

Sprouting at Home

Fresh organic vegetables every day from a
square foot of counter space

Why Eat Sprouts?

Sprouting seeds into fresh sprouts is a very good way to obtain fresh food that is free of pesticides and other chemicals used in agriculture. It is a very simple procedure that requires very little time, is inexpensive, and provides fresh from the garden food year around.

Sprouts are Nutritious - Seeds are packed with nutrients and the sprouted seeds are even better. As the sprouts grow enzymes, proteins (amino acids) vitamins and other nutrients increase.

The use of sprouts as a food source for man is as old as man's use of seeds. It is only in recent times that science has begun to unravel the chemistry of a sprouting seed, and its potential significance in both human and animal nutrition. Although a dry seed is characterized by a remarkably low metabolic rate, just moistening of the seed can trigger tremendous and complex changes which consist of three main types: the breakdown of certain materials in the seed (i.e. breakdown of complex fats, starch conversion into simple sugars, breakdown of protein into amino acids), the transport of materials from one part of the seed to another and the synthesis of new materials from the breakdown products formed. The only substances normally taken up by the germinating seeds are water and oxygen. (Research by Embry and Wang [Analysis of Some Chinese Foods. China Medical Journal 35: 247-257, 1921] revealed the total protein content of mung bean seed rose 48%, from 25% in dry seed to 37% in dry sprout, with similar increases in other seeds).

Sprouts are known for their high enzyme activity never to be surpassed at later stages of maturity. The importance of enzymes in one's diet has been emphasized by a number of researchers. According to Tom Spies, M.D. (reported by Garfield G. Duncan in Diseases of Metabolism). "the respiration and growth of cells involve the synthesis of complex substances from simpler chemical compounds. By means of substances called enzymes, the cells are able to perform these functions without increased temperature and pressure. Enzymes are catalysts produced by living cells from combinations of organic substances, including the vitamins. These enzymes retain activity even when separated from the living cell."

The nutritional effect of enzymes in animal experimentation was recounted by Brown Landone in his article "Make Cells Grow Younger (quoted in Nautilus Mag 1947, pg. 232) - "More than twenty years ago, experiments were made on old decrepit rats. Their age corresponded to that of a man of ninety years. They were fed with immature food, that is, food which had not finished growth sprouting new stems- young leaves. The results were amazing. The old decrepit rats were transformed, and their bodies began to grow younger. Twenty years later the factor recognized to produce this effect was the enzymes.

The vitamin E content of the seed increases by as high as 1200% vitamin A increases, the vitamin B complex increases and vitamin C which wasn't in the seed is synthesized in high amounts. Many valuable live enzymes are formed that are very beneficial to your digestive tract.

Sprouts are Fresh and Cheap - Home grown sprouts are the freshest food you will ever eat. They won't have lost their vitamins, antioxidants and other valuable nutrients because of picking green or storage in warehouses etc. They are free of pesticides and other chemical treatments. The sprouts are cheap you get pounds of nutritious food for pennies.

All seeds can be sprouted. **Be careful that the seeds you sprout are untreated seeds.** *The seeds you buy to plant are often treated with various chemicals to protect them. These you don't want for sprouting.* Sprouting seeds can be stored for several years and still sprout as long as they are kept cool and dry.

The seeds that I like to sprout are alfalfa, broccoli, and lentils. These seeds are the easiest to sprout and provide some of the greatest benefits. Alfalfa seeds are small, about the size of a pinhead, and tan in color. Often considered to be a grain, but actually a legume, alfalfa was originally grown in North Africa. It is now widely cultivated in various parts of the world. Over 27 million acres in America alone are devoted to alfalfa each year, and organically grown alfalfa seed is easily found in most natural foods stores. Alfalfa sprouts, pound for pound, are one of the most nutritious foods you can eat. The roots of mature alfalfa plants that produce the sprouting seeds can reach very deep into the soil, collecting hard to find trace elements as they grow. Alfalfa sprouts are a good source of B-complex vitamins, along with vitamins A, C, E, and K. They also contain calcium, magnesium, potassium, iron, and many trace minerals including selenium and zinc. If they are grown in indirect light, their nutritional content is further enhanced by the development of chlorophyll. Alfalfa sprouts are among the most versatile. Use them to make sprout drink, salads, sandwiches, green drinks, soups, and sprout loaves.

Lentils, which are native to Central Asia, are small beans with a round, flat shape. Use only green lentils for home sprouting, because red lentils are hulled after harvest, and most of the beans will not sprout. Organically grown lentils are available at most natural foods stores.

Lentil sprouts are rich in protein, iron, and vitamin C. Use them in salads, in sprout loaves, in breads, and in green drinks. They also go well with marinated vegetables.

Sproutable Seeds

Most seeds can be sprouted and eaten but avoid sprouting any seeds from plants that may have poisonous parts (**kidney bean sprouts are toxic don't sprout kidney beans**). Common seeds for sprouting include alfalfa, fenugreek, lentils, peas, radish, and red clover. Mung beans have been sprouted in Asia for thousands of years. Other less common seeds include cabbage, broccoli, garbanzos, mustard seed, and quinoa. Most grains can grow chlorophyll rich grass crops in soil, and grains without hulls can be used as short sprouts. Save garden seeds (radish is easy, just let them go to seed and harvest when dry and ripe).

Broccoli sprouts have been found to contain very potent anti-cancer compounds. Studies show there is up to 50 times more anti-cancer chemical in broccoli sprouts than in the mature vegetable - and the sprouts don't taste like broccoli. Three-day-old broccoli sprouts, which are tender shoots topped with two baby leaves, contain large amounts of sulforaphane, a powerful cancer fighter, say researchers at Johns Hopkins University.

Paul Talalay, head of a team at Hopkins that discovered sulforaphane five years ago, said he was surprised the sprouts contained such a high level of this anti-cancer compound.

Earlier studies showed that sulforaphane, found in broccoli, cauliflower, cabbage, brussel sprouts and some other vegetables, prompts the body to make enzymes that prevent tumors from forming. A 1994 study indicated that cancer development was reduced by 60 to 80 percent in laboratory animals fed sulforaphane extracted from broccoli. Talalay said his lab has found that the sulforaphane

content in broccoli from a grocery store can vary by a factor of eight or 10, and there is no way to identify a vegetable loaded with the compound from one that is not.

Broccoli sprouts may solve this problem, because the baby plants have a uniformly high level of sulforaphane. Because of the high content of sulforaphane, it is possible to consume far lower quantities of the sprouts and get the same protection.

Broccoli sprouts resemble the alfalfa sprouts now common in grocery stores, but they have more flavor. Broccoli sprouts do not taste like broccoli. They taste more like radish sprouts.

Food Poisoning and Sprouts.

There have been several recent news stories regarding salmonella contamination in sprouts. These have been combined with warnings from the FDA and the CFIA that sprouts could be contaminated with food poisoning bacteria and advising the very old, the very young, and those with compromised immune systems to avoid raw sprouts.

ALERT

From the Center of Disease Control the following:

Don't eat raw alfalfa sprouts, especially if you are elderly or have an impaired immune system. And don't feed them to young children. These sprouts have caused outbreaks of illness due to salmonella and E. coli. The problem: the seeds themselves may be contaminated (washing them doesn't help), and the bacteria grow as the sprouts germinate. This is a world-wide problem. A recent report from the CDC estimated that more than 20,000 people in North America contracted salmonella infections from these sprouts in 1995 alone. And though people associate tainted ground beef with E. coli, sprouts are one of the leading causes of E. coli illness. In healthy people these bacteria can cause diarrhea, nausea, cramps, and fever for several days, but in high-risk groups the symptoms tend to be more severe and can be life-threatening.

I feel that the stories were far overblown because it made interesting news - the original "health food" might be bad for you? I've been sprouting alfalfa and eating the sprouts for 46 years and have never heard of or experienced salmonella or E. coli infections. Sprouting seeds purchased from reputable dealers are fine. However if a person wants to be safe you can do the following.

HOW TO SPROUT SAFE SPROUTS

- 1- Be sure you buy untreated seeds that are good for sprouting.
- 2- Pour 1/4 cup alfalfa seeds into a quart jar. To 1/2 cup water add 1/2 teaspoon clorox bleach or 1 tablespoon of 3% hydrogen peroxide. **CAUTION DON'T MIX CLOROX AND HYDROGEN PEROXIDE. USE ONE OR THE OTHER BUT DON'T USE BOTH.** Pour the water containing the bleach or hydrogen peroxide over the seeds in the jar, swirl around so all of the seeds are wet. Let soak for 5 minutes. After 5 minutes pour off the water then add 1 cup of fresh water without the bleach or peroxide, swirl it around rinsing the seeds, pour it out and add 2 or 3 cups of fresh water. Allow the seeds to soak for 8 - 12 hours. Drain off all the water, rinse and drain. Set the jar with the moist seeds on your kitchen counter with a mesh cover on top. The piece of mesh allows air to circulate but keeps out air born mold spores and dust etc.. Swirl the mixture around to

keep all the seeds wet twice a day. After 1 - 2 days the seeds will have swelled tiny sprouts will appear on most of the seeds. At this point they can be transferred to the sprouting tray and rinsed twice a day until they are about 1-1/2 inches long then put in a plastic bag and store in the refrigerator or they can remain in the quart jar and sprout there being rinsed twice a day.

Basic Sprouting in a Jar or Container

The simplest and most economical way to grow sprouts is in a jar or container. Any size wide-mouth jar will do, such as a canning jar, mayo jar or just about anything you that is clean and toxin free Wide-mouth jars are easy to clean and work with.

Lid

You want to provide your sprouts with necessary fresh air. Cover the top of the jar with muslin, cheese cloth or nylon mesh screen and secure with a rubber band. If you're using a canning jar, you can use a lid made for sprouting. You will be using organic sprouts, so why not keep all the materials you use toxin free

Soaking

If you're using a quart jar. you can put 1 Y2 to 2 tablespoons of small seeds into the sprouting jar or up to 1 cup if using larger sprout seeds. Rinse the seeds with lukewarm (not hot) clean water and remove any thing that does appear to be a sprout seed. After you have pre-rinsed the sprout seeds you can fill the sprouting jar with lukewarm water.

Fill the jar three to four times the volume of the seeds lukewarm water. The seeds will absorb water and you need to give them all the water they want in this stage of development. Now you can cover the jar with the lid you have decided to use. Let the seeds soak 8-12 hours or overnight. Protect your sprout seeds from light by covering with a dish towel or placing in a cupboard.

After the allotted time. rinse them again and drain the sprout seed jar. Store the jar at an angle to drain, but still have a good air flow. Store the sprout jar and seeds somewhere warm and low light or dark. You can cover the jar with a dish cloth Sprouts seeds do not need light at this stage and will actually be sweeter if kept from light

Rinse

Rinse your sprouts (in the jar) with lukewarm dean water 2 to 3 times per day for up to 7 days. Thoroughly drain the jar after each rinse. To much standing water will rot your seeds. Do not expose sprouts to light. After 2 to 3 days the sprouts should be filling up the jar. Some sprouts are best in 3 days, others might take as long as 7 days The seeds you bought should have recommended sprouting times. If not, then taste test them. after about 3 days. You will learn what you like. as you get better at sprouting. (Harvest sprouts anytime after the shoots appear. up until the secondary leaves appear.)

Removing Hulls

Some sprouts will shed off hulls after about 2 or 3 days. To remove the seed hulls.. place the sprouts in a bowl and slowly run cool water over them. Most of the hulls will either float to the top or sink to the bottom making them easy to remove (You can also wait until the very end of the sprouting process to remove hulls)

Harvesting

Harvest sprouts anytime after the shoots appear. up until the secondary leaves appear. Rinse sprouts in cool water and remove any remaining hulls Drain in a colander, but do not allow the sprouts to dry out. Your sprouts are now ready to refrigerate and eat.

Conditions for growth

Air - as any small plant, sprouts need air to breathe, without it they will succumb to mould and rot more easily. Don't put them in sealed containers and make sure that they get enough.

Water - after a good soaking, sprouts need water every 12 hours at least and more if its hot. Regularity is key, if they are even slightly deprived in their first few days of life they will be permanently setback. In your efforts to keep them watered don't drown them. they must be allowed to freely drain, else they will soon rot. If you let them dry they'll die. If you let them soak they'll choke.

Warmth - sprouts need to be kept warm to germinate and grow. Optimum temperatures vary but 70 to 75 f is a good start. Don't let them get too hot or they'll wilt, lose vitality and die. Colder temperatures will slow growth and are good for storage. but don't freeze them.

Space - for best results, give your sprouts some room. Some sprouts can increase up to 30 times their size. Cramming them in a jar or overfilling a tray or bag will force them to compete for light and air, with inevitable casualties. Spread only a thin layer of seeds in trays, keep them mobile in bags and jars and remember they get bigger!

Light - most sprouts can't use light in the first few days of growth, and many never need it. However, any that produce leaves will eventually need light to 'green up'. Direct sunlight should be avoided unless it's cold, as it can overheat your crop. Most sprouts will be fine if they get indirect natural light. there is no need to keep them dark.

Nutrients - adding liquid plant nutrients to the soak water will give the sprouts an extra boost that you will later enjoy. It is not necessary, but will increase their health, longevity and nutritional value. You can also mist the sprouts with a dilute solution after rinsing. Use a few drops of liquid kelp in water, or another organic plant food.

Containers to grow in

Jars - traditionally used for sprouting, free and easy to find, however they are far from ideal. Use them for sprouts that don't need light, as sprouts in the middle rarely get enough. Avoid overfilling them to counter bad drainage and poor air circulation and for the same reason don't use a lid, cover the top in a piece of muslin or screen instead and invert jar to drain. Removing seed hulls can be a problem.

Trays - the best way of growing light seeking sprouts. They have a large surface area to soak up more light. can be stacked easily to save space, and most importantly, allow the sprouts to grow naturally; upwards. This allows several croppings of the more and less vigorous plants so all can be harvested at their nutritional peak. Cover the bottom of the tray with a thin layer of soaked seeds. Make sure it is at least 2 inches high and has drainage holes smaller than the seeds. Any sort of tray can be used .but if the roots have something to attach to the sprouts will do better and are easier to rinse. drain and clear hulls from. Clean with a stiff brush, leave to dry, brush again and try not to be a perfectionist!

Some sprout blends for salads, dips, sandwiches etc.

Italian Blend

Clover, Garlic, Cress

Another gourmet blend. Italian is 2nd only to French Garden in popularity. A great way to enjoy Garlic Sprouts (which cost so much solo) along with other tasty sprouts.

Moo Mix

Alfalfa and Clover

A simple combination for those who like mild flavor.

Mother's Mix

Red Clover, Alfalfa, Broccoli, Fenugreek, Natural & black Sesame & Garlic Chive

Mother's Mix is basically a Leafy sprout Blend, but it is full of nutrients that are essential for pregnant and nursing moms. It tastes fantastic, and anyone and everyone can enjoy that!

Hot Sprout Salad

(Clover, Radish, Fenugreek, Mustard, Dill, Cress and Celery

A very spicy mix with a fantastic aroma. The addition of Celery adds to the aromatic quality. Very tasty - as long as you like some heat.

Russian Mix

Clover, Onion, Mustard, Dill, Fenugreek

Our personal favorite among the Leafy sprouts and also the oldest of these mixes. It is the perfect accompaniment to a bagel.

Spicy Mix

Alfalfa, Clover, Radish, Fenugreek

A common sprout mix - most sprout growers offer some version. This is different because it has fenugreek and enough radish to actually be considered spicy. If you really want spicy try Hot Sprout Salad!

BOB'S SPROUT DRINK

This drink is for the stout of heart. It is easy to prepare and will provide you with a nutritional boost that gives you minerals, trace minerals, vitamins, many live enzymes and chemicals that provide protection against cancer and many degenerative diseases. Its all natural providing nutrients balanced the way nature intended.

In a 5 cup blender jar place the following: **Makes enough for two people**

- 1 cup Orange juice
- 1/2 cup Pomegranite juice or you can use more orange juice
- 1 - banana (frozen) or fresh broken into pieces.
- 2 - tablespoons of lecithin granules (optional)
- 1/2 - teaspoon ascorbic acid (Vit. C) (optional)
- 2 Tablespoons Lemon flavored cod liver oil
- 1 - teaspoons of Vanilla
- Two large handfuls of alfalfa sprouts (don't skimp on the sprouts) or 1/2 of a 5 oz. package if purchased.

Blend the above until smooth

Add 8 oz Plain low-fat yogurt (be sure that it contains the live cultures) I prefer Dannon or Yoplait You can increase or decrease the amounts to serve more or less people or you can drink it all yourself. Drink it fresh.

You can use your imagination and add or change to suit your preferences.

When your supplying your body with its needs you can even have a little ice cream and chocolate cake once in a while. Foods are not only for health but are to gladden the heart and to be an enjoyment.

NOTE:

The lecithin help keep your arteries clean.

The plain non-fat yogurt supplies calcium, magnesium and high quality protein. The yogurt also supplies us with billions of live Acidophilus Lactobacillus that keep our friendly intestinal bacterial flora healthy. This flora keeps our colon healthy protecting it against cancer, infections from pathogens and candida yeast.

FOR THOSE THAT ARE ALLERGIC TO MILK PRODUCTS ADD TOFU AND LEAVE OUT THE YOGURT.

Serving Suggestions

- . **Grilled Cheese** - liven up a grilled cheese sandwich with your favorite sprouts and a tomato slice.
 - . **Tacos** - Use sprouts instead of shredded lettuce in tacos.
 - . **Hamburgers & Hot dogs** - sprouts can replace lettuce in these kid's favorites.
 - . **Sandwiches, Subs and Pitas** - sprouts are a delicious addition to any of these.
 - . **Salads** - add fresh sprouts to just about any salad, or create your own sprout salad. (hint — radish sprouts are great in **coleslaw or potato salad**, or anyplace you'd use radishes.
 - . **Omelets** - Add a half cup of sprouts to your omelets just before folding. Sprout mixes or alfalfa are great for this.
 - . **Breads** - a half cup of sprouts per loaf makes a tasty, nutritious addition to homemade breads. (Add with the liquids) The sprout nutrients also seem to help the yeast produce a higher loaf
 - . **Soups** - a few sprouts added just before serving are great in many soups.
- Peanut butter sandwiches** - believe it or not, I love sprouts in peanut butter sandwiches! Use your imagination. Please let us know when you find a new use for sprouts.