

Welcome to *Living Essentials*. We're talking about the basics of food storage. Maybe you already have lots of food stores up, or maybe you're just getting started. Either way we'll share some helpful tips about how to gather it all up and where to store it. Stay tuned.

**Rebecca:** Welcome to *Living Essentials*. I'm Rebecca Cressman and today we're talking about the basics of food storage. Joining me today are Lisa Harkness and Leslie Probert. They're both authors and lecturers on food storage and emergency preparedness. Welcome to both of you. And we have some great ideas we're going to share with our audience today. But before we go into all the basics of food storage, tell us why it's so important Lisa?

**Lisa:** Well we live in uncertain times and there are many situations in which we would find a store or supply of food very beneficial. Think about situations such as natural disasters like hurricanes or floods or earthquakes, or severe weather like ice storms or even droughts, then there's major power outages like we've seen recently. People even lose their jobs and they're out of work for several months. And then there's sickness and injury and disability. In all of these circumstances, having a supply of food would be a great help. It would provide comfort and some stability when getting to the grocery store either wasn't economically feasible or physically feasible.

**Rebecca:** Great, thank you for that. Leslie, many members of the Church of Jesus Christ of Latter-day Saints have heard for decades the importance of having a years supply of food storage for their family in case of an emergency and yet many of us have not accomplished that task. What are some of those common barriers that we're all encountering as we try to make sure we have what we need?

**Leslie:** Getting a years supply of food is a big job. Some people don't know where to start. People are concerned about the cost, and where they'll store all that food. Some people don't know how to cook with it and they're worried that it won't taste good. Good information helps people get around these barriers.

**Rebecca:** Okay, then let's give them some of that great information. We have samples here right now. Lisa we've got wonderful displays of grains but, in general, besides grains, what are some of the other general types of food we should be storing Lisa?

**Lisa:** Well, you want to look for food that is inexpensive and space efficient to store. You also want food that's highly nutritious and that has a long shelf-life. By that I mean food that can actually sit on the shelf without refrigeration for quite some time. Now foods that meet all of these criteria are: grains, legumes, oil, powdered milk, sugars, salt, and some water.

**Rebecca:** Now are there some actual specific health benefits from the types of foods that we choose to store?

**Leslie:** Yes, actually. Whole-grains and legumes are at the top of the list of foods recommended for our day. Currently in the United States we have serious health concerns with heart-disease, cancer, obesity, and Type II Diabetes. The soluble fiber in oats, barley, dried beans, peas, and lentils, has been scientifically proven to lower blood cholesterol. The fiber in whole-grains significantly lowers the risk of coronary heart-disease and type II diabetes. Let's talk about cancer for a minute. One-third of all cancer deaths is related to nutrition, exercise, obesity, and other lifestyle factors. The American Cancer Association has said that beans are especially rich in nutrients that may protect

against cancer and they're a low fat, high protein alternative to meat. So this is a huge argument for not only storing these foods, but eating them now.

**Rebecca:** Which has been one of the concepts that has always been taught to me, is store the type of foods that you will eat, and maybe some of us need to go back to eating the food that we're storing in order to get back to healthy lifestyles. Earlier I started to kind of point us in the grain direction because I think when I'm thinking of food storage, one of my first thoughts is the grains. Making sure we either have the beans there or the rice or the grains. And there is a lot Lisa, introduce us here.

**Lisa:** In the grain category it is recommended that you store 300 pounds per person for a years supply. Now there are a lot of options in the grains like you were saying. You could add to the wheat, you could add rice, macaroni, some barley, pasta, lots of different things in this category. When it comes to wheat though you have two nice options - there is a hard white option and a hard red wheat. Both of them store 20 years or more. Both of them are very nutritious and have about the same nutrition. However, the white wheat, this one right here, makes a lighter colored and a lighter tasting product and it has become very, very popular today.

**Rebecca:** So when we see breads that are made out of light wheat, this is what they're referring to? And this is the typical red-grain? Now what would you typically use if you're trying to cycle this through, Leslie, what would you use recipe-wise, these red-grain and lighter-grain?

**Leslie:** It's just so easy to grind wheat up, either grain, and use it as you would regular white-flour in the usual kinds of foods that we eat everyday, bread, cookies, pancakes, muffins. When it comes to cooking barley, barley takes about 45 minutes to cook so you can throw it in any super stew and just let it cook along with the rest of the ingredients.

**Rebecca:** About 45 minutes is what you're saying with the barley? If anyone has not seen barley before, this was the first time for me, try to recognize that. But it is also a member of the grain family and very nutritious. And 45 minutes is about the same length as long-grain rice.

**Leslie:** Long-grain rice is only 20 minutes.

**Rebecca:** It feels like 45 to me. We have some samples of grains, that's one type of food we're encouraged to store as well, but what about legumes?

**Lisa:** Well, in the legume category, it's recommended that 60 pounds would be sufficient for one person for a year and again, in this category you want to store a variety of legumes. You've got things like your kidney beans, you've got split-peas, you've got white beans and pinto beans. So there's a lot of different things that you can do in this category to suit your tastes and your needs.

**Rebecca:** In terms of tips for cooking the legumes, you included the beans, and we have an example here of the split-peas. Any tips for cooking we have for these?

**Lisa:** Yes, you can use either in this area. You can store the dried beans or the canned beans. If you store dried beans you need to know that they will need to be hydrated. They're a little hard to taste. This is so easy to do. All you do is soak them for a little while beforehand and then you cook them and once they're cooked they can easily be added to soups and stews and casseroles and even some baked goods. Now if you decide to store canned beans like these here instead of storing them dried and you don't want to go through the soaking and cooking process, you can store these and just store 2 1/2 times the dried amount. Now there's one more alternative here. Some people don't like

beans at all or don't want to eat them very much. And if that's you, what you can actually do is store some canned meats. They can switch out pound for pound with your dried legumes.

**Rebecca:** Because they're both protein-rich

**Lisa:** That's right. So you can store things like canned roast beef, canned ham, canned turkey or chicken, instead of your beans and legumes. Remember you switch them out pound for pound with your dried legumes.

**Rebecca:** That's a great idea. Now we need to have these legumes, we need to have the grains. We also need powdered milk. Introduce us to what we have here on display.

**Leslie:** The original recommendation for powdered milk was 75 pounds per person. However with the brands of milk that are available today, and the change in mixing instructions, it's possible to store 50 pounds per person to get the recommended three cups of milk a day. There is another option. It is possible to store as little as 16 pounds of powdered milk if you increase the grains to 400 pounds per person. Currently there is research ongoing about whether this option provides enough calcium in the diet. Certainly it does not for growing children and pregnant and lactating women. Milk has a shorter shelf-life. It lasts between 3 and 5 years. Some will go as long as 10 years, so it's really important to store a kind of milk that you like and to rotate it so it doesn't go to waste.

**Rebecca:** Now I use a lot of the nonfat dry milk at my house in all of the cream soups that I have. Anytime I make a cream of broccoli or cream soup, this is kind of what we use, but do you actually have tips that you can recommend, because some of us might not exactly know, some of the kids are not sure they're thrilled with instant milk. But what's your advice?

**Leslie:** Well you will use some milk, some dried milk in your cooking and baking but by far, the largest use of dried milk will be in drinking.

**Rebecca:** So as Leslie mentioned, dried milk is the most expensive and also the most wasted item in food storage, so you really want to taste a variety of milks before you go buying anything in larger quantities so that you're sure that you'll drink the amount that you're actually storing. And how long would a typical container of nonfat dry milk last?

**Lisa:** Well, like she said, most brands will recommend 3-5 years. But some will actually go and be quite fine for 10 years or more. And you'd be surprised with the quality of dried milk that there is on the market today. There is some really great tasting powdered milk so it's worth experimenting.

**Rebecca:** We've also tried whey, dried whey, and liked that as well. We also have sugars here and people might be surprised that we actually have the sweeteners and the sugars here as part of our staples, but let's talk a little bit about why we need to have those in our food storage as well.

**Leslie:** Sugar is really important and it's a good way to get things to taste good and people don't realize that you can store a variety of sweet tasting foods. Besides storing honey and sugar you can include maple syrup, jams and jellies, fruit drink mix, and flavored gelatin.

**Rebecca:** Wonderful. We also have some examples here, Lisa, of the different types of oils that we need to be storing.

**Lisa:** In this category you're going to want to store 20 pounds or 10 liquid quarts of oil. Of all the different types of food-storage things we've talked about so far though, oil has

the tightest shelf-life. It stores for 1-2 years if in a cool, dark place. There is a nice thing to note though about this. If you're worried about getting through all your liquid oil before it goes bad you have an option of putting some of that recommended amount into shortening. Now Crisco brand actually says that their shortening, if stored in a cool dark place unopened will store indefinitely. So that means you could put some of the recommended amount like I said in shortening, and then just worry about getting through your liquid amount before it gets bad.

**Rebecca:** That's a great idea.

**Lisa:** Isn't that great? The other things that fall into this category would be things like mayonnaise, peanut butter, and salad dressings--all would count for oils as well.

**Rebecca:** All of those contain oil in there as well? Now the very front of this display we have some other basics that are recommended for every family's storage area. We've got salts, and we also have some other vitamins, and interestingly enough garden seeds. Let's talk about those.

**Leslie:** Salt is important in the diet. And it's recommended that you store 8 pounds per person. It's a good idea to get Iodine salt to ensure that you have enough iodine in your diet. Multivitamins also ensure that we have the needed vitamins and minerals and garden seeds are a really great idea. It's good to practice growing vegetables from seed and be using fresh produce out of your very own garden right now.

**Rebecca:** How long would an envelope of seeds actually last?

**Leslie:** Seeds from different vegetables last a varying amount of time. So to keep that all simple which is our bottom line, we just rotate seeds every year. You can buy them on sale and then plant them the next year and buy some more and that keeps it simple.

**Rebecca:** Wonderful, that's great. Another basic element in our food storage is the water. And what is the basic recommendation for each family member?

**Lisa:** Well it's impossible to store a year's supply of water right? But a two-week supply which is 14 gallons per person is recommended. Now this is different from and in addition to a 72 hour supply which is 3 gallons per person. So the 14 gallon--2 week supply would have 7 gallons for cooking/drinking, and 7 gallons for hygiene. And of all the water to store, believe it or not, your municipal or city water is the safest and the cheapest water to store.

**Rebecca:** Now there's also been some new tips that have been out from national agencies about emergency preparedness related to water.

**Lisa:** Yes, there are, and they help to dispel some myths that are circulating around. The American Red Cross is now saying that if you store city or municipal water, you do not need to pre-treat it with bleach before you store it. In fact the American Red Cross and FEMA, the Federal Emergency Management Agency actually say that if you do pre-treat water with bleach, it is superfluous, and does not extend the shelf life of water.

**Rebecca:** Interesting. That's important to note because that's a big difference and I think one of the hallmarks of why we're always so afraid to drink the containered water because it tasted so much like bleach water that's been out there.

**Lisa:** Now one more thing, if your tap water comes from a well, you will need to follow what your local water authority tells you to do for pre-treating water, so follow what they say.

**Rebecca:** Go ahead and contact your local water authority and they'll have the information you need. You have lots of different containers you brought today. Show us samples of what we can use for storing water and the differences between.

**Lisa:** There are safe and unsafe water containers. Unsafe water containers would be things like water beds or bleach bottles or milk cartons because they tend to disintegrate over time, but safe water containers would be things like 2 liter soda pop bottles, food grade plastic containers or even larger barrels. The American Red Cross is suggesting that we rinse all of our containers with a diluted bleach solution before actually storing water in them. During Y2K we saw lots, because of the concern there, we saw lots of used soda pop syrup barrels on the market. They were very inexpensive and many people bought them, but they are not recommended for storing drinking water because the sugars from the syrup get into the plastic and they provide food for bacteria over time. So when storing that 2 week supply, that 14 gallons, and you may need quite a bit if you have a family, but you're going to want to have maybe a larger, new container, or new barrel.

**Rebecca:** Speaking of barrels, I actually store something that you don't have represented here. Its Mylar bags with a spigot and they come in a cardboard box. I actually get it from a water company and they stack quite nicely. They're also made for recycling purposes quite nicely because we camp a lot and we can just take this cardboard Mylar bag to the campsite and take it with us. Are there things we should know about Mylar and its advantages or disadvantages?

**Lisa:** That's a great thing to have, and if that's what fits your space and your particular circumstance, that's great. One thing that's critical to know about stored water is what all the national emergency authorities are saying now. When talking about National emergency authorities, we're talking about people like the American Red Cross and FEMA and Homeland Security and these types of people. All of them say that you need to change and replace water every six months and not every year as was previously the thought.

**Rebecca:** Great, and that might become very important when we start talking about these containers and what would be great for those two week supplies, but we could actually use these barrels for a longer period of time and so the rotation. About how much water is actually stored inside?

**Leslie:** That's probably a 15 or 30 gallon; these are about 5 gallons or so. Now in your 72 hour supply you're going to want to store containers smaller than this barrel and that's where a 2 liter pop bottle would be ideal because you can just pick it up and take it with you.

**Rebecca:** The portability is for the 72 hour kit. And then this again would need to be drained every 6 months and refilled again. Great! Now we just took a look at the basics that are recommended for food storage. But anyone who cooks knows that you actually need to have some other additional elements to make it very palatable and simple so we have some samples here of some of the other basics that are important for a good kitchen. So let's start here with what you've brought in terms of leavening products.

**Leslie:** It's really important to store leavening like yeast, baking soda, and baking powder and also bouillon and spices. All of these things are important for adding variety to the kinds of things that you can cook with the basics.

**Rebecca:** Also when you talk about basics. One thing that is kind of easy to spot on all of the goods that you brought today, are the date of purchase that you have added to your

stored items. Very important. Just the other day I pulled out some yeast and was making some bread and couldn't get it to rise and found out through the imprint that it was about five years old. Now what about the bouillon, why is this considered a basic?

**Leslie:** Bouillon is really wonderful to have in simple soups that you can make with beans and also in stews and other kinds of dishes. It just really expands what you can make.

**Rebecca:** Okay so these are the basics for baking. What about canned goods?

**Leslie:** Canned fruits, vegetables, and meats also add really important nutrition to basic food storage and of course they would expand again really greatly the kinds of things that you can fix with basic food storage.

**Rebecca:** All right, let's talk about the shelf-life of a typical item that's canned.

**Leslie:** I want to talk about the commercially canned food here. Canned food experts and the USDA all say that this food, commercially canned food, is safe to eat almost indefinitely as long as the can is not dented or bulging. They suggest that for optimum flavor, texture, and color, that canned foods be used within about 2 to 2 1/2 years, however the Canned Food Alliance which represents a number of canned food companies, says that the nutrition in commercially canned food will last well beyond 2 years.

**Rebecca:** What about the shelf-life, though, of some of the other mixes we might find in our pantry, or store in our pantry? How long does an average, like stuffing mix for example, would we expect that, obviously not indefinitely like a canned good?

**Lisa:** Well, you can store these ready-to-make things like muffin mixes and soup mixes and cake mixes and those kinds of things but it will have a shorter shelf-life like you said, usually about six months or so. So if you decide to build up a year supply of these ready-made or ready-to-make things, you have to know that you're going to have to get through those on a regular basis and constantly be using those. Plus, that's going to take up a lot more space because of all the packaging and a year's supply of those ready-made mixes are going to be a lot more expensive to store.

**Rebecca:** Good, you also brought up a point which is very surprising to me and I think we kind of need to go over it. One of the key sources of protein that I have always stored at my home is tuna and yet it's not maybe the optimal choice. Tell us about that.

**Leslie:** Tuna is actually good to have in food storage. The interesting thing is that it really doesn't have a shelf-life beyond two years. Tuna can develop some very strong flavor and texture alterations after that two years so that's important to keep in mind.

**Rebecca:** And comparing that for example to a can of ham, or chicken, how long does that last?

**Leslie:** Well, the guidelines that we mentioned previously for all canned foods really apply to those, they'll last 5 years or longer as long as the can isn't dented or bulging-- they're safe to eat.

**Rebecca:** Well you're speaking also of cans with dents and bulges. What are the optimal recommended containers to use for canning fruits and vegetables or for storing fruits or vegetables or meat?

**Leslie:** Well you would want to store commercially canned meat or of course if you're bottling it you'd need to be sure to pressure cook it. That's a really important thing to be aware. Let's talk about packaging. The packaging of your food can greatly affect the shelf-life of that food. Moisture, light, and air, all adversely affect food, so packaging that

is airtight and opaque is really the very best to get your food to last a long time. Having a lack of oxygen inside the container also will prolong the food. So you have a tin can as an option for dried food or you can get dried food or actually put it in these packages, these foil pouches and you put a little oxy pack in them which absorbs the oxygen, which causes the food to last longer.

**Rebecca:** Am I correct also that these Mylar bags or foil bags help to protect the items from light which is one of the items that destroy the vitamins?

**Lisa:** That's exactly right. You can get food in buckets and it is important to ask for heavy white buckets so that that very issue of light doesn't trouble the shelf-life of the food inside. These are also packed with an oxy pack or two inside to absorb the oxygen. It's really important to request lids that have either a gasket inside here or some sort of rubber that's been stamped inside so that the bucket is airtight and will cause the food to last for longer time.

**Rebecca:** We have an email from one of our viewers that I'd like to share with you and let's talk a little bit about it. This is Elizabeth from Plainview, New York. "Will you please talk about the differences between west coast storage and southern and east coast storage. High humidity levels can make a big difference." And I'll echo that, it's not just altitude we need to worry about, but the humidity differences. So Lisa let's talk about that.

**Lisa:** Well no matter if you live in a humid climate or a dry climate, food that is stored properly will store for a very, very long time. However in moist climates, more humid areas, you want to make very certain that your food is stored off the floor just a bit and slightly away from the walls so air can circulate and you don't have condensation or mold growth. That's very important. Also in moist climates, once the containers are opened, as well as in dry climates, you have about a year to get through that food. But as people that live in moist climates know, you've got to keep that food sealed in an airtight or moisture-proof container. So if the containers you're using aren't able to have an airtight lid put on them, you'll need to transfer them to a moisture-proof, airtight container. Now moist climates too, can use these foil packages which might be a great option. Where there's a lot of humidity sometimes the metal cans will rust a bit and that's a concern, so putting them in these foil pouches would help stop the rusting problem.

**Rebecca:** That's a great idea. Let's talk about rotation because I think that's one of the key elements. We talked about barriers, about what keeps us from wanting to get our food storage. Sometimes we feel like we don't know how to organize it or rotate it. Some quick tips on how we should do that?

**Leslie:** Rotating really comes in two parts. The first part is the physical organization of the food that you store. It's important to date every package you buy and then whether you stock food on shelves or on the floor, you add new packages of food to the bottom of the stack in the back and keep the older ones to the front so that you will use those packages. It's also important to consider how long it will take your family to get through a container. That will influence what size of container you buy the food in. Sometimes people, when they buy food in a bucket, of course, it will cost more because there's more food in the bucket, and they'll say, "I'm not going to open that bucket; it cost a lot of money and so I'm not going to use that food." So if you know that you're that kind of a person it would probably be better for you to buy food in a number 10 can so you're more willing to open it and experiment with the food and use it. The second part of rotating is

simply that we need to be eating the food that we're storing. It's really important to taste some of everything that you buy in bulk so you're sure you like it. It's also a great idea to serve food storage meals to your family. And let them vote on the meals they would like to eat. That way you can store the extra foods that are needed to get the basics to taste good in that recipe. If you have a pool of good-tasting recipes and you will eat food storage meals two days out of a week, you can have an entire year's supply of food storage rotated in just 3 and a half years.

**Rebecca:** That's wonderful advice, twice a week? In terms of storage as well, just quickly, spices – about how long would they last? We talked about wanting to have these in our meals, but how long would we expect spices to last?

**Leslie:** You know, I don't worry so much about spices. The bottom line for both of us is to keep it simple and so, we just go through our spices and if they're getting a little old, you need to add a little more, you throw it in, but we don't really keep track of dates for spices.

**Rebecca:** As long as you have it in the pantry, you'll be just fine. Speaking of the pantry because a lot of us live in many different types of homes, is there anything we should be keeping in mind as to where we should store the food? I'm lucky enough to live in a house with a basement, with a cellar. What do you advise Lisa in terms of what's the best spot to store food for the longest period of time?

**Lisa:** Well, there's all kinds of places you can store food whether you have lots of space or limited space. You'd be surprised how much food storage a typical hall closet can hold. I know people that have to put their food storage underneath their beds, even using their food as the bed base. Other people I know with limited space actually make these lovely bedside or chair-side tables using boxes of food as the base with a piece of material over it and then cover it with a piece of wood, glass or something. Even a bookshelf can hold an amazing amount of food. If you're lucky enough to have some garage shelves, some of those heavy duty things, they can hold a lot of weight and are a great option.

**Rebecca:** We have just another minute or so left in the show but before we go, because we want people to watch this and listen to this and think, I'm going to start right now doing this, what are some quick tips, to begin that food storage?

**Lisa:** Have a plan and I think there's a plan on your website. Start with a plan, in 20 minutes you can have it planned for and you'll know right where to spend your money and you won't waste it.

**Rebecca:** All right, any other quick tips Leslie?

**Leslie:** I think it's just really important to get going. As you're acquiring it, you can think in terms of just getting a week's supply and then build up to a month or two until you have a year's supply. So you set aside some money, make a commitment to be buying food storage every week.

**Rebecca:** Well we appreciate you bringing your expertise. You have brought so much to our community and we appreciate you sharing that with us here on *Living Essentials* and again, we'll have a lot of this information on our website as well. Thank you so much for watching us. Be sure to join us next time on *Living Essentials*.

*For more information on this and other episodes of Living Essentials or to order a copy of the program, visit us online at [byubroadcasting.org/livingessentials](http://byubroadcasting.org/livingessentials)*

*There you'll find helpful hints and additional information that will enrich and simplify your everyday life.*