

(pt.1) Family Food Security

Due to Y2K-related disruptions in the retail, shipping and processing industries, there may be problems with food processing and distribution in January 2000. There's no lack of raw food products in the country, but the processing, transportation, and marketing of groceries is vulnerable to Y2k disruptions. Each bite of your dinner travels an average of 1500 miles to get to your table. Most grocery stores stock less than a week's worth of food; without daily deliveries, their shelves will empty fast. The entire food processing system has only 60 days of product in it. There is not an expected shortage of food; but the ability to process and deliver it to consumers may be problematic if there are Y2K disruptions.

There is little or no independent, verifiable, visible assurance about Y2k compliance in the food processing and distributing industries. The United States Senate met with "significant resistance...from both industry trade organizations/associations as well as major corporations within the retail and manufacturing sides of the food industry" as it tried to gather evidence regarding Y2K issues in the food distribution system. Investigating the Impact of the Year 2000 Problem, U.S. Senate Report, February 1999, page 130.

There's a lot of loose talk in the media disparaging the household management practice of keeping 2 or 3 months' supply of food on hand. When I hear this, I know that the commentator has never been poor and has probably led a relatively sheltered and comfortable life. Having such a life is not a bad thing of course, but it should be tempered with humility. Typically, the only flexible item in a poor family's budget is the grocery money, and if there is an emergency, that is where they go for money for the doctor, car repairs, or whatever. If the family has extra food, they can do this and still put dinner on the table. If they have no extra food, they are out of luck and out of food. The less economic security a family has, the more important it is that they keep savings in food.

There's other reasons to stock a full pantry. Buying large containers usually results in a lower price per unit. Every time you go to the store for just 1 thing, you often end up with "just 10 things", so one secret of saving money is staying out of grocery stores as much as possible. It is easier to do this if you have a well-stocked pantry. You also save quite time as you don't have to go to the grocery store so often, you have what you need at home, ready to go. A well stocked pantry is a good idea what-ever happens in January 2000.

Do the people disparaging this household management practice as hoarding think about these issues? Not likely, that's why they're preaching against frugality, prudence and food security. Grocers and food processing corporations don't like such thrifty habits. They make extra money when we go to the store 7 days a week, without planning menus or making a list, and buying whatever "looks good."

Is there a connection between the full court press from politicians and

news media against this traditional and frugal practice -- and food industry advertising revenues and political contributions? I don't know the answer to this, but would it surprise any of us if it turns out to be true? Unfortunately, this isn't a question that will be asked by today's mass media.

Mergers over the past decade have brought most of the wholesale food processing and distribution systems under the control of a half dozen major transnational corporations. Today our food distribution resembles an hour glass -- a lot of producers, a diverse retail system, constricted in the middle by a handful of big players. Due to competitive demands to minimize expenses, production capabilities have been streamlined. There are fewer processing facilities. A lot of small operators have gone out of business or merged with one of the big players. Since there are fewer food factories, the processed food must travel longer distances to reach the customers, and at each stage of those transportation systems there are Y2K vulnerabilities.

This year prices of pork to producers plunged to all-time lows because the over-supply of pigs coming to market could not be handled by the processing industry. Across the wheat belt, grain may be piled on the ground because of lack of storage facilities, but the corporations who control the processing of the grain may not be able to process enough to meet increased demand. Have corporate consolidations and mergers in the food processing industry placed our food supply at risk for the sake of extra profits for stockholders? From the way food industry executives are publicly discouraging stocking up for Y2k, it would appear this is so. But we're not supposed to notice that the Emperor is naked.

This has implications also for food safety, as well as Y2K. With fewer, but larger, food processing plants, and contamination in one plant can cause an international recall of tainted foods. Such recalls are rapidly increasing. In a similar way, Y2K disruptions in even one plant can cause trans-continental problems.

Since the existing players seem to have worked their way into a box, increased demand for processed food due to Y2K concerns may mean opportunities for direct marketing relationships between farmers and consumers. Corporate concerns about the possibility of competition may be the real reason behind industry statements discouraging people from buying extra food.

Historically and in the present context, food storage is a prudent response to valid concerns about the brittleness and lack of resiliency of the food production and distribution systems. Putting food by for storage when it is plentiful is not hoarding, it is a traditional household management practice. When it comes to food, we've always hedged our bets and limited our risks in the face of uncertainty, especially when hard times were on the horizon. Increasing your food purchases sends important market signals to the food processing industry to move more products into the stores. Buying stimulates the food production and distribution supply line and create opportunities for small businesses (such as farmers and local processors) to compete on a more equitable basis with the big players.. As basic products move

through the system from farmers to processors to retailers to consumers, everybody benefits by the increased economic activity. If you hear people in the food industry discouraging people from buying food, their motives are more mixed than they would like for us to believe.

Buying directly from farmers and local processors and urban agriculture greatly contribute to community food security. Throughout all of China's tumultuous history this century, one social policy has remained constant under both Nationalist and Communist governments: cities should get their food from the vicinity of the city. Chinese governments discourage shipping foods long distances (although some of it happens, of course). Shanghai, for example, is self-sufficient in vegetables, and gets most the rest of its food from within a 100 kilometer radius circle around the city. Calcutta produces 1/3 of the fish and vegetables consumed within the city. Around the world, many of the urban poor report that they would starve if it wasn't for food that they were able to grow within the city.

People who are very hungry may refuse to eat food that is unfamiliar to them. Calories count for nothing if we don't recognize them as food. So if you can avoid it, don't try a new diet in the midst of a stressful emergency. The best advice is to store what you eat and eat what you store.

One: Determine how much of what foods your family eats in a month. Do this by totaling up your grocery lists, or saving your receipts, or examining your menus.

Two: Decide how well those products will store over a period of months. If you are using a lot of foods that need refrigeration, think about substituting alternatives that don't require refrigeration such as canned or dried, pickled or salted.

Three: Make your list, check it twice, buy and store the food. It's not rocket science, it's home economics. You are unlikely to need a special food consultant.

Store a variety of foods. You need dried whole foods like beans and grains and you need canned goods like tuna and chili and soups. If you expect that fuel for cooking will be a big issue, store more canned goods (which require less cooking), and less dried beans and rice (which require more cooking), or build a solar oven. Cream soups are particularly useful; they make excellent instant sauces that can be combined with pasta and rice and are a key ingredient in many casseroles.

Store some comfort and specialty foods. Hard candies, chocolate, coffee, herbal teas, favorite snacks and meals, all these are important not only for nutrition, but also for morale.

Stock your spice rack liberally, and don't forget condiments, baking powder and soda, cooking oil or shortening, bouillon, and yeast. Beans, rice, flour, and etc. can be a bland diet without spices to liven things up a bit.

(pt.2) Family Food Security

The traditional practice of groups such as the Mormons, who practice food storage as a religious and cultural discipline, is to store basic foods such as whole grains, beans, and dried milk. Such food products are widely available, and can be easily stored for long periods of time. For most people, however, storing these products will require dietary changes. They will need to increase the amount of grains, beans, and vegetables in their diets, and decrease the amounts of meat. If you decide to change your diet, start introducing whole foods cooking gradually to allow your family time to learn to enjoy the new foods.

Cooking from whole foods is what your grandmother used to do, and who can forget the tremendous holiday meals at Grandma's? With practice, whole foods cooking can be as convenient as anything frozen in a cardboard box, especially since you don't have to make a special trip to the store to get it.

If the store isn't busy, for me to get in my car, go to the store, make my selection, stand in line, buy the frozen dinner, go back home -- figure that time at your hourly wage, and see how expensive that frozen dinner really is. If you've stocked your pantry properly, you can get by with as few as two trips to the store each month, and how much time would that save you, remembering how often these days that "time is money"? Not to mention, that time in the store is not quality time you're spending with your family. Maybe you are the one American family without a time crunch, and if so, congratulations, but the rest of us could use some extra hours every month, and stocking your pantry with a couple of months of basic food supplies is one way to do that.

As an added bonus, you save money. When something is on sale, you can buy a lot of it without busting your grocery budget. Going to the grocery store is often like roulette, meat may be cheap, but canned goods have gone sky high. There's a sale on sugar, but look at the price of milk. You don't have to be hostage to the pricing strategy of your local grocer. Even if you are poor, you can insulate yourself from the vagaries of that marketplace by always being in a position to serve dinner, even if you don't go to the store for a couple of weeks.

If canned goods are high and meat is low, you can buy meat, and get your canned goods next week when they have gone down in price but meat has gone up. You already have the meat, so you don't have to buy it when it is expensive. Effectively, this is a decision to keep some of your family's savings in the form of durable goods -- which is to say, groceries in the cupboard -- and this investment actually earns you interest and dividends in the form of better deals on the groceries you buy. You are going to spend money anyway, might as well get maximum value for your money -- in terms of saving you time and money. For most people, spending less money on groceries and having more time with their families would add up to "a better quality of life, and more family security".

So you can see why the corporate grocery industry has a vested interest

in discouraging this practical and frugal household management practice. Irrespective of Y2k, it is a good idea for the consumer, but grocers don't like it because they're making money with their volatile price swings and high profits.

The basic whole foods diet is detailed in the USDA Food Pyramid chart, which shows the number of recommended daily servings of each of the major food groups. Switching to a whole foods diet certainly doesn't mean giving up your appreciation of fine foods. Including these items in your diet has very real and health and quality of life benefits. So even if hard times come, you can enjoy arroz con pollo, pizza, chocolate cake, polenta, red beans and rice, fresh tortillas and homemade salsa, or any of the thousands of other tasty and nutritious meals that can be made from stored grains, beans, and vegetables. If there are no hard times, you can still enjoy the good nutritious food, and save time.

The advice often mentioned by the United States government is 2 or 3 days worth of food, but this recommendation is an unwise holdover from contingency plans for localized disasters, and also a reflection on how far we have departed from traditional frugality. Generally, the Red Cross and FEMA (Federal Emergency Management Agency) figure that in most disasters, within 3 days they will be set up throughout the affected area, ready, willing, and able to distribute food or other supplies as needed. Thus, their concept is something to tide you over until the cavalry arrives.

However, Y2K is not a normal emergency. It happens everywhere at once -- but the Red Cross and FEMA can't be "everywhere at once". Neither can anybody else.

In the context of disaster preparations -- and perhaps as a start to a better and more frugal household management practice -- buy more food than you think you will need, and for a longer period than two weeks. Food is a consumable item, everything you buy is something that you can eat in good times or bad times. If Y2K turns out to be a false alarm rather than a crisis, you've saved yourself time and money in the year 2000, because you have already bought most of the groceries you'll need for the first few months of the year. You can use that time and money for something else, like taking the family on a vacation. Alternatively, you can donate the excess groceries to a food pantry that helps the poor, and write it off as a tax deduction. Any way you look at it, money that you spend on food now is money in the bank.

Start with your local sources. This may include various grocery stores, large discount/membership stores, farmers markets, feed stores, there are many possible options.

An excellent idea is to develop a direct buying relationship with one or more farmers. This will be especially useful if you preserve some of your food yourself (drying, smoking, or canning), or if the farmer or cooperative does some processing. These skills help you ensure a high quality product. Make such contacts at farmers markets, or through your county extension agent or food circle. If international and national food distribution systems break down, having a relationship with a

farmer in your area could be very important. Small farmers and cooperatives are good sources for items such as salt cured country hams that keep without refrigeration.

Support the opening of a "community canning kitchen" in your area, by a cooperative of producers, or by a non-profit group such as a church or civic club. This would provide opportunities both to help families preserve their own produce, and also to give small market gardeners or microenterprises opportunities to process foods in a health department approved process.

Since cooking and eating is crucial to your survival, don't be dependent upon only one form of energy, such as gas or electricity, for food preparation. Have one or more of these alternatives on hand for emergencies, or use some of them (as appropriate) for saving money on energy costs right now.

(pt.3) Family Food Security

For emergency camp stove cooking inside a house, the preferred choice is the propane camp stove -- with proper ventilation. Place it right in front of a window open at least one inch. Coleman fuel stoves are not recommended for indoor use, although they would be fine outside, on a porch, in a garage, or other well-ventilated place. Most propane camp stoves run on one pound disposable cylinders; if you are cooking three meals a day, you can probably get 3 or 4 days cooking out of each cylinder, depending on what's on the menu. While it's possible to bake biscuits on top of a camp stove (you usually will have to flip them to get them to brown on top), it is better to buy a camp oven that sits on top of the propane burners. These are sold in camping supply stores or departments.

Buy an attachment for the propane camp stove that will allow you to cook on it while using a bulk propane tank (such as a 20 lb, 5 gallon tank) for fuel. These stoves are cheap enough that you could buy three or four and thus be able to do a lot of cooking, while also having one or two that you could loan to a neighbor in distress.

Remember that a blue flame is the cleanest burning flame, so adjust the flame so it burns blue.

(1) Place a heat diffuser on top of the burner(s). This could be a large cast iron skillet or grill, or a cookie sheet.

(2) Put something on top of this to raise the cooking pan up off the heat diffuser and allow air to circulate underneath the pan. This could be a low cake pan, or a couple of empty tuna cans.

(3) Put the food to be baked in a covered pan on top of the "risers".

(4) Make a tent from several layers of aluminum foil over the cake pan, so that air can circulate underneath it, and put a small vent hole in the top of the aluminum foil cover. Keep an eye on the food as it is baking.

RV's, campers, and mobile homes are often equipped with kitchen stoves that burn propane. A natural gas stove can be converted to propane by adjusting the natural gas jet orifices to burn propane (in some cases they will need to be replaced). Propane companies will often do this conversion for free. I found a company here in Oklahoma City that charges \$40 for the conversion. Other sources for propane stoves are RV and mobile home distributorships and suppliers. Never try to run a natural gas appliance with propane gas without such a conversion; the natural gas jets are much larger than the propane jets.

A chafing dish consists of: (1) a stand that supports a pot, (2) a heat source, which is usually a canister of a jelled cooking fuel that is sold specifically for chafing dishes; typically, this sits on a little platform in the middle of the stand, (3) a pan for water, (4) a cooking

or warming pan that can sit either directly over the flame or over the pan of water. A fondue pot is a type of chafing dish with the heat applied directly to the pot.

For chafing dish fuel, there are multiple options. Sam's Club sells "Safe-Heat" brand canned fuel for chafing dishes, a dozen to the case, each can burns six hours, 72 hours of cooking for about twelve dollars. Candles and denatured alcohol burners are other alternatives, although alcohol burns very fast, and candles cook slowly. Chafing dishes come in many sizes. The small stand that supports the chafing dish can be used with a skillet or omelet pan, or a pot for soup or stew. You can often find small chafing dish stands that are made for use with a candle at thrift stores; they will support a small pot. These can be used for warming canned foods (chili, pasta and sauce, ravioli, soup, etc.) It takes a half hour to an hour to heat a can of food using a small candle, depending on how hot you want it. Oatmeal could also be made this way, especially the instant oatmeals (or instant grits, depending on what part of the country you hail from).

Woks work well with the chafing dish fuel canisters such as Safe-Heat.

You can make a wide variety of recipes in a chafing dish: griddle cakes, eggs benedict, salmon cakes, creamed dried beef, crab meat bisque, chicken a la king, stew, soup, macaroni and cheese, Swedish meatballs, etc. Very useful in the event of either setting up for a party buffet or getting through utility problems in January 2000. Even if the electricity and natural gas are disrupted, you can still enjoy a gourmet meal, prepared at the table, served by candle light.

Solar cookers can be made with cardboard boxes, aluminum foil, duct tape, and glass. Such ovens can easily get to 350 degrees, hot enough to bake meats and casseroles. You can easily make one. There are several books on the subject, one that comes well recommended is *Cooking with the Sun*, by Beth and Dan Halacy, with complete plans for different designs.

A solar cooker works by (1) absorbing solar heat in a dark pot through a clear transparent cover such as glass or an oven baking bag, (2) insulating the pot so that the heat does not radiate out but rather cooks the food, and (3) they usually have some way to reflect additional sunlight onto the pot via a panel of reflective material. Any recipe suitable for a crockpot will generally work in a solar cooker.

One of the easiest solar cookers to make is the "two box model". Glue aluminum foil to the inside of two boxes, one a bit larger than the other. The smaller box is placed inside the larger. It's not necessary to use insulation between the two boxes, as long as there is at least a half inch air space between the two.

The smaller box should be just larger than the pot that will be used in the cooker. Slit it at the four corners (down to the height of the pot) so that its sides will fold out, and duck tape them to the sides of the larger box. Make a tight fitting lid for the outer box, and cut a large hole in the center of the lid so that sunlight covers the smaller box.

Glue an oven baking bag to the inside of that lid, completely covering the sun opening. A second piece of cardboard (the size of the lid) is covered with aluminum foil and attached to the side of the box so it reflects sun down onto the box.

To cook food, place a covered pot inside the smaller box and put the lid on the larger box; face the box toward the sun. Position the reflector to direct more sunlight down onto the box. It will get 300 to 350 degrees inside. Start your dinner in the morning; eat it at night. Use an oven thermometer to monitor the temperature.

You can make an improvised non-electric crock pot with an ordinary box, or a five or six gallon plastic bucket. Line the inside with aluminum foil, and put several inches of insulating material on the bottom. Bring the food you are cooking (generally, crockpot recipes) to a boil, cover the pot and put it in the container. Pack the spaces between the pot and the sides of the box or bucket with insulating material (whatever is handy, crushed newspapers, cloth, straw, sawdust, etc.) Pack the top of the box or bucket with insulating material, and put the lid on. Let this sit for several hours or overnight (depending on the crock pot cooking time).

A wood stove not only can keep your family warm, you can cook on top of it, using a pot or a frying pan. With some bricks, you can make a stand for a pot in an open fireplace, and Dutch ovens can be cooked in fires built outside in the yard or in the fireplace. Dutch oven cooking is an art in and of itself, and there are many good sources for recipes and instructions. A good place to start is with materials prepared for use in Scouting, or the cookbook and camping sections of your local library. Charcoal briquets can be used with your cast iron skillets, Dutch oven, and other pots and pans, but such cooking must be done outside.

The outdoor barbecue grill is an obvious outdoor stove, but if you don't have one, it can be built. Many families are building outdoor bread ovens in the traditional European style. This is a backyard project accessible by most people, and plans can be found in most major libraries.

Coffee can cooking. Layer food in a coffee can (such as onions, potatoes, carrots, meat, repeated). Cover with heavy duty aluminum foil, place on medium-hot coals, put some coals on top of the foil, cook for about a half hour or 45 minutes.

Pie-pan oven. Grease a metal pie pan and put biscuits or bread into it. Grease a second metal pie pan and place it over the first. Use 4 metal clamps (the kind you use with paper) to hold them together. Put some coals on top of the pan. If doing this on a camp stove, instead of a campfire, use the procedure described above in "baking on a camp stove".

Muffin pan oven. Take a metal muffin pan, and either grease the cups or line them with cupcake liners. Put different foods into the cups -- meats, vegetables, biscuits of muffin batter. Oil the second pan, fit it over the first and clamp them together using four big clamps (the kind you use for paper). Cook for 25 to 35 minutes. This can be used over a

campfire; put some coals on top of the muffin pan as well as underneath.
If you are doing this over a camp stove, use the procedure described
above in "baking on a camp stove".

(pt.4) Family Food Security-the end

Grain mill. Many people are learning the advantages of grinding their own flour or cracking grains to make their own cereals. In the event of prolonged problems due to Y2K, it is possible that there will be emergency distributions of whole grains, since processing may be disrupted by the effects of the Y2K bug. In such a situation, the ability to grind those whole grains at home will be very important. While it is possible to improvise a grinder using three small diameter metal water pipes bound tightly together, this is strictly a third world human labor technology (lift, pound, grind, lift, pound, grind). Electric mills are available that also have hand cranks. Metal-burr mills can be bought cheaply, and are often found at flea markets and thrift shops.

Hand mixers and choppers, kitchen knives, non-electric can openers. Power failure will mean that electric food processors will not be available (unless you have alternative power). Hand mixers, potato mashers, and hand crank choppers, which are inexpensive right now, will be very useful -- especially if you are feeding more people than usual. Make sure you have a quality set of kitchen knives, as well as the appropriate sharpening equipment. It's also possible to find DC food processors, mixers, and blenders that will work on battery power.

Don't forget non-electric can openers. Get extras.

Spice mill, coffee grinder, meat and sausage grinder, pasta maker. These items can add a lot of quality to your life right now, as well as being about as useful as it gets in the event of problems in January 2000.

Food preservation tools. Dehydrators, and boiling water and pressure canners have many uses here and now as well as in any later emergency. Home processing is the best way to ensure taste, nutrition, and quality for your family. It opens a world of traditional activity, including the making of your own jams, jellies, salsas, pickles, saurkrauts, and other specialty and ethnic food items. (These make wonderful gifts during holiday seasons.) Home processing is much easier than most people think, as long as you are able to follow the instructions. Mason jars and lids are useful, and it's good to have a supply of them on hand in the event of emergencies.

Dutch oven (cast iron), metal pie and muffin pans, extra oven racks, large pots, aluminum foil, oven baking bags, cake pans, cooling racks, trivits. Dutch ovens are practical cooking tools. Metal pie and muffin pans can be used to improvise camp-stove top or campfire ovens. Large pots are useful if you find yourself feeding extra guests or helping to set up a soup kitchen. Extra oven racks can be used over camp fires or charcoal briquets. Aluminum foil has many uses in an emergency kitchen, many foods can be cooked in it. Oven baking bags are useful for making solar ovens. Trivits sit underneath a pot on a cast iron stove and raise it up a bit, preventing the scorching of the food inside.

Your concerns are to keep the food clean and free of infestations by

rodents or bugs, as well as maintaining its nutritional quality. You must maintain high standards of hygiene at each stage of this process.

The basic storage drill is quite easy.

Start with good quality products.

For products like rice, beans, flour, dried milk, pasta and etc., open the original package and fill a large ziplock bag (gallon size), seal it, and then place that bag inside another ziplock bag. Many people put a bay leaf inside each bag of beans, grains, or flour. Pack these ziplock baggies in food grade plastic buckets with airtight lids. This helps keep the products free from contamination, and if you do have a "bug outbreak" inside the containers, the ziplock bags help minimize the contamination.

The warmer and more humid the climate, the more trouble you will have with weevils and bugs hatching inside the containers. If you generally have a problem with storing flour on your shelf, freeze the bags for 2 days before putting them in the buckets.

Food grade plastic buckets may be purchased new from local sources and catalogs. Many people get them for free, or at reduced cost, from bakeries, donut shops, restaurants, or other users of institutional size containers of food products. Plastic paint buckets and trash cans are not food grade plastic and should not be used for this kind of storage.

Canned goods are best bought by the case, and stored in their original cans and cases. Canned goods have expiration dates, and if the date is stamped in a code, you can ask at your local grocery store or county extension office for help in deciphering it. Many companies have a toll free number on the can for consumer information; such departments can also give you this information. Dried and canned foods bought in 1999 will still be safe and nutritious to eat well into the year 2000. If a can is bulging, don't use its contents.

Store all food away from light and at a constant temperature, avoiding extremes of hot or cold. Garages or attics are not good places to store food, unless you live in a mild climate. Dry basements are better; always put food storage containers on shelves or on bricks or boards so that they aren't stacked on bare concrete. Put a label or sticker on the buckets that lists the contents and the date they were purchased.

At all stages of the food purchase, storage, preparation and consumption process, observe good food safety procedures. Wash your hands with soap and warm water before handling food products. Make sure that any areas to be used for food packing or preparation are cleaned thoroughly with soap and water and then rinsed so that no soap residue remains. Use a sanitizing solution on all preparation or packing surfaces. A sanitizing solution is 1 tablespoon of chlorine bleach in a gallon of water in a gallon of water for hard surfaces, 3 tablespoons of bleach in a gallon of water for porous surfaces such as wood, the chapter on Health and Wellness has complete instructions for this.

Once food has been prepared, hot foods must be kept hot (above 140 degrees Fahrenheit) and cold foods must be kept cold (below 45 degrees Fahrenheit). Be careful about storing prepared foods in the absence of refrigeration. If it is winter, use an enclosed porch or unheated room as a cold room. Put a thermometer in the area and check it several times a day to make sure it is staying below 45 degrees. Protecting the cold box from sunlight will help maintain cold temperatures. If it is very cold -- freezing cold -- food in your freezer can be kept frozen in such a box in a cold room or outside. During the Montreal ice storm of 1998, many people had food spoil in their freezer because they didn't think about keeping their food frozen in a box on their porch.

If the power goes off, you can prolong the life of food in your refrigerator or freezer by opening them as little as possible and by providing additional insulation. Wrap the freezer in blankets or newspapers, and/or stack bags of clothes against the walls or on the tops. The more insulation the unit has, the longer the items inside will be safe to eat. Shield it from any direct sunlight, and don't heat that room. You could buy some rigid board insulation, and use duct tape to wrap the refrigerator (or an improvised cold box).

Eat the items in the refrigerator first, that same day, even if it makes for an odd collection of salads, sandwiches, and leftovers. Invite the neighbors for a Y2K buffet and barbecue (morale and neighborhood solidarity are always issues in emergencies, so don't discount this as a rhetorical flourish).

Creamed foods, soft cheeses (cream cheese, cheese spreads, cottage cheese)gravy, mayonnaise, salad dressings, pork, and poultry spoil quickly. Dispose of them if they have been in the refrigerator without power for 12 hours or more. Spoiled foods may not have an offensive odor, so while the presence of a bad odor is a sure indicator of spoilage, its absence may not be an assurance of safety. Quickest spoiling of all are seafood, chopped meat, and poultry sandwich fillings, which are not safe after 4 hours without refrigeration.

Hard cheeses will often be fine at room temperature. If a surface mold develops, cut it off and use the rest. So does milk, but sour milk can be used in baking (corn bread, pancakes, waffles, biscuits, sour dough starter). Butter will keep for several days, and clarified butter will keep for months without refrigeration. Clarified butter has the additional virtue of being low in cholesterol while still imparting that unique natural butter flavor, it doesn't smoke when used in cooking, and it is found in the finest gourmet kitchens.

If you keep the door closed, most freezer food will stay below 40 degrees for up to 3 days, even in the summer. A full freezer stays colder longer than one that is partially full. If you are expecting a power outage, turn the freezer to its coldest setting several days in advance of the expected emergency (add this to your last week of December 1999 checklist). Fill any empty spaces in the refrigerator with bottles of water (leave 2 inches of empty space in the bottle to allow for expansion of the ice). The larger the freezer, the longer foods will stay frozen:

Freezer size time until food spoilage

4 cubic feet 3 days

12 - 36 cubic feet 5 days, and possibly as long as 7 or 8 days

If you plan to intermittently generate power to keep your freezer or refrigerator cold, you will need a good thermometer. Before an emergency, experiment with the appliance to determine how much power is needed each day to keep the food in the freezer frozen.

A second alternative is to preserve freezer foods by pressure canning (if you have the equipment, jars, and ability to follow directions exactly). Frozen prepared meals should be eaten right away, as there isn't a practical way to preserve them in the absence of electricity, ice, or very cold temperatures outside. Meats can also be made into jerky, or cooked and dehydrated.

Since Y2K may bring power outages, if you are not equipped to generate power and you don't expect outside temperatures to remain below 45 degrees, slowly emptying your freezer and refrigerator in December 1999 is a good idea. If nothing happens, you can always restock; if the power does go off for an extended period of time, you won't lose the investment you've made in frozen food. Fortunately, December is the holiday season, so you shouldn't lack for opportunities to prepare and serve food.

These days many people take short cuts regarding food safety and manage to not kill themselves or others, but these risks are assumed in the context of a fully functioning medical system ready to rescue in case something does go wrong. In an emergency, that medical backup may not be available, so it becomes imprudent and risky to cut corners with food safety. Do it by the book, follow the instructions, use a disinfecting solution liberally in food preparation areas, don't eat questionable foods or drink unboiled/unpurified water. When in doubt, err on the side of caution. If the pharmacy is closed, you do not want to deal with dysentery or intestinal parasites. Even if food is scarce, don't eat questionable foods. If you are undernourished in general, the last thing you want is a food-related illness or parasite.

Urban areas grow an amazing variety of food, so foraging may be a viable alternative, depending on your knowledge of edible wild plants. This requires a good plant identification guide, or expert personal knowledge about the subject. Those dandelions in your yard aren't weeds, they could be lunch, or even wine! So could the nasturtiums and bachelor buttons and carnations in your flower garden. (You would pay a lot of money in a fine restaurant for a salad garnished with these flowers.)

The most common form of foraging is fishing. An essential part of your preparedness plans should be fishing equipment for use in ponds, rivers, streams, lakes or the ocean. An added advantage of fishing is that time spent fishing is not deducted from your allotted life span. If fishing in an urban area, think about what pollutants may be present; check with

local health authorities about eating fish taken from the urban rivers or lakes in your area.

There are many perennial plants, trees, and shrubs that have attractive displays of foliage in addition to their food production capabilities. A local home and garden center, or the county extension office, can offer advice about appropriate selection and cultivation of such plants in your area. Many areas have community gardening associations that can provide everything from free expert advice to seeds and tools. Gardening offers advantages that include exercise and a closeness with nature that is often missing from our urban lives. The sweetest asparagus comes from the perennial patch in your own back yard.

Persons who live in apartments can garden in containers or pots, on porches, and on roof-tops. Plastic five or six gallon buckets make excellent containers for growing food. Hydroponics gardening sounds complicated, but it really isn't, and information is readily available. It's even possible to raise fish in a barrel or a tank -- it's possible to raise as much as five tons of trout in a year in tanks in a space the size of the average basement (20 X 30). An indoor fish farm like this works well with hydroponics; as the water is changed in the fish tanks, it is circulated into hydroponics to feed and water the plants.

The community gardening movement, which is well established in all parts of the country, can provide expert assistance in starting and maintaining a garden, empowering people to join together to create community gardens. One city provided land in street medians for such gardens; vacant lots, church properties, and other open spaces are also used. During the siege of Sarajevo, seeds were smuggled into the city and gardens were planted everywhere.

Be sure to store seeds, and get extras.

About 10% of the world's food is already grown in cities. The experience of cities in crisis suggests that the amount of food actually produced in a given city can be expanded very rapidly, the limiting factor usually being seeds. People planted gardens in Sarajevo, even as snipers fired and shells landed.

In Indonesia, which has experienced major disruptions over the past year, people in cities have turned athletic fields and golf courses into gardens. Although cities may have high density populations, there is also a lot of open space that can be turned into gardens (medians in streets, parks, lawns of homes and public buildings, roadsides, golf courses, vacant lots, etc.) Flat roofed buildings can support bucket or other container gardens, and containers can also be placed on porches, sidewalks, streets, hillsides, or other areas where regular gardening is not practical. Old tires (which are in plentiful supply in most cities) can be turned into containers for growing crops.

Salt cured and smoked country hams will keep without refrigeration, even after slicing. If a bit of mold develops, simply cut it off. Such hams should always be cooked before eating. Some people find the taste a bit salty; recipe books suggest soaking the ham slices in water overnight to

draw out the salt.

Hard cheeses can be preserved by coating of with wax. Dip the cheese into a salt solution (salty enough that an egg floats) and place on a rack to dry overnight. On the second day, rub with salt and leave on the rack. Do this again a third day. By this time a rind should be developing. If it feels dry and smooth, continue to the waxing; if not, rub with salt and let dry another day. Apply 3 or 4 coats (either with a brush, or by dipping into melted wax), letting the wax dry between each coat. Wrap with cheese cloth, and continue the process of dipping and drying until several layers later the cheese is completely covered with a smooth wax exterior. It will continue to age inside, but remain good. If you do find mold on hard cheese, simply scrape or cut it off and use the rest of the cheese. Paraffin wax is the best for this.

In situations of food scarcity, fats and oils are often the first foods to disappear, and we miss them a lot when they're gone. Olive oil stores virtually indefinitely without refrigeration (keep it cool and dark, don't refrigerate), and has the advantage of being a healthy choice. Hydrogenated shortening in a metal can stores for a very long time, but many people have health concerns about it (although in the author's opinion shortening is necessary for pie crust!). Note that usually only the larger sizes (five or six pounds) are sold in metal cans, most of the smaller 1 and 3 pound cans are a waxed cardboard.

Another alternative is clarified butter. It will keep indefinitely without refrigeration, and is easily made at home. Put butter in a pan (do about five pounds at a time), and melt it slowly over low heat. After the butter melts, allow it to boil slowly until the solids collect together in the bottom of the pan. The butter oil will be clear and golden. Sometimes a bit of scum floats up to the top; skim that off. Ladle off the clarified butter, leaving the solids in the bottom of the pan (you can pour the remaining bits of butter oil and solids through a cheese cloth to extract all the butter and leave all the solids behind).

Pour into a clean mason jar (boil the jar and lids for 10 minutes, and leave covered with hot water until you are ready to fill with the hot butter oil. Cap tightly and store in a cool and dark place (if your pantry has a window, put the jars in paper bags). If you have lard, you can clarify it by this same method. For both lard and butter, clarifying greatly reduces the cholesterol content of the food without compromising taste. When substituting clarified butter for regular butter or margarine in a recipe, reduce the amount needed by about 20%.

Generally, salt cured/smoked country ham, olive oil, clarified butter, and cheese are not considered second class foods. All are used in gourmet cooking and are important basic ingredients in many recipes..