

Food Storage

Disclaimer: This is a vast subject and the following is amateur knowledge resulting from basic research over the years – this is just a starting point and any food safety information definitely warrants further individual research.

What (to store) and How Much?

Pre-packaged (easiest and most expensive option):

Buy pre-packaged supplies of emergency food from a company like www.MyPatriotSupply.com. A one year supply for one person is \$2,987.00. They have many different packages . . . or

DIY (or combo of pre-packaged and DIY):

Most guidelines on the internet for DIY emergency food storage seem to use LDS recommendations as their foundation:

For example – according to www.ModernSurvivalBlog.com a one year supply could be as follows:

	<u>Per person</u>
Grains	400 lbs.
Beans/Legumes	60 lbs.
Oils	20 lbs.
Sugar	60 lbs.
Salt	8 lbs.
Milk-Dairy	16 lbs.

The above would be considered bare essentials (for one year) but even better would be to add the following:

Meat	20 lbs.
Veggies/Fruits	60 lbs.
Condiments	varies
Spices	varies
Treats (to prevent appetite fatigue - i.e. chocolate/hard candy/cake & brownie mixes, etc)	

Another example from www.EZPrepping.com (this site has a food storage calculator – there are many on the internet) gives the following recommendations with suggestions for each category:

	<u>Per person</u>
Grains	390 lbs. (i.e. wheat 200 lbs., rice 70 lbs., flour 30 lbs., oats 30 lbs., pasta 30 lbs., cornmeal 30 lbs.)
Canned/Dried Meats	20 lbs.
Beans/Legumes	70 lbs. (pinto/black/kidney/lima/peas/lentils)
Fats/Oils	25 lbs. (i.e. vegetable oil, coconut oil, salad dressing, mayo, peanut butter)
Milk/Dairy	87 lbs. (dried/canned)
Sugar	60 lbs. (white/brown/honey/molasses/jams)
Salt	5 lbs.
Baking Powder	1 lb.
Baking Soda	1 lb.
Yeast	1 lb.
Vinegar	1 gallon

Various Miscellaneous Tips:

Another very customized and targeted method is to pre-determine the meals you would like to eat during an extended emergency situation and how often you would like to eat them --- then use that information to multiply those ingredients needed for storage. For example – if you formulated 15 different dinner type meals, you would need to multiply those ingredients for each meal by approximately 24 to have the correct amount for a year's worth of storage.

Some sites report that a 5 gallon bucket of wheat berries (about 33 lbs. of wheat) will produce about 25 loaves of bread – another number that can be used to help determine how much to store.

Sourdough starter is a great substitute for yeast as it wouldn't be necessary to store large amounts due to its ability to continually regenerate.

Enemies of Long Term Food Storage

Bugs:

Weevils and their eggs are often already in bags of grains/flours/beans when you get them. Without taking certain measures you could return to your bag over time and find that its contents have been eaten partially from the inside out. However, bugs need oxygen to survive and there are ways to defeat the weevils. Worst case scenario – weevils can be eaten without causing harm (in a true emergency we might not care) – or a lot of effort can be put into cleaning them out (usually dead by now) before eating what remains of the food.

Oxidation:

Over time any food will become less fresh, even stale due to exposure to oxygen. Removing oxygen from storage containers greatly extends the life of stored food.

Botulism:

Botulism spores are everywhere and will become active and produce toxins under certain conditions:

- 1) Low acid food (i.e. grains/potatoes/meats/vegetables/dairy)
- 2) Lack of oxygen/airless
- 3) Moisture
- 4) Room temperature for an extended time

Example of a documented case of botulism poisoning: A potato baked in foil was left on the counter overnight and the next morning a young man returning home from a night shift of work saw it on the counter and ate it – he ended up with a severe case of botulism poisoning. The potato is a low acid food and in this case was moist, left at room temperature for several hours in an airless situation. Botulism is unique in that the toxin can develop yet the food can look/smell fine as it hasn't had time to develop the characteristics typically associated with spoilage.

Botulism toxin can be deactivated by bringing the affected food up to a certain temperature for a certain amount of time – this won't kill inactive spores but will deactivate the toxins.

Botulism is the main reason some foods (low acid) should only be canned by using pressure canning processing adhering to very strict instructions regarding processing time/temps/pressures etc.

Dehydrating Foods

Benefits:

- Long term preservation method
- Space efficient – more volume of food stored compared to the same space of canned goods
- Frees up fridge/freezer space
- Can be used to extend preservation of canned goods coming to the end of their “best by” dates
- Retains a much higher level of nutrients (compared to canning)
- Retains more of a natural texture (compared to canning)
- Easy to snack on without rehydrating or cooking
- Easy process

This is a vast subject as almost any food can be dehydrated. There are many foods that dehydrate so easily – especially most fruits and veggies.

Veggies - dehydrate better if they have been blanched first. Frozen veggies from the grocery store have already been blanched and are therefore one of the easiest things to dehydrate quickly – virtually no preparation.

Meats – the only raw meat that should ever be dehydrated is properly prepared beef jerky. No other raw meat should ever be dehydrated.

Thoroughly cooked ground beef/turkey/chicken can be dehydrated safely (NEVER RAW). For long term storage purposes, it is best to remove the fat as much as possible by boiling, straining, and then rinsing with boiling water before dehydrating. The remaining “broth” (usually contains a lot of gelatin) can be cooked down, refrigerated, fat (on top) removed, cooked down more (as much as possible until thickened) then dehydrated as well. Blend once dry to create a broth powder that contains healthy gelatin and later can be added to many recipes to add great nutrition.

Eggs - blended raw eggs can be dehydrated – as long as they are dried very thoroughly. In terms of potential salmonella, dehydrated raw eggs should be treated in the same manner as fresh raw eggs. They can then be rehydrated and used in the same manner you would use fresh eggs. There are apparently ways to pasteurize eggs while retaining a raw state using a sous vide water bath. Using this pasteurization method before dehydrating would be ideal but not necessary as long as the salmonella risk is considered in handling the non-pasteurized eggs.

If anything that has been dehydrated still has a decent amount of moisture and/or fat left in it (especially jerky or cooked meats) then it should be stored in the frig or freezer which from a long term emergency food somewhat defeats the purpose, but keeps things safe.

Two sites for info on dehydrating (there are many!):

YouTube – RoseRed Homestead (my favorite long term food storage channel)

YouTube – The Purposeful Pantry

You may find conflicting info on what people think is safe – i.e. RoseRed is in favor of dehydrating raw eggs, The Purposeful Pantry is not – this is where everyone needs to make individual decisions.

Dry Storage Methods

Vacuum sealing – vacuums most of the air out, creating a “suction” look to the bag.

Oxygen absorbers – removes oxygen from the container but not all parts of the “air” has been removed. Nitrogen will still exist which is okay for food storage. A Mylar bag that only has an oxygen absorber will have the oxygen removed but will not have the tight shrink wrapped look of a vacuum sealed bag. It will have some shrinkage and the food will be protected from oxygen exposure. Once a package has been sealed with an oxygen absorber and then is reopened, that oxygen absorber is no longer effective. Never use oxygen absorbers with sugar or salt as these foods may become hard bricks – these foods are somewhat self-preserving anyhow – just protect from outside critters, moisture, etc.

Buckets -- Food grade – clean and disinfect (i.e. light bleach solution and rinse) – allow to dry thoroughly. For dry food only (i.e. grains/beans). Use oxygen absorbers to kill bugs/eggs and to prevent oxidation. If using a non-food grade bucket – use a Mylar bag (they come as large as 5 gal) or a food grade liner such as turkey brining bags before adding food and oxygen absorbers. Once sealed, do not open until ready to use or repackage the food.

Tubs -- Basic Rubbermaid type totes can be used to store food that has been packaged in Mylar bags or vacuum seal bags.

Canning Jars -- Dry food can be vacuum sealed in canning jars using oxygen absorbers, a vacuum sealing machine or even a brake bleeder.

Regular Jars (i.e. from store bought products that have the rubber seal in the lid, such as applesauce) -- Dry food can be stored with an oxygen absorber to create a vacuum seal. These jars should not be reused for water type canning of any kind.

Mylar bags -- Dry food can be stored in Mylar bags using a vacuum sealing machine (if they are small enough to fit). For a Mylar bag that too large for the machine, use oxygen absorbers along with an iron or flat iron for sealing the bag.

Reference Info

Vendors – bulk foods and storage products

- Azure Standard – many bulk food products (grains/beans) plus buckets/sealing lids/gamma lids. Due to their method of using drop points for pick up – shipping is free and currently their prices are decent.
- Winco – section with bulk foods and storage containers for long term food storage.
- Costco – as of 2 weeks ago – still a lot of flour/rice/sugar/coconut oil with good prices. Good for bulk frozen veggies (dehydrating) and ground meat (cooking then dehydrating)
- Amazon – Mylar bags, oxygen absorbers – Goya beans (conservative owned company) – Augason Farms (No. 10 cans) – monitor for deals with Augason (and sometimes Goya) – they seem to randomly place different products on very good deals!