

## **Miracle of Germination**

Seeds are a storehouse of vitamins, minerals, enzymes and essential fatty acids as well as the greatest source of protein in the vegetable kingdom. When sprouting, a seed unfolds and starts to multiply and develop its nutrients in order to provide nourishment for the maturing vegetable. This miracle of nature means that a little sunflower seed has in it the basic formula for nourishing a six foot plant.

### **Germination initiates the following changes in the seed:**

- 1) Nutrients are broken down and simplified: protein into amino acids, fats into essential fatty acids, starches to sugars and minerals chelate or combine with protein in a way that increases their utilization. These processes all increase nutrition and improve digestion and assimilation. This is the reason sprouts are considered predigested food [2].
- 2) Proteins, vitamins, enzymes, minerals and trace minerals multiply from 300 to 1200%
- 3) Chlorophyll develops in green plants.
- 4) Some acids, toxins which would normally interfere with digestion are reduced or eliminated
- 5) Size and water content increase dramatically.

### **Protein**

These miniature green vegetables are high in protein when compared to common green leafy vegetables such as spinach and lettuce, but have less protein than bean sprouts such as soybean, lentil and chickpea. Alfalfa and sunflower are richer in protein than spinach or any of the common lettuces and they are free of agricultural pesticides and poisons. Alfalfa seed can be as high as 39.8% protein although it reduces its concentration as it grows [3]. On the other hand, lettuce and spinach only supply the nutrients developed from one seed, whereas a sprout salad serves up the nutrition from thousands of seeds.

### **Minerals**

Next to sea vegetables, sprouts are the best source of minerals and trace minerals. Most salad sprouts are rich in calcium and magnesium, have more phosphorus than fish, and are excellent sources of hard to find trace minerals such as tritium, selenium, manganese, chromium and others. Because minerals and trace minerals are naturally chelated in the sprout, they are more easily utilized by our bodies. Zinc in alfalfa sprouts increases from 6.8mg in the seed (per 100gms), to 18 mg in the sprout (dried weight). One cup (100mg) of alfalfa sprouts provides twice the U.S. RDA of zinc [4].

### **Vitamins**

Baby green sprouts, like all green vegetables, are an excellent source of B-vitamins. B-vitamins like riboflavin, thiamin, folic acid, biotin, lecithin (choline and inositol) and others increase an average of 4 to 16 times during the first 7 days of germination. Some factors increase even more. B-12, the elusive vitamin alleged to be unavailable to vegetarians, increases almost 2000%, Vitamin B-17, also known as laetrile, multiplies 50 to 100 times that of the original seed. Nucleic acids, fundamental agents of cell growth and regeneration, increase up to thirty times upon sprouting [3]. Mung and lentil beans have almost no vitamin C but their sprouts have a considerable amount. Mung bean sprouts are not only rich in vitamin C, but a good source of the amino acid methionine which is lacking in other sprouts. The light and dark study (see p. 98.) verifies that cellular building is enhanced in the presence of light. Vitamin C synthesis increased approximately 25% in the light and protein increased 12%. Even trace mineral levels were higher in the light than those in the dark. No detectable levels of toxic metals such as lead, cadmium, arsenic and mercury were found.

### **Sprouts Are More Than Nutrients!**

Nutrients are not everything. The German philosopher Goethe said "the whole is more than the sum of its parts." Modern medicine could learn a lot from his observation. Research is typically directed to locating, defining and demonstrating the effect of chemical substances. But Western science is reluctant to accept the existence of a "life force". Today's doctors are curious about the marvels of ancient Chinese medicine, but only the point of acupuncture as anesthesia or the pharmacology of its herbs. But Qi (pronounced chi), the vital energy, which is the basis of all Chinese medicine is an objectionable idea to western science. Science explains energy in terms of calories. But calories cannot explain life and it is precisely this vital "Qi" energy, which controls our health and our ability to recover from illness and

injury. Spectral chromatography is a means of photographing substances and analyzing its nutrition according to its light, color and structure. A chromographic study was made of sprouted wheat in which snapshot of its growth was taken each day. A ring of life or halo appeared after the first day and continued to intensify each day. Numerous enzymatic processes were visible, starch was breaking up, pink hues of pure thiamin were abundant as were the spokes of protein. Under ultra-violet light, fluorescent rings indicated the presence of niacin and riboflavin. The overall intensity of the color and form gave it a sign of life. The same wheat was broken apart into its germ, bran and kernel and its analysis demonstrated no signs of life in the separate parts. No part reflected a living entity, neither kernel nor germ. A third test was made of the same wheat after it was cooked at 212 F. It would not germinate at all and on the second day, it fell apart. The proteins faded and although enzymes were present in the chromograph, they were employed in the process of decay not growth [11].

Sprouting seeds are categorized according to those varieties that develop a green leaf and those that do not. The green, chlorophyll developing seeds are for salads and should be grown vertically, as is lettuce in your garden. Grains and beans are generally not chlorophyll developing and thus, for our purposes, do not need light in order to mature. These are mung, lentil, chickpea (garbanzo), green pea, soy, adzuki, red pea, pinto, navy and kidney bean. These beans are usually sprouted from 3 to 5 days in home sprouters and still look very much like beans with a tail on them. There is no metamorphosis of the bean as with alfalfa and clover, which transform themselves from legumes into a completely different entity--a green plant. Although sprouting makes the large beans easier to digest, increases their protein and lowers their starch, they are still primarily raw beans. Quantity and regularity of consumption is the caveat here. One should not regularly consume large quantities of raw beans or raw sprouted beans. This is more of an issue for the bigger beans than it is for the smaller ones. Big beans such as soy, garbanzo, green pea, kidney, navy and pinto should be cooked until soft all the way through. Fortunately, sprouted beans need much less cooking than raw beans. This has two advantages: the sprouted bean offers us more nutrients and the reduced cooking destroys less of them. A good cooking method would be "low heat, long term cooking". Turn the flame on low, put on the cover and let simmer until done. Leave the lid ajar near the end of the cooking process to relieve escaping gases. Stir periodically and never let all the water cook out. Make sure the beans are soft throughout before eating. Although sprouting greatly reduces all of the bean's digestive inhibitors and toxins, cooking insures the job is complete. Smaller size beans such as mung, lentil, adzuki, and red pea, can be eaten raw in larger quantities than their big bean brothers. This is especially true if their shoots are greater than 1 inch long. The longer the sprout, the easier they are to digest. But for maximum digestibility, they should be lightly steamed or wok sauted whenever large quantities are consumed regularly. Cooking time is even shorter for these beans. Adzuki, its American sister the China red pea and its cousin the mung bean, can also be grown to the green stage. Once these beans develop green leaves like alfalfa and clover, they take on the qualities of lettuce. The greens can be consumed without cooking. Unfortunately, lentils, green peas, soybeans, garbanzos and other big beans are either not possible not palatable to grow to the green stage. With the partial except of lentils, these beans should be cooked for best digestion. Grains such as wheat, rye, oat, millet, barley and corn are too hard to digest raw unless they are sprouted to the green or "grass" stage. Technically, grains are chlorophyll developing plants because they are all grasses. Grasses are, of course, green, but they are salad foods...at least for humans. For cows and horses, they are haute cuisine! Grains are usually sprouted from 2 to 5 days in a sprout bag and yield a sprout that is 1 to 2 times the size of the berry. The grains can be dried and pulverized into flour or ground into sprout dough for making sprouted breads, cookies, crackers, etc. Soft wheat sprouts are relatively easy to digest and may be eaten raw as snacks or mixed with dried fruit in small quantities. Again, we do not normally consume raw grain and sprouted grain is not much different. It still needs some cooking to be completely digestible. Baking sprouted grain for sprout bread, however, can be accomplished temperatures much lower than standard bread. Sprouted wheat dough usually bakes at 250 F. compared with 450 F. for common bread baking. Because these temperatures are so low, sprout bread can take as long as 3 hours to bake. The bread is dried as much it is baked. In summary, grains or big beans, should be cooked for optimum digestibility whenever consumed regularly or in quantity.

<http://www.universal- tao.com/article/sprouts.html>