

Start Sprouting!!

Put some life in your food storage...and everyday meals!

By Richard Nielson and Deanna DeLong

Sprouting is so simple that a four year old can do it and so complicated that an adult never gets around to it. Sprouting really isn't that complicated. Once you begin sprouting, you'll wonder why it took you so long to get started! If you can squeeze a 3 minute daily commitment to sprouting out of your busy life, you'll always have a fresh supply.

Why Sprout?

There are lots of good reasons why sprouts should be part of your daily meals and your food storage plan. Sprouts taste good. They're nutritious. They're fresh. Sprouts can be grown right in your own kitchen, providing wholesome and nutritious salads and main dishes. They can be added raw to almost any dish and add great flavor and texture. You eat sprouts at the perfect stage of maturity, and they are always fresh. Because they're grown right in your kitchen garden, they haven't been in cold storage or on the supermarket shelf, losing valuable nutrients.

Viable seeds have stored nutrients which multiply when sprouted. Sprouts achieve their maximum nutrient density after the first 2 to 5 days of growth. They are teeming with enzymes which continue to increase during this high energy growth spurt. Since the plant requires mega nutrients to sustain its life, the sprout is also replete with proteins, vitamins, and minerals required for the development of the mature plant. The young and tender plants are easy to digest and their cell walls readily break down. Sprouting also produces nutritious food and treats for your animals, birds and even fish.

They derive the same benefits as do people. Sprouts are a must for a food storage plan, because they provide the fresh vitamin rich produce so often lacking in a home food storage system. If a trucking strike or disaster curtails commercial food distribution, sprouts can give your family the nutrition they need.

You'll also find sprouting an economical way to stretch your food budget. One-third cup of seeds will yield over a pound of fresh sprouted greens at a cost of \$.25 to \$.30! For example, alfalfa sprouts increase in volume over 32 times from seed to sprout. If 3.5 pounds of alfalfa seeds cost \$13.95 and yield over 128 pints of fresh sprouts, that's only \$.11 a pint! If you're buying those same sprouts at the store, the little one pint containers cost at least \$.99.

Sprouting is easy. The seeds do all the hard work. All you have to do is water them. A minute or two twice a day is all it takes to keep them growing and healthy. Sprouts can be grown anywhere - when you're backpacking, boating, or on vacation. Start a fresh batch every morning, so that you have a fresh supply. It's better to grow them in small quantities and eat them fresh than to grow a larger quantity and store them in the refrigerator. How much you sprout depends on the size of your family, the taste you develop for sprouts, and your commitment to nutrition. Generally, a cup to a cup and a half per day per person is a good start.

As you become accustomed to eating sprouts, you'll eat more sprouts! Many people find that as they increase sprouts in their diet, they eat fewer unhealthy foods. Since the body is receiving a healthy daily dose of nutrients, the brain lessens the body's cravings for

excessive eating. Sprouts are generally associated with healthy weight loss for those who are overweight. Experiment to find out how much your family eats. Try sprouting a variety of seeds and harvest them at different stages to determine which you like best. You'll discover delightful ways to incorporate them into your family's meals. Since there are dozens of good tasting sproutable seeds, there are dozens of different flavors, shapes, and textures to add to salads, sandwiches, and other dishes.

Selecting Seeds

All types of seeds will sprout as long as they have a viable germ. However, not all sprouted seeds are good to eat. It is best to buy seeds selected and tested specifically for sprouting.

Roasted or salted nuts, seeds, grains, and beans will not sprout. Some hulled seeds sprout, but have a shorter seed shelf life. Raw almonds and peanuts can be successfully sprouted without their shells. In general, most nuts are not recommended for sprouting because they take weeks to germinate and may not taste very good when sprouted. Large beans such as black, red, navy, lima, pinto, and kidney beans will all sprout but don't taste very good in the raw sprouted form because they are so high in starch. When cooking beans, try soaking them and then sprouting them for two days prior to cooking to expand the vitamins and proteins, lessen gas formation, and improve flavor.

Some grains are good sprouters. Hard and soft wheat, rye, and triticale all sprout well. Oats, barley, millet, and brown rice will sprout, but are not very flavorful. Rice is impractical because it has such a long germination period.

Organic versus non organic is a personal choice. If

they are certified organically grown, they come from plants which have not been exposed to chemical fertilizers, pesticides, or herbicides.

The best time to purchase seeds is in the fall when they are newly harvested. Seeds used in sprouting should be uniform in size, without broken or chipped seeds. Damaged seeds will not usually sprout, and may spoil the batch. The color should be vibrant. Faded or discolored seeds may indicate that the seeds are damaged, immature or old.

Seeds packaged especially for sprouting are usually the best value. They are packaged in reasonable quantities, have been examined for insect damage and debris, and should have been tested for sproutability. Bulk seeds available from other sources such as health food stores, feed stores, grocery stores, or mail order may or may not have been sprout tested.

Caution: Do not sprout seeds that have been treated for outdoor planting. They are not intended for human consumption and have been treated with pesticides.

Storing Seeds

Hard, food grade, non permeable plastic is the best packaging for storing seeds. Glass containers are also excellent, but are easily broken. Plastic, paper, or cloth bags are not insect proof and absorb odors and moisture. Insects eat the germ, which kills the seed. Metal containers tend to rust on the inside with high moisture seeds, and may rust on the outside when exposed to high humidity.

All stored seeds should be kept cool, dry, and dark. Refrigerator storage (35 - 45 degrees F) is ideal for the longest shelf life.

Some seeds such as peanut, sesame and sunflower have a high fat content, a shorter shelf life, and must

be stored in the refrigerator to prevent rancidity. Even under ideal conditions, these seeds have a storage life of less than one year.

Moisture content of the seeds also affects the shelf life. Crops vary from year to year in their moisture content, depending on irrigation practices and weather. Those with lower moisture (less than 10%) have a longer shelf life.

When seeds are frozen, they must be sprouted soon after removal from the freezer. Thawing seeds out is Mother Nature's signal to the seed that it is now time to germinate.

Some seeds are stronger than others and can withstand temperature changes and lengthy storage. Others are quite delicate and will lose their ability to germinate when exposed to extremes in temperature and moisture or if not stored properly. The more dense the seed (the higher the weight per volume), the longer the shelf life. In general, vegetable seeds have a shorter shelf life than grains.

Seed shelf life is dependent on:

- * Moisture content of the seed
- * Moisture content of storage atmosphere
- * Exposure to light,
- * Storage temperature.

Some seeds should not be stored with other seeds. Gases produced by some seeds kill the germ in other seeds. Onions, for example, emit gases which can kill the germ in other seeds. Only compatible (similar moisture content, germinating time, and density) seeds should be stored together.

One way to lengthen seed shelf life is by aerating seeds on a yearly basis. Pour the seeds from one container to another. Since the carbon dioxide produced during

storage is heavier than oxygen, it won't aerate just by opening the lid.

It's fun to mix seeds, as long as germination times and shelf life are similar and the sprout flavors blend. Try mixing mung, Chinese cow pea, wheat, triticale, lentils, fenugreek, and peas. This mix is a nice combination because it contains complete protein, vitamins, minerals, and it tastes good. Go easy on the fenugreek because of its bitterness. Another good mix is alfalfa, radish, cabbage and clover. The zing of the radish and cabbage is mellowed out with the alfalfa and clover.

Sprouting Equipment

There are many types of commercial and home made sprouters. A well-designed sprouter allows sprouts to grow vertically and develop to their full length. Overcrowding and poor ventilation results in rot, mold and fungus growth. There should be sufficient surface area so that seeds do not clump together and produce the highest yield. A well-designed sprouter is easy to clean, simplifies harvesting, provides sanitary drainage, and has a lid for refrigerator storage. An attractive container is a plus, since it may be spending a lot of time in your kitchen.

Jars are traditional and cheaper, but not the best. Sprouts grown in a jar expand and fill the jar, but do not have proper aeration. Healthy growth is inhibited because the sprouts stay jumbled together. The scummy residue left on the sides of the jar is putrefaction. Sprout bags do not aerate well and sprouts grow into the bag fibers, making them difficult to remove. Sprout baskets are unsanitary, porous, and may harbor bacteria. A well designed tray sprouter is well worth the investment for convenience, better tasting sprouts, a higher yield, and a longer shelf life.

How Seeds Sprout

Sprouts need sufficient air, the right amount of moisture, and proper drainage. Seeds need to be soaked in water so that they expand. The sprouting process begins as the seed absorbs sufficient water to activate the germ. Sprouts are unique in that they absorb nutrients from the water. They can also absorb contaminants. Your sprouts will taste better and be healthier when sprouted in pure, clean water.

Most seeds should be soaked for 10 to 12 hours. In cold weather, it may be possible to soak seeds for 16 to 18 hours without fermentation. In hot weather, longer soaking can result in fermentation.

Hard seeds will be very slow to sprout or may not sprout at all. Hard seeds may result when seeds are harvested prematurely before the germ has developed. Frost damage and unusual weather conditions may also result in hard seeds. Mother Nature produces some hard seeds to insure long term perpetuation of the species under all kinds of circumstances. Until they are soaked, hard seeds cannot be differentiated from other seeds. Check seeds carefully after soaking and remove any hard seeds that have not swollen and absorbed water, so that you do not damage your teeth. Don't worry about small seeds such as alfalfa, clover, radish, cabbage, and onion. Transfer the seeds to a sprouting container, cover with a damp cloth to retain moisture., and set in a warm place. Sprouts grow best in an even temperature of 78o F. As the temperature varies, the sprouts will grow slower or faster. In very hot climates, soak seeds in cool water, rinse in cool water, and use a cool damp towel to cover the sprouter. In cold temperatures, rinse in warm water and use a warm damp towel to cover the sprouter.

Start_Sprouting_2004.txt

All sprouts develop best and are sweetest when grown in the dark. They can also be grown in indirect light, but too much direct sun can overheat sprouts, especially in summer. Whenever they are exposed to light, the photosynthesis process begins, producing chlorophyll which turns the sprouts green. Greening is a matter of personal preference. If you like green sprouts, let them sit in indirect light for 3 or 4 hours. Seeds contain natural toxins which are deterrents to insects and other competing plants. Soaking seeds initiates the release of these natural toxins and rinsing them is necessary to remove the toxins from the sprout. Rinsing also removes fungi that can cause mold and mildew. Use fresh rinse water each time. Rinse seeds vigorously every 12 hours. Jars or sprouters without adequate drainage and aeration must be rinsed every 4 to 6 hours to decrease risk for mold. Never use hot water because it will reduce or even kill germination. Drain the sprouter thoroughly after each rinsing.

Harvesting and Storing Sprouts

Sprouts should be harvested when they taste the best. Some people prefer longer, more fibrous sprouts and others like very tender sprouts. Harvest times may vary depending on the seed, amount of watering, growing temperature, and season. Tasting your sprouts as they grow will help you determine the flavor most appealing to you and your family. Most sprouts are ready to eat in two to three days.

Try to grow only the sprouts you'll eat. Harvest your sprouts by firmly grasping their tops and jiggling the roots free. Refrigerate any left over sprouts to slow their growth. Give them their last rinse at least six hours prior to placing them in the refrigerator.

Start_Sprouting_2004.txt

As the sprout grows, the outer skin breaks as it expands. Repeated rinsing softens and loosens the skin. In most cases, this outer skin is edible and adds fiber. Remove this transparent outer skin from hulled sunflowers. If you are sprouting in a basket or sprouter which allows the roots to attach to the sprouter, you can agitate the sprouter upside down in a pan of water to remove skins. Sprouting unhulled varieties such as buckwheat and sunflower requires growing them to longer stages and picking the hulls off by hand. Some sprouts keep well in the refrigerator for one to two weeks after harvest. Do not freeze. Storing sprouts in plastic bags tends to sour the sprouts. Signs of deterioration are bad odor, soft or soggy texture, mold, or darkened sprouts. If some sprouts in a batch go bad, throw out the whole batch and start a new crop.

Now for the Best Part....Eating Sprouts!

Sprouts are most nutritious when eaten raw. Crunchy yet tender sprouts are easy to digest, and vitamins are highest when they not exposed to heat. If you are cooking them, minimize cooking time by adding them last. Sprouts in baked goods will lose more nutrients. Try alfalfa, buckwheat, sunflower and wheat sprouts in fruit drinks. Lentil, mung, sunflower and garbanzo sprouts are a tasty addition to omelets. Stir fry mung, soybean, lentil, garbanzo and sunflower sprouts. Wheat, buckwheat, alfalfa and sunflower sprouts make a fun addition to pancakes, waffles and quick breads. Use wheat, alfalfa, sunflower, buckwheat, rye or oats in yeast breads.

Once you begin sprouting, you won't stop. There's no substitute for the fresh flavor, wholesome goodness, and variety that sprouts will add to your family's

meals!

Start_Sprouting_2004.txt