The Full Pantry
A shirtpocket guide to food storage

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INTRODUCTION

At the present time we live in a world of plenty where supermarkets are filled with copious supplies of food. In the event of a true energy crisis, an economic collapse, a drastic weather change or following a general nuclear war, such supplies will not exist. Each family group will have to provide itself with such food as it requires either by producing it themselves or by trading some skills for the food produced by others.

There are numerous books written on how you can produce your own food, as indeed each family has produced their own for most of history. The problem comes during the period of transition from a time when there is plenty of food, to the time when each is producing his own. This period will be marked by civil, social, economic and other types of unrest and instability, where it may well be imagined that each family's survival will depend on how well it has prepared for the transition.

As a minimum, there will be a period of time between the end of the supermarket days until the garden can produce. As a maximum, gangs of looters may disrupt 'normal' life for a year or more.
This booklet is concerned with the storage of food for use during such a period of transition.

SECURITY IS KNOWING YOU CAN FEED YOUR FAMILY!

The security of stored food means that you can feed your family regardless of what occurs. If you can feed your family for a year or two without having to run to the grocery store, you are essentially free of

worry. If you lose your job, if your business goes bankrupt, if you cannot get gasoline to drive you car, you will still be able to feed the children.

WHAT TO STORE AND HOW TO STORE IT.

If you could see a list of all the groceries you purchased last year, you might assume that merely purchasing all of these items for storage would be a good thing to do. But it would not work. The bulk of the food you consumed was fresh -- vegetables, meats, bread and dairy products. These will not keep beyond a very short period of time. And if your electricity goes off so that you cannot freeze things, their life is shorter still. Consequently, your storage program must include items which are especially packaged for long term storage.

Any program of food storage, which is the subject of this brochure, must assume the worst possible situation and be prepared to handle it. If the situation does not turn out to be quite as critical, you may stop the consumption of stored foods at any time and/or supplement it with foods added to it as you are able.

The worst possible situation might be visualized as the same one which faced the American settlers. That is, starting at some time, you must feed your family from the foods you have in storage until you can begin producing your own. It presumes that never again will you be able to go to the grocery store. In practice it doesn't seem likely that such a thing will happen, hut if you plan for the worst, anything better is easier.

To design any storage program, it is necessary to make some assumptions. The validity of these assumptions must he questioned from time to time with other preparations that you might make. The following assumptions were made with regard to the storage of foods:

a. Security--You must have a safe place to eat. Save from hands ofthugs who would steal your food, safe from freezing or earthquakes, and all
of the rest. If the reasons for going into your stored supply of food are personal, i.e. you lose your job and cannot buy more food, then your present home may he quite safe. If, on the other hand, you are eating stored foods because of a general collapse, such as a nuclear war, economic

disaster, then you may have to move to yours own enclave where you can insure your own security.

b. Fuel--Most of the foods involved here require cooking. To use them effectively you must have some source of heat.

c. Water--You must have a supply of good water, You could store quite a hit, it wouldn't last forever.

d. Equipment--Nearly all of the foods discussed here require some sort of equipment for their preparation. While you probably have most of this in your kitchen, some, such as a wheat grinder may be missing and will have to be supplied.

DURING THE FOOD EMERGENCY

Food storage is a preparation for an emergency. It is always hoped that such preparations are done unnecessarily. But emergencies of a nature which would require you to eat your stored food supply happen nearly everyday somewhere around the world.

Such emergencies can be characterized by how long they last. Short term emergencies, such as might be caused by the weather don't last long because the government and relief agencies immediately come into the area with food. Other kinds of emergencies, such as might be caused by a nuclear war could last forever. Your food program should be able to handle any of these to give you the security you want. It should be looked at from a standpoint of having several stages to be consumed in order as follows:

1. First eat the food in your refrigerator. With a power outage, this food will last only a day or two.

2. Then eat the food in your freezer. Without power, the freezer will keep food frozen for about 72 hours (while you clean out the refrigerator), and then you have a few days before this food spoils.

3. Conventional wet packed canned goods, and foods with a medium term life come next.

4. Your long term supply comes next. This is food stuffs which will keep indefinitely until you need
5. Eventually you have to re-establish a source of fresh foods. You can't store enough for the rest of your natural life and that of your children. The Enclave recommended supply includes specially packaged cans of vegetable seed to plant a garden which will sustain you indefinitely. One can is enough, the second is cheap insurance in the event of crop failure.

How much food to store is always a problem. The answer is simple. If there is no emergency, you need not store anymore than you require for dinner today. If there is a total collapse of the economy, you cannot possibly have enough stored.

The Enclave recommendation is a basic core of food designed for long-term storage which will feed you and your family for a period of at least one year. In addition, this should be supplemented by The Basic Four and by a rotating program of conventional foods.

In looking over the list of foods recommended by Enclave, note the number of servings which are given. These servings are all measured to be 1/2 cup or 4 fluid ounces--about what you get in a TV dinner. It is quite possible to eat this years supply' in six months or less. The supply of foods is enough to sustain you for a year, and to sustain you quite well while you are doing a fairly minimal amount of work. You should consider this to be a years emergency rations.' Any supplementing you can do during this year will be a help, as will any adding to this list that you care to make. It will take you quite a lot of selfdiscipline to hold yourself to the diet permitted by the 'years supply'. Even so, the Enclave recommended supply is significantly greater than that recommended by commercial storage companies.

In the first year of a total collapse, you probably can't plan on supplementing your stored food with fresh. The supplements will come from foods listed in items 1, 2 and 3 outlined above. During the first year of a drastic crisis, there will be too many desperate people hunting for any scrap of food, killing any animal they can find for meat, and quite likely starving to death.

THE BASIC FOUR

A number of books have been written to expound a philosophy of food storage which revolves around 'The Basic Four'. These four foods are wheat, dry milk, honey and salt. The error here is these four foods alone are considered to be sufficient for survival. For a short while it is enough. But not for long. The number of dietary deficiencies inherent in this program are too numerous to mention.

To be sure, these foods are good basic foods and should be included in your storage program. But they alone are not sufficient (and you have to wonder how many people store wheat without a grinding mill). If you can supplement these basics with some fresh vegetables, perhaps some occasional fresh meat (bird, fish, deer or whatever) you could survive.

The amounts of such foods recommended by Enclave for each person are:

Wheat	250 pounds
Dry Whole Milk	100 pounds
Honey	75 pounds
Salt	5 pounds

The amounts of these items will give you a quick and inexpensive hedge against starvation. If you wish a minimum amount of security, the basic four is a minimum. The life of the milk, honey and salt is indefinite. Wheat is a very inexpensive commodity. It can he packed for indefinite long term storage, but such packaging is more expensive stored for long life . The remainder can be purchased in hulk, stored in plastic cans or sacks, and inspected annually. If kept dry and cool, it will last a very long time. If your inspection shows deterioration, replace it. Such occasional

replacing is cheaper than the long life packing. Besides, you may find that you like to occasionally bake a loaf of bread with fresh ground wheat. The only advantage of long-life packaging is that its will last virtually forever without the necessity such annual inspections.

ROTATING STORAGE

A sizable savings in your food budget, as well as an increase in your eating security can he obtained simply by purchasing your normal food requirements in larger quantities. If your family normally eats mushroom soup, for example, buy it in case lots rather than single cans. You will save approximately 15% on the price, and if you just increase your supply at home, you have begun your supply without wrecking your budget. Simply store the food in unopened cases until you need it. Open a case and replace it with another. Put the newest case in back of the open one to be used last. Gradually increase your pantry and consider this to be a supplement to the basic four.

By such a rotating system, the food on your shelf shouldn't be more than a year or 80 old, and still be safe and satisfactory. Do not attempt to keep such normally packaged foods for long term storage. Long term storage foods are approximately 25% more expensive than the foods found in grocery stores. They are designed for indefinite storage 80 they can be kept for 20 years or more and then used. By this time the regularly packaged canned goods have lost all of their nutrition and may even contain harmful agents.

VITAMINS

While the intake of extra vitamins is quite common in this country, the U.S. Food and Drug Administration, the AMA, the food industry and various consumer groups say that with a normal diet, they are not necessary. There appears to he little investigation of what the effect of eating a survival diet might have on nutrition. After some consultation, Enclave recommends a supply of multi-vitamins he stored and taken under survival conditions. These should be capable of supplying 100% of the FDA recommended daily allowances.

NUTRITION

Since mankind has been eating for millions of years, it would seem that all of the problems concerning nutrition would have been solved many years ago. But this is not the case. Numerous books and magazine articles can be found which purport to solve all of your health problems with dietary supplements, vitamins, organic or health foods and other ideas. There is no question that millions of people are convinced that the average American diet is harmful to their health. The supplementary food products business sells millions of dollars of goods a year. And, needless to say, they can back their claims of the desirability of their products with all kinds of 'research'.

With all this confusion, there does not seem to be any research at all carried out on the nutritional value of foods after long term storage. What, if indeed anything, happens to foods that are dried, packaged and stored for years before consumption? This does not seem to be a concern of the government and they seem convinced there will always be a ready supply of fresh foods. Even the military is concerned with storable foods only for use in short emergencies, until regular foods are re-established in the main diet.

The only people who claim to have researched this area at all are the companies who sell storable foods. Each of these companies in this area put out a recommended 'years supply'. Enclave had originally hoped these recommendations would be a suitable guide for members to use. Instead, a careful analysis of the recommendations made by all of the companies we can find, show there is little similarity in their choice of food stuffs. It is clear that each company has assembled their 'years supply' which is composed of foods they produce. Enclave cannot go so far as to claim that you would not survive on the recommended survival food lists put out by commercial companies in the field . Yet, we have felt it is necessary to assemble a recommended "years supply" which is made up of foods selected from various companies, and indeed from companies who use drastically different techniques.

In considering your own food storage program, or in comparing the

recommended foods here, or other sources, Enclave suggests you use the following information in making your decisions. This is believed to be the most accurate and pertinent information available in one single source. The recommendations are conservative in nature, as there is no room for error. If you find yourself in a situation where your survival depends on your stored foods, it is better to have over-prepared than to not have enough. If you hold a responsible opinion which you may think would cause us to alter our recommendations to members, please communicate them to us.

DRYING

The presence of moisture in foods is the main reason for spoilage, so the essential step in preparing foods for long term storage is drying. The drying of foods is usually done in one of two major ways, as follows:

De-hydrating

This process involves the drying of the food in the presence of air, at room or slightly elevated temperature. Two steps are often necessary - evaporating the moisture out of the food to a moisture content of approximately 10% to 20% (these may be marketed as evaporated or low-moisture foods). The second step is de-hydrating the food to approximately 2% to 4% moisture content which is done with heat or vacuum.

Freeze-drying

In this process the food is first frozen and then dried by vacuum to the required moisture content (again about 2%. The whole process is done at freezing temperatures. The freeze-drying process is just all-out the only way to dry meats which will retain their normal appearance and taste. Beef Jerky with its characteristic dry/tough content is an example of what happens when you de-hydrate meat, while a freeze-dried hamburger patty is indistinguishable from the regular frozen item.

De-hydrating vs Freeze-drying

The freeze-dry process produces better tasting foods than the de-hydrating method in nearly all cases. In meats, this difference is so

dramatic that (except for beef jerky) there are virtually no dehydrated meats. In fruits and vegetables, the final product is not so distinguishable. As an example; two apple pies made together by the same person, using the same recipe with one made of freeze-dried apples and the other made with de-hydrated apples, the pie made with freeze-dried apples will taste better. But, if the de-hydrated apple pie were made by a 'good' cook and the freeze-dried pie by a "not-so-good" cook--you would probably prefer the de-hydrated apple pie.

If all other factors were equal, there would he no conclusion hut to recommend the freeze-dried apples. But this is not the case. A can of freeze-dried apples and a can of de-hydrated apples cost about the same. However, when fruits and vegetables are freeze-dried, they do not change their shape. When they are dehydrated, they shrink. So, a #10 can (about a gallon) of freeze-dried apples contain five ounces of apples, while the same sized can of de-hydrated apples contain 240 ounces. This is almost four times as much. Both of these are considering the amount of apples you get after water has been added to restore them to normal. The de-hydrated product is therefore cheaper and takes less storage space.

Enclave recommends the use of de-hydrated fruits and vegetables, except in the case of those items (such as pineapples and strawberries) which cannot be dehydrated and must be freeze-dried.

PACKAGING

Normal grocery store packaging of dried foods is in cardboard boxes. These foods have a moisture content of around 20%. In order to retard their spoilage, preservatives are added. These are usually on the Food and Drug Administrations GRAS (Generally Recognized As Safe) list. The evidence is these additives are safe, except that occasionally a substance is taken off of this list. Items removed with a good bit of national attention in recent years include Red Dye #l, Red Dye #2 (which came into being when #l was removed from the list), saccharin, etc. Some varieties of molds can live in these foods, and the Enclave recommendation is that they not be stored for longer than one year or two.

Long term storage foods are packaged in large tin cans. Note that

other foods are also packaged in tin cans as well, but this shouldn't be confusing as a careful reading of the label will tell you which are long term and which are short term packaged.
The most critical piece of information to be found on the label is the moisture content. Not many companies specify on their labels that the food is guaranteed to have a low or so moisture content. If the label does not specify a low moisture content by number, it is generally too high. Some few companies will specify a low moisture content in other writing, but why take a chance.

The second most critical point for long term packaging, is the oxygen content of the air in the can. Normal air is approximately 80% nitrogen and 18% oxygen. For long term storage, the oxygen should be replaced with nitrogen. There are two processes commonly used to replace the oxygen. The most common way is to lower a tube into the can during the canning process and force nitrogen into the can, this displaces the oxygen and the resulting can is said on the label to be "Nitrogen Packed". Actual tests of this process usually show the oxygen content of the can to be around 16%. This is not a sufficient reduction to be worthwhile. Avoid these foods.

The other method of removing the oxygen, is to pull a strong vacuum on the can, then put nitrogen into it, and then without allowing contact with the air, sealing the can. In these cans, the oxygen is usually less than 1% and usually guaranteed either in writing or on the can itself to contain less than 2% oxygen. While this is a more expensive process, the resulting can of food is only a few cents more expensive and well worth the price.

If companies do not tell you the moisture and oxygen content of their cans, they are not proud of them--don't buy these. They may be all right for short term storage, but don't trust them for fifteen years.

TVP

Textured Vegetable Protein is a highly processed food made from soy beans to look and taste like other foods. It most often is found in the form of bacon and is sold under various trade names. But, it also comes in

the form of chicken, pork chops, ham and beef. Some of it isn't even all that offensive in taste.

Many commercial food storage programs use TVP as the major source of protein for their diet. It has numerous advantages. It is much, much cheaper than meat, it is easy to package for long term storage and it does have a nice appearing nutritional balance.

Enclave does not recommend the storage of any TVP in your survival food program. The main reason for this is the temptation to assume you are eating meat and therefore receiving all the nutrition you require. In fact, the nutritional value of TVP does not appear to have as much protein as the label might say. In other words, your body does not seem to be able to get the advantages of the protein which is actually contained in the food. The Department of Agriculture allows school lunches to use TVP as a meat extender. That is, the meat dish prepared at school can have up to 30% TVP, but no more. Secondly, TVP is a highly processed food and is a long way from the soy bean which produced it. As such, it contains more items from the GRAS list than any other food normally used for long term storage. The GRAS list is constantly changing, and little has been done to consider what happens to these substances after they have been stored for fifteen or so years. On the whole, perhaps TVP can fill a small place in your program, but why take a chance?

If TVP is bad, why? It is made from soy beans, and the U.S. Office of Health Education has said, "The soy bean is, in so many respects, the most valuable of all plant foods." The difference is that a fresh soy bean is not at all the same item as a soy bean which has been heated to a high temperature and squeezed out of a hydraulic press. Include soy beans in your storage program, just do your own processing instead of having to be tricked by having it made into a pork chop impostor.

MEAT

It is often said Americans eat too much meat, that we should emulate other diets with a much less meat content, and perhaps we should all turn vegetarian. Perhaps we should. But most Americans are accustomed to a high meat diet. It appears from early anthropological studies that man began

eating meat because it freed him from having to eat a lot of plant food. The herbivorous animals eat grass and turn it into meat. Man eats the meat and receives a concentrated amount of protein.

The recommended Enclave years supply' contains a meat portion for each day. However, this is not the normally heavy meat diet which is eaten by Americans. Perhaps it can be viewed as a forced attempt to eat less meat--but not turn vegetarian.

In making your own evaluation of meat products in commercial food storage programs, there are several points you might note. A can of meat is expensive, perhaps five times as much as a can of Meat Entree, such as Beef Stroganoff and Noodles. In fact, the can of Beef Stroganoff and Noodles is not much more expensive than a can of noodles. We will leave your imagination to the amount of beef actually included in the Meat Entree. The recommended Enclave 'years supply' contains no Meat Entrees. It does however, include beef, noodles, onions and sour cream. If you want Beef Stroganoff and Noodles, you can make it yourself. A final note on entree type food preparations. The label on such cans may contain a phrase like "Deliciously Flavored and Ready to Serve". This means deliciously flavored to their standards, which means a lot of salt. While salt is a necessity for heath, the amounts involve in such foods are not necessarily the amounts you need or want. The Enclave recommended food supply contains salt which you may add as you wish.

COOKING OIL

Cooking fats and oils occupy a special place in the food storage program. They are highly desirable adjuncts to cooking because of their very high calory content per pound. They ar used in spreads, shortenings, on salads and as a frying medium.

The problem with oils, and the reason they are not included in the Enclave recommended supply is they do not store well. It is desirable to include them, and the best way to handle the problem is to purchase them in liquid form in the largest containers you c an find (usually a gallon) at your local supermarket.

Even while still sealed, oils can turn rancid. Make this the first and

most important part of you rotating storage program.

YEAST

Baking yeast likewise has a rather limited life in storage and is not included in the recommended years supply'. Like oils, yeast should he purchased in some quantity and rotated. Remember that in using these stored foods it will he necessary for you to do a lot more baking.

GROWING AND PRESERVING YOUR OWN FOODS

A food storage program can go on for a relatively short time, for a year, or two or possibly more before shortages in the supply occur. Sooner or later, you will have to return to the consumption of fresh foods. If the situation that is forcing you to eat your stored survival foods is of a nature which will allow "normalcy" to return, you merely need to have the money, trade goods or skill to obtain your needed food from other people. If this kind of a situation does not return, then you will have to grow your own.

There does not seem to he anything which can possibly prevent the growing of food. Even after a nuclear/biological war, the ground, except in very small areas near the point of blast, will be unharmed . A permanent shift in the weather pattern may make changes in the growing locations around the world. The deserts of the American southwest or the Sahara many turn lush. The dense jungles of South America may turn desert, hut nothing seems likely to remove the entire world from producing foods. Mankind is a strong animal who has learned his survival quite well. He will not he destroyed easily. It is your own planning now that will make your own personal survival easier through the transitional period of strife.

CO2 Storage

I have been reading here and have had discussions with locals that store foods such as grains, flour, rice, dried corn, etc. by placing the foods in a bucket, jar, etc. and placing some "Dry Ice" in the container. After waiting for the dry ice to dissapate (sublime) the lid is then firmly

attached to seal out unwanted air from entering. The theory is that the CO2 displaces the air in the container leaving only the inert gas (CO2) behind. I would like to say that CO2 is inert under some circumstances, but in a closed container with food it is not. CO2 exposed to moisture, any moisture will react to produce acidic compounds such as carbonic acid. Although this is a weak acid it will have a detrimental effect on long term storage of food. Any food will have moisture of sufficient quantity to react with the CO2 with the possible exception of foods that are freeze dried.

The ideal container filler is Nitrogen. It is inert, cheap, and readily available. Although introducing it into a container with stored foods is a bit more difficult, the long term storage benefits are greater than CO2.

I use a 12" PVC pipe, 18" high. It has a Plexiglas sheet that measures 16"X16"X1/2" glued with silicone seal to the bottom. The top is a round 12-1/2" X 1/2" Plexiglas plate with a gasket made of a bead of silicone. Attached through hoiles drilled in the side of the PVC pipe, are 3 connections. One is to a Vacuum gauge. One to a tee connection one side of which is connected to a vacuum pump the other to a vent valve opened to the atmosphere. The third connection is to a nitrogen tank.

I place a gallon jar with the top slightly loose in the PVC pipe. I place the round lid on hte pipe. I run the vacuum pump down to 28.5" vacuum, at that time I open the Nitrogen source into the pipe. All air had been removed and the nitrogen is replacing the space in the jar left by the evacuated air. I shut the vacuum pump doen and wait until the pressure reads zero psi. I simply lift the pipe's lid, tighten the cap on the jar with a slight twist and Voila! It is nitrogen sealed. I admit this is a bit more difficult than the C02 dry ice method, but the results are better long term storage....

JM>> This is a specialty area devoted to recipes, food storage, and similar
JM>> items as they relate to survival. Recipes dealing with products with
JM>> long storage life are appreciated.

KB> One thing I have had some trouble with, John, is keeping foods that are
KB> stored in the edible state.

KB> Frozen food doesn't seem to last past just a couple of months...(freezer
KB> burn, you know.) Do you have any information on the life of canned,
KB> frozen or dried foods?

Preventing freezer burn is fairly easy. The cause of freezer burn is dehydration. IQF (individually quick frozen) products can most easily be protected by "glazing". To glaze a product, it must already be frozen. It is then quickly dunked into cold water that has some sugar added. This forms a thicker ice coating, preventing surface oxydation and the resultant dehydration. Freezer burning is not harmful and can usually be reversed by thawing the product in cold water, though.

On storage times:

Title: Food Storage

CUPBOARD STORAGE

Baking powder, soda	18 months	Potato mixes	18 months
BBQ sauce, ketchup	1 month	Pudding mixes	1 year
Bouillon cubes	1 year	Rice - brown, mild	1 year
Canned foods	1 year	- white	2 years
Chocolate	1 year	Salad dressings	6 months
Flour	1 year	Sauce,gravy soup mixes	6 months
Frostings	8 months	Shortening - solid	8 months
Gelatin	18 months	Sugar - brown, confect	4 months
Herbs, spices	1 year	- granulated	2 years
Jelly	1 year	Syrups	1 year
Macaroni, pasta	1 year	Tea - bags	6 months
Olives, pickles	1 year	Tea - instant	1 year

Pancake mixes	6 months
Peanut butter	6 months

REFRIGERATED FRUITS & VEGS

Fruit	
apples	1 month
citrus fruit	2 weeks
other	2-5 days
Vegetables	
Most vegetables	1 week
corn	1 day
carrots,radishes	2 weeks

MEAT FISH POULTRY (uncooked)

Meat	
most meats	5 days
ground,sausage	2 days
Processed meats	
bacon, franks	1 week
ham - canned	6 months
- slices	3 days
- whole	1 week
sausage	3 weeks
Fish, shellfish	1 day
Poultry	2 days

COMMERCIALLY FROZEN FOODS

Vegetables	1 week

DAIRY PRODUCTS

Butter	2 weeks
Buttermilk, sour cream	2 weeks
Cheese	
cottage, ricotta	5 days
cream, Neufchatel	2 weeks
sliced cheese	2 weeks
whole pieces	2 months
Cream	1 week
Eggs	1 month
Margarine	1 month
Milk	1 week

PREPARED FOODS, LEFTOVERS

Cooked or canned foods	
broths, gravy ,soup	2 days
casseroles, stews	3 days
fruit, vegetables	3 days
juices, drinks	6 days
meat, fish, poultry	2 days
stuffing	2 days
Cakes, pies	2 days
Flour	1 year
Nuts	6 months
Pickles, olives	1 month

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Breads, baked dough	3 months	Meat - lamb,veal	
Cakes	4-6 months	roasts, steaks	9 months
Doughnuts, pastries	3 months	Meat - pork	
Fish - fatty	3 months	chops	4 months
- lean	6 months	roasts	8 months
Fruit	1 year	Pancake batter	3 months
Ice cream, sherbets	1 month	Pies	8 months
Main dishes, pies		Poultry	
fish, meat	3 months	parts	6 months
poultry	6 months	whole	1 year
Meat - beef		duckling, goose	6 months
roasts, steaks	1 year	turkey rolls, roasts	6 months
ground beef	4 months	Vegetables	8 months

HOME-FROZEN FOODS

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Breads - baked	3 months	Meat dishes	3 months
- unbaked dough	1 month	Meat	
Butter, margarine	9 months	bacon	1 month
Cakes	3 months	franks	2 weeks
Cheese		roasts	1 year
cottage,ricotta	2 weeks	steaks - beef	1 year
natural, process	3 months	pork,variety	4 months
Cookies - baked	3 months	Nuts	3 months
Cream	1 month	Poultry - cooked	1 month
Egg	1 year	- uncooked	1 year
Fish	3 months	Vegetables	1 year
Ice Cream	1 month		

MV>DP"I looked into what was in one of those "liquid diet" things a while back
MV> "and found what you found but also a laxative and high amounts of dietary
MV> "fiber. Not exactly my idea of a survival or backpacking item.

^^

MV>I chose to leave those out... should I put them back in? Are laxatives
MV>important when backpacking or in survival mode? (grin)

I do not particularly rushing out to dig a hole to squat over. I would
leave the laxatives out. I was commenting that I didn't think the liquid
diet stuff was a good backpacking supply because of the laxative.

MV>Also, anybody up on:
MV>Doing your OWN oxygen displacement for long term grain storage?

I'm sure John has a lot of files on this. I am experimenting with
vacume. I have ha experience with nitrogen. The fellow I was helping put
away grain used 5 gal buckets. Filled to the top, lid placed tight, and
a metal tube <copper?> was inserted to the bottom. He had a bottle <like
oxygen bottle for welding> full of ntro and a regulator to drop the
pressure. The tube was place down a small screw on cap on the side of
the lid. He tipped the bucket with the small whole up, turned on the
nitro <real slow> and waited. He placed a birthday candel by the hole.
When the gas put the candel out he was done. Left the gas running while
he pulled the tube out, to make sure no air went back in to fill the
area the tube took up. I lost track of him after a couple of years,
never found out how the long term storage worked out.

MV>keep bug growth down). Now, around here, without trying TOO hard, I can fin
MV>wheat (my favorite easy to grind/use grain) for between 10 and 65 cents a
MV>pound. I can imagine burrying a chunk of dry-ice in the storage container a
MV>adding extra grain on top to replace the volume displaced by the "ice" befor
MV>sealing, after the chunk evaporates - pushing out the air mixture above/arou
MV>it. Using this method, you could fill those obnoxious 5 gallon white plasti
MV>buckets and stack 'em in yer garage, at a retreat, or build them into the wa
MV>of your adobe (grin).

I have no experience with dry ice, anyone else???

DP-Always willing to collect a new source. Right now my intrests are going
-in a slightly different direction. I am going to try dehydrating in the
-vacume chamber I am building for storeing large quantities of dried
-food. I would like to see this reference though, when you have the time
-see if you can post the name of the book and the author.

I'm trying to locate some articles that I had scanned from Am Surv Guide and Backwoods Home Magazines awhile back on vacuum packing foods for long-term storage. I think I uploaded them to John, but at this point am not sure. When I find them, I will send you a copy. Have recently found an article about taxidermists using a commercial freeze-dryer to preserve hides and bones for stuffing. According to the article it is the same type as used in hospitals for preserving tissue samples. If it is used in hospitals, it must be extremely expensive. There must be an inexpensive way to freeze-dry foods to retain the flavor and freshness, while completely drying the food. I'm still trying to understand John's drawing with the dry ice outside the chamber to condense the moisture. I might be wrong, so don't quote me. In my training when we pull a vacuum on an air conditioning system, the low pressure causes the moisture to "boil" away to vapor. This vapor is then discharged by the vacuum pump to the atmosphere. If you can get a really "hard" vacuum (in the neighborhood of 50 microns [29.9 inches of mercury]), and can hold it long enough the moisture in the food will "boil" or "evaporate" away. I think the reason the food is frozen is to keep the mold, fungus, etc. etc. from destroying the quality of the food.

The problem that Pat and I have had with the CO2 method is that moisture is a real killer of stored foods. When the CO2 "melts" it can cause quite a bit of condensation inside the bucket. After several

months, years, etc. the mold and stuff will have eaten all the food and leave nothing for you and yours. You see most of this mold and fungus is anerobic (prefers a low oxygen environment). While the CO2 will most likely kill all the insects, it generally won't affect the mold spores which think that you are giving them paradise. It is quite demoralizing to open a bucket of stored food thinking "Oh, boy, grub!!" only to find a nice pile of mold powder and spores. We ended up discarding that batch of wheat and going to prepackaged (nitro packed) grains. Until I can get my vacuum packer working, we will just pay the extra to have it done right.

On my vacuum packer, I am having a problem in getting the lid to seal. Presently, I have a 18" water main PVC pipe cut to 24". I used a "wrap-around" to make sure the ends were cut square. The bottom is a piece of Lexan (will bend and not break like plexi-glas) that I sealed to the end with epoxy and silicone (RTV) sealer. I am trying to find a piece of neoprene or some such gasket material that will seal between the PVC pipe and the other piece of Lexan that I'm using for a lid. In the lid, I have fittings for connection to my vacuum pump, a vacuum gauge, and a quick opening valve to allow air back into the chamber. These fittings are all sealed with silicone sealer. With this unit I should be able to process 1/2 gallon canning jars. I am of the opinion that storing in large containers is a waste and prefer the smaller containers for the following reasons:

a: easier to move from one place to another when the need arises.

b: the contents don't go bad before the food can be used.

Some folks talk about storing huge 55-gallon drums of wheat, corn, beans, etc. I would really hate to have to make a quick exit with one of them on my back. Pat has a little trouble with two 5-gal buckets, but she can manage them. They stack easily with or without wood framing or shelving. "Mason" or canning jars can be repacked in the original cartons for easy storage. And, it's like my ol' grannie used to say

when unexpected company showed up for dinner. "I'll just throw another cup of water in to the soup." With smaller containers, you only have to open the amount that is needed. This keeps the majority of the food stuffs safe.

A recent program on camping and canoing broadcast on the local PBS channel had a large segment on how to dry, store, package, and prepare "home-made" freeze-dried meals. I'm going to try to get a copy of the tape and watch that segment again. Days-off from work are presently spent trying to find references on freeze-drying foods at the local library. There must be a way to do this process in the comfort of your own home. So far, I haven't been to lucky at locating the information. As soon as I do, the readers will get the information.

I sent away for a catalog on quite a selection of survival type goods, including MRE's, various packaged foods, guns, knives, first aid kits, military tents, etc. Some prices look quite good, others kind of so-so. If nothing else it is worth taking a look at. I think you need to send them 1 or 2 bucks for the catalog. MRE's are $43.00 a case. The address is:

Ponderosa Products
2467 Ballantyne Lane
Eagle, Id. 83616

Someone was asking me about dessicant breaking down and affecting food quality. I don't know the answer to that but I noticed that they have some packaged bread stored with a dessicant of some kind. It could have a different chemical compound than the standard gel type. I have noticed however that quite often vitamins and such are packaged with a tiny packet of silica gel.

Another product that should be a boon to anyone interested in long term storage is a machine called a Food Saver. Something like a Seal-A-Meal it first sucks all (most) of the air out of the bag and then seals it. It can also be used to

seal wide mouth canning jars.

For storing seeds for use much later try packing them with a packet of silica gel in the foodsaver bags, sticking them in an ammo box (so you know where to find them and mice can't get to them when they are taken out) and sticking them in the freezer. Storing them this way insures they last virtually forever in a frozen condition and probably several years once they are taken out of the freezer.

Subj : Food Storage On A Budget.

LC>to make towards establishing emergency supplies is to have a years supply of
LC>food, which would be available to me with or without use of electricity, I w
LC>wondering if anyone has considered a frugal approach to this via dehydrated
LC>and dried products. Portability is of less concern but should be considered
LC>somewhat in case relocation was necessary.

You'll probably find each person has found they have a special preference for food storage, so get prepared for a bunch of different opinions! <G>

For a one year storage, I've decided to simply use regular canned foods. Easy to buy, cook, its cheap, and I'm used to the taste. Personally, I feel its a good idea to have at least 3 months supply of canned food even if you choose something else, so you can switch back and forth as you're getting used to to the new way of cooking.

On portability, that can present a problem. I used to think I could simply throw all my stuff in the back of my pickup and boogey, but I have too much stuff! Unless you're fortunate enough to own something as big as a school bus, you may find the weight and bulk of stored food, clothing, and gear to be overwhelming.

The most natural solution to all of this is of course to move out to some land now. You can store all the stuff you want, cache the stuff you may not be able to transport at one time, and of course food

storage requirements drop dramatically, as there's no need to harvest root vegetables until the day you need them, which means you'd need far less in food supplies.

Guess it all depends on what type of future you're planning for. Some of us keep a year's supply of food around just so we won't have to go to town as often. Some are preparing for a depression, some for natural disasters, some for war. The things you'll be needing will depend largely on what you're expecting to use them for.

LC>It would seem that dried beans available in grocery stores would be a basic
LC>staple and I am sure that in proper combination they may provide complete
LC>proteins. Powdered milk products would also provide protein and is readily
LC>available. Rice would store indefinitity and while providing no protein
LC>is an excellent carbohydrate. Nuts, raisins, dates, etc, would seem to keep
LC>well if stored properly. Also, use of my home dehydrator is an option.

I too like the idea of beans and rice. We're still not sold on powdered milk though (matter of taste preference). My wife loves noodles, which store well. For our preference, we'll probably be going freeze dried foods for long term storage due to its lighter weight and fewer demands on storage proceedures.

I like things that are easy to prepare, taste ok, and aren't expensive. Being the lazy bum I am, I've also chosen to buy most all of my stuff already sealed. Due to the area in which I live, there is enough wild vegetation growing around me to supply us with most of our needs, so my long term storage needs aren't a high priority right now.

Just in case you haven't given it much thought yet, before you get too involved in food storage, be sure to be 100% sure you have a good water supply. Food can usually be had without much effort, but good water is scarce already, and would be even more so in an emergency.

One good way to make plans is to look at what happened in Rwanda and Japan. Rwanda's civil war created unsanitary conditions, and Japan's earthquake left them without everything. I watch the news

clippings and think to myself how I'd react in such a situation.

LC>Now, what I was wondering is this: Considering one of the first moves I want
LC>to make towards establishing emergency supplies is to have a years supply of
LC>food, which would be available to me with or without use of electricity, I
LC>was
LC>wondering if anyone has considered a frugal approach to this via dehydrated
LC>and dried products. Portability is of less concern but should be considered
LC>somewhat in case relocation was necessary.

Well, first of all food is only about third in you needs. If cut off
from civilization completely your #1 priority is water. So conside
haveing a reliable source or a years supply<?> on hand. Then you need
protection from the elements. Clothing, a roof<tent,jungle hammock,
materials to construct some sort of lean too>,etc. THEN you will need
food. And yes, dried foods PROPERLY STORED, are a major <and less
expensive> way to go. I am playing arround with vacume packing as a
means of storage. I understand that a mixture of rice and beans is
enough to sustain a human with very little else needed. I will have
about 100 lbs of each set asside <vacume packed> by the middle of this
year. A 100lb bag of rice is relatively cheap. 20lb bags of beans cost
about the same as the 100 lb bag of rice. Of course the canned foods are
a nice suplement to the dried stuff but if you are wondering what to lay
away first my opinion would be with the dried foods first, then wory
about adding the "extras" that makes life more bareable. I hop to have
fresh caught fish and other of natures bounty to add to my dried
supplys.

LC>It would seem that dried beans available in grocery stores would be a basic
LC>staple and I am sure that in proper combination they may provide complete
LC>proteins. Powdered milk products would also provide protein and is readily

LC>available. Rice would store indefinitity and while providing no protein
LC>is an excellent carbohydrate. Nuts, raisins, dates, etc, would seem to keep
LC>well if stored properly. Also, use of my home dehydrator is an option.

All excellent choices. However, storage is a very important point.
Haveing all that stuff doesn't do you much good if when you open it up
you find that bugs have nested in it or the rats have chewed through the
plastic container. I personaly am going the vacume packing route in
glass bottles. The vacume elimenates the bugs and the glass jars are to
hard to eat through.

LC>Hopefully you get the idea. Does anyone have any suggestions as to what is
LC>available and easy to start with on this type of program.

If going with vacume packing I <we> are still experimenting with the
best way. Jars like the Ball canning jars work best for vacume packing.
There were some vacume packing machines that were very small and simple
that were manufactured about 2 years ago. They all came with an
atachment to pull a vacume in a ball<type> jar.

Poor Man's Food Storage

Consider $1000 to $2000 dollars a year per person for long term food storage. MREs are more expensive. I do not know about your finances, but I am acutely aware that I may never have that much extra money. Between the NRA, GOA, political activities, telephone and computer costs, other mandatory equipment, vehicle maintenance, and all of the incidentals to maintain constant preparedness I consider my money pre-spent.

Another problem with food storage is a health issue. Some plans do not offer a balanced diet. MREs offer the poorest balance of vitamins and minerals of all. An even greater health concern is the change in diet between your normal fare and a survival diet. An abrupt change in diet often triggers adverse physiological changes. This is not a good time to contract a prolonged illness.

There is a practical approach. It will not adversely effect your health and in the long run will not cost you anything. You may even save some money.

Any money you save collects interest at a rate below the rate of inflation. Any money you invest in hard assets appreciates at the rate of inflation. This will make you money, but only if the assets retain their value. Food retains its value and increases that value with time. If you use a can of beans, or peaches, or some other food that can be stored you use it at the price you paid for it. If you bought it for $.79 and it currently sell for $.89 you have saved $.10. How would you like to be drinking coffee you bought last year?

If you increase the amount you spend on food by 10% you will find that you will soon have more food than you can store. When you have as much food as you can reasonably use you will find that you have to reduce the amount of money you are spending. If inflation continues you will have to reduce your expenditures below the 10% you originally added to your food budget. Your only problem will be how decide what to do with the extra money. That is no problem for me, like I said, my money is pre-spent.

No special skills needed. However, you may have to build some shelves to hold the food.