

This step is the biggie. This is where you start doing serious research and spending money, so take your time. Read and re-read the three steps I've outlined here before going any further.

Step 2-1. Choose for Climate. Almost everyone knows that you can't grow citrus in the mountains or lettuce in the desert. If it ever gets below freezing, you can't grow tropical fruit, either. But there's more to it than that. Even with vegetables that can grow in a wide range of

environments, there are varieties designed for early frost, late frost, cool, warm, short season, long season, ... you get the picture.

Start your research in the library, with general purpose garden books and pamphlets from the County extension agent. Follow up with a visit to a nursery, preferably in the same area where you think you'll be planting. Talk to the local nurseryman to find out what he recommends for that area.

If you have to research somewhere else, go to the largest nursery you can find and get a nurseryman who is knowledgeable; tell him exactly the growing constraints and ask for suggestions. Hopefully, you'll find a professional who can give you the information. Now, make a list of every vegetable that you're remotely interested in that will grow in your garden, and take it home.

Bear in mind that, wherever you have your garden, there are some veggies that grow during the warm season and some that grow during the cool season. This means in most cases, you can have two crops. You'll be able to look at the seed-packets and tell which of the two times those vegetables will be started. In general, though, common vegetables break out like this:

WARM-SEASON CROP: tomatoes, string beans, summer squash, cucumbers, corn, okra, eggplant, lima beans, peppers, celery, collards, and pumpkins.

COLD-SEASON CROP: cabbage, lettuce, radishes, peas, chard, asparagus, cauliflower, Brussels sprouts, broccoli, spinach, beets, carrots, onions, turnips, potatoes, artichokes, Chinese cabbage, kale, mustard greens, and parsnips.

Step 2-2. Choose for Nutrition. Almost all vegetables are nutritious, but some are more nutritious than others. If you don't have a book or seven on nutrition, as well as pamphlets from your health provider, go to the library right now and get them. Read, make notes, then start your list. Each of us have slightly different requirements, but all in all what keeps me healthy will probably do the same for you. Here's my seed list, for what it's worth (and I think it's worth quite a bit):

Green Leaf Vegetables

Cabbage is nutritious, it works cooked or raw, and if you choose the right variety, you can grow it in a wide range of locations. Lettuce is good, but requires cool weather. Iceberg lettuce has the taste and nutrition value of cardboard, but other varieties are a better choice. Spinach is a winner. Raw or cooked, tasty, very high in vitamins. In addition to spinach, mustard, turnip, and collard greens are great sources of vitamins. I have seeds for all four of these dark green leafy veggies, as well as cabbage, cauliflower, and broccoli.

Legumes

This is where the protein lives. Legumes have big seeds, and half of my bucket is taken up with them. But what a deal! More value, taste, and nutrition for their bulk than anything else I can think of. I have string beans (two varieties), peas (two varieties), snow peas, pintos, and navy beans. In addition, I also have soy beans for making soy-products and mung beans for sprouting. Peanuts (which is a pea, not a nut) would be a great addition, but the climate's wrong for me.

Gourds, Melons, and Cucumbers

These are the guys that grow and grow and grow. With a few seeds, you'll be able to harvest enough of these vegetables to feed a small army. I have cucumbers, summer squash, pumpkins, acorn squash, and zucchini. Watermelons, honeydew melons, and cantaloupe round out my choices.

Roots, Tubers, and Bulbs

Carrots (two varieties) brown baking potatoes, sweet potatoes, and yams. Sugar beets. Radishes, since they go from seed to stomach in 19 days and can be added to any salad. Two kinds of onions as well as leeks and garlic.

Cereals

No, you don't need ten square miles of South Dakota and a combine to grow wheat. A 20-foot by 20-foot plot, according to my sources, and a sickle will do fine, and wheat is not nearly as difficult to grow as you might think. Threshing it, on the other hand... but that's a different subject, and who could give up bread? Not I! I have Hard Red and Durum.

Miscellaneous

Tomatoes, beefsteak and cherry. Corn, two varieties. Several different peppers, including green, red, and jalapeno. Yow!

Fruits and Berries

Blackberries, raspberries peaches, pears, and plums (one variety each) I'd love citrus and grapes, but the climate's wrong.

Herbs

I don't have a herb garden worked out. I plan on doing some more research and probably getting a commercial herb-garden collection. Since many herbs can be grown indoors, climate is not as critical a factor as it would be with outside crops. I know I want oregano, mint, parsley, garlic, coriander, cumin, as well as some medicinal herbs; but I can't in all honesty give you any advice about that – yet.

Step 2-3. Choose for Taste. I don't care how health and easy-to-grow a vegetable is: if you don't like it, you probably won't eat it, so don't grow it – simple as that. (I'm assuming that you and your family WILL eat MOST vegetables.) Turnips, rutabagas, parsnips, and kohlrabi are, I'm sure, very nice to have, but I cannot abide them; you won't see them in my garden. I love asparagus dearly, but the difficulty in growing it, as well as mushrooms, has eliminated them from my bucket.

Make your choice realistically. With a little luck, you'll be eating those choices for a long time.

TASK 3. GET THE BUCKET, GET THE STUFF, AND LOAD IT

Here's another labor-intensive task. I've broken it out in several steps.

Step 3-1. Get the bucket. You need to have a re-sealable bucket that is airtight and will stay airtight for years. You can get these buckets, complete with lid, rubber ring gasket, and a tool to open them, from a preparedness store. Don't bother with anything less. Make sure the bucket's at least 5- or 6-gallon capacity.

Step 3-2. Buy the seeds and re-store them. You have your list of seeds by now, chosen for climate, nutrition, and taste. Buy them from a reputable nursery or mail order catalog. Make

sure the seeds are fresh, based on the harvest date or code on the packet. Open each packet carefully (do not take the seeds out) and put the packet in a breathable paper envelope or cloth bag. Label the envelope. I'll explain why in a minute. You should have enough seeds to fill the bucket about 2/3 of the way.

This brings up a very important job: determining how many seeds you need. Here's my approach; see if it makes sense for you.

1. I assume I will need enough seeds to grow vegetables for myself, family, and two people I may pick up along the way.
2. I'm going to use the seeds from my first crop to plant my second year's crop, hopefully, but I want enough seeds for three years.
3. I assume there will be one crop failure per year, and I'll have to re-plant the garden.
4. I assume that half the seeds will die during the next three or four years in the bucket, so I adjust accordingly.

Hopefully, I bought five or ten times as many seeds as I need, but they're cheap, and I may not have the option to buy more seeds when I really need them. So you need to determine the yield (it's usually on the package), figure out how many vegetables you will need to provide, and multiply that times the number of people and a BIG safety factor.

Hybrid Versus Non-Hybrid Seeds

More and more people are choosing non-hybrid seeds for their garden, especially if they're concerned about not being able to get more seeds next year. Hybrid seeds have been bred over the past years to provide good taste, extended growing season, and a good yield. The problem with hybrid seeds is that the second generation of plants (i.e., those you grow from the seeds produced by your first crop) do not always breed true. This means the second generation of plants might not be as good as the first. Non-hybrid seeds, on the other hand, are not "scientifically bred" to provide the best crop, but they do reproduce true.

I have talked with several people who have tried to grow second-generation vegetables from the seeds produced by hybridized vegetables. They report that most of the crops breed true, and since the hybrid veggies are usually so much more hardy, tasty, and abundant than the old-fashioned kind, the loss of vegetables caused by the seeds that don't reproduce properly is more than made up for by the built-in advantages of hybrid seeds.

I do not know of any scientific studies investigating this; if you are planning on never being able to buy seeds commercially, then the non-hybrid seeds are probably better for your peace of mind.

Step 3-3. Get the other stuff. Remember your soil testing kit? Take the whole thing, tighten the caps of the reagents and other chemicals, collect the instructions, and put them in a zip-lock baggie, then in a sealable plastic (Tupperware) container. It may sound like a lot, but there's no benefit in having your reagent spill all over your mung beans, right?

In addition to the soil testing kit, get three or four good books on gardening. I recommend organic (sometimes called bio-dynamic or French intensive) methods of gardening, so your books should address that approach. Several excellent books are "Growing More Vegetables" by John Jeavons and almost anything published by Rodale, of Emmaus, Pennsylvania. Put these books in a big manila envelope and seal it.

This brings up another point. In addition to the books you are buying for the bucket, there had better be some books you're going to read before you actually start gardening. When you do, you will see that the deep-bed organic method is the only way that makes sense: you don't need artificial fertilizers, you don't spend much time weeding, and you get an incredible amount of crops from a small garden and relatively little water.

Step 3-4. Load and seal the bucket. You want your bucket to keep for a long time. To do this, you need to store it in a cool place and ensure that no seed-eating critters are locked up with the seeds. You do this by either charging your bucket with dry ice or adding oxygen-scavenging packets.

Dry ice is frozen carbon dioxide, (CO₂), a colorless and tasteless gas that is a bit heavier than air. (Don't confuse this with carbon monoxide, which is a deadly combustion by-product). Get a couple of pounds of it (be careful when handling it – it's VERY cold and could injure you) and place it in the bottom of the bucket. Then, put in your seeds and other stuff and loosely put the lid on. The dry ice will sublime, that is, it will turn into a gas without going through a liquid phase. The resulting CO₂ gas will push out the lighter air. Keep the lid on loosely and don't shake the bucket. After an hour or so, the dry ice will be gone and the bucket filled with CO₂ gas. Seal the bucket, and you're in business.

An oxygen scavenger is a chemical in a bag that absorbs oxygen in the air like a desiccant bag absorbs water. They're usually available at preparedness stores, too. Find out from the manufacturer how much you'll need to scavenge out the oxygen from a 5-gallon bucket, slip the bags in there with your seeds and other stuff, and tighten the lid.

Both of these approaches remove oxygen from the bucket, which kills all the bugs. By the way, that's why you opened the packets and put them in the breathable envelopes: so the oxygen could be forced out. Seal the bucket, write "long-term garden" or some such on it (along with the date), and you're on your way.

I used to recommend charging the bucket with dry nitrogen (N₂) as a way to remove oxygen. After several discussions with my LDS canning colleagues, I now do not recommend that you do this. Preliminary research says that N₂ can damage the seeds. Since CO₂ and oxygen-scavenging packets are as effective and can more easily be done at home, avoid N₂.

Remember when I mentioned that seeds will die anyway, even sealed in a bucket? The mortality can be limited by the temperature. If you keep your bucket at an area between 60 and 70 degrees F, likely 85-90% of the seeds will still be viable in four or five years. Keep your bucket where it's cool.

TASK 4. GET TOOLS

You're almost done. You need only three things to finish up. First, the tools:

- Fork. No, not an eating implement, but a pitchfork for working the soil.
- Flat spade. This is used for dressing your deep bed. If you don't know the difference between a shovel and a flat spade, check with your nurseryman. Make sure it's a short-handled spade with a D-ring for your right hand.
- Pickaxe. You will find out that preparing a deep bed, especially from ground that has not been worked before, will be hard. A pick will start the job.

- Rake. Not the 'yard-broom' type with the bamboo tines, but the kind with the steel tines about 2-3 inches apart, extending down about 4 inches from the bow. Again, check with your nurseryman.
- Hand trowel. Great for the small holes.
- Watering can.
- Any other tool that you've used, think are worthwhile, and can find room for.

Take these tools and clean them carefully. Wipe the metal parts with a thin coat of oil to stop the rust, put 'em all in a big canvas bag, and store them by the bucket.

I mentioned three additional things, and tools are only one. The other two things you need are:

- Education. Read your books. If you have a chance, plant a mini garden (not from your bucket supplies!) in your back yard or patio. Read some more. The final thing you need is:
- Good Luck. You've done your planning right, you have the knowledge, tools, and seeds. When the time comes, you'll be able to make your move. What're you waiting for?

Build your bucket. Feed your family.