

A Closer Look at Sprouts

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Though sprouts became popular in the 1970s as a salad bar staple, only recently have we begun to overlook their fad food reputation. Certainly, sprouts add vitamins, minerals, and flavor to our meals, as well as the meals of our birds. Recent definitive research has even established that some sprouts possess cancer-protecting properties that may finally push them to the center of the dietary stage.

In a report released last year by Johns Hopkins School of Medicine, indications were that broccoli sprouts may very well offer protection against cancer (See "Broccoli Sprouts as Cancer Protection"). Creating a frenzy, as may have been expected with such an announcement, this news overshadowed an equally important advisory from the U.S. Food and Drug Administration (FDA) warning "health-compromised groups" to avoid raw alfalfa sprouts (See "Alfalfa Advisory").

Are sprouts a magic bullet for us and the birds that we so lovingly care for, or a potentially serious health threat? There really is no simple answer to this question. However, this article summarizes recent research on sprouts and the ways in which you may obtain the maximum health benefits that they afford both you and your birds. Growing your own sprouts really is a simple way to add fresh greens to your diet, especially in winter.

Seeds for Sprouts

Though the most popular are the green leafy kinds such as alfalfa, broccoli, cabbage, clover, kale, radish, and

onion, the seeds of many different types of vegetables can be sprouted. All sprout readily in water and are best eaten soon after the first leaves (cotyledons) sprout. As they are so tender and delicate, these are best enjoyed raw. Other tasty and nutritious seeds to sprout include various kinds of beans and lentils: adzuki, kidney, lentil, mung, pinto, and soy. Generally eaten cooked, they are best harvested before the leaves emerge.

In approximately three to six days, most vegetable seeds will have germinated. Though individual birds seem to have their own preferences, for us the flavor is variable, though you may typically assume it will be milder than the mature vegetable. Interestingly, beans require only one to three days to produce a root, while seeds such as onion and garlic may need up to two weeks to produce an edible sprout.

Seed companies and health food stores sell many kinds of sprouting kits and seed. It is extremely important to note that sprouting seed does differ from garden seed in that it "has not been treated with fungicides," a major concern for us all but especially true within the avicultural community today. Germinating well, it is generally open-pollinated as well as cheap. Though most untreated seed can be sprouted, I have found it best to use seeds with the highest germination rates as it is the ungerminated seed that is most likely to spoil during the sprouting process.

Though I doubt that many of us would notice such a discerning palette within our birds, if you want to sprout

a specific variety for its taste you will probably have to buy seed intended for the garden. Again, as always, ensure that the seed is not treated. Varieties well suited to sprouting include "Saga" broccoli, "Red Russian" kale, and "China Rose" radish. For sprouts of kidney, mung, and other common beans, simply use the fresh, whole dried beans now available at most grocery stores.

Basic Sprouting

Whether you use a traditional canning jar, a cheesecloth bag, or a fancy European sprouter, the method for successful sprouting is the same. Though most packets of sprouting seed include specific instructions, here are the basic guidelines for sprouting in a 1-quart jar.

Place 1 to 2 tablespoons of seed in a medium bowl. Remove any loose hulls and visible debris, while rinsing the seed several times to wash away any surface contaminants. Soaking overnight in tepid water dramatically enhances germination. After soaking, smaller seeds such as alfalfa and broccoli can expand by as much as four times their volume, while larger seeds such as mung, bean and lentil, will only double in size.

Place the presoaked seeds in a clean jar covered with fine mesh



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screen or cheesecloth. (If you use a canning jar as I do, use the screw lid to hold the screen in place; otherwise, a rubber band will do just fine.) Fill and drain the jar with cool water several times before propping the jar top down at a 45° angle.

Rinse with cool water and drain the sprouts two or three times a day until roots sprout for bean seeds and cotyledons emerge for vegetable seeds.

The best conditions for sprouting appear to be temperatures ranging between 60° to 75° F, high humidity, good air circulation, and frequent rinsing to deter spoilage. Additionally, though most sprouts seem to do well in indirect light, bean sprouts require darkness.

To sprout different kinds of seeds simultaneously, a virtual necessity when attempting to supplement the dietary needs of our flocks, you may want to consider using a multilevel plastic seed sprouter. Most typical mail order seed companies now offer several kinds. These have two or three levels, a watering tray at the top, and a water collection tray on the bottom. Because water flows down through all the levels, one rinse cleans all the seeds. If you select a model with a broad, flat germination tray, you can harvest the tallest sprouts first, leaving the others undisturbed until they are mature.

Harvesting and Storing

As a practical matter, vegetable sprouts may be safely served to our birds for several days after harvesting, provided that they have not developed a sour odor, wilted, turned yellow, or became slimy. To get maximum health benefits from broccoli sprouts, feed them three to four days after they start to germinate and before they have green leaves. Feed bean sprouts, on the other hand, while the roots are plump and crisp, and before the cotyledons appear.

Before serving sprouts, wash and rinse away the seed hulls. Refrigerate harvested sprouts, and rinse them daily to preserve freshness. Most sprouts can be safely stored for up to a week.

Broccoli Sprouts as Cancer Protection

In late 1997, Researchers at Johns Hopkins School of Medicine in Baltimore discovered that the three-day-old sprouts of certain broccoli varieties contained as much as 20 to 50 times the typical level of a potent anti-cancer compound found in mature forms of most cruciferous vegetables (cabbage, turnip, and mustard family). The research showed that while levels of the compound sulforaphane varied greatly among mature broccoli, levels in some broccoli sprouts were comparatively consistent and significantly higher. (Sulforaphane is a phytochemical, one of many compounds that plants make for their own benefit.) The researchers used untreated seed from about 50 varieties of broccoli, finding a surprising eight varieties that produced sulforaphane-rich sprouts. "Saga," a common heat-tolerant broccoli proved to be an important variety for testing because it produced consistent results.

Johns Hopkins School of Medicine was granted a patent for this method of harvesting sulforaphane-rich cruciferous sprouts with high concentrations of sulforaphane at cotyledon stage in anticipation of the excitement this discovery would cause. A licensee of Green Giant Fresh has now joined the researchers to produce and sell these patented sprouts as a dietary supplement, while other sprout growers are challenging the patent as sprouting is a process that occurs in nature. This will be the first vegetable ever sold for this purpose.

Although sprouts from plants other than cruciferous vegetables undoubtedly contain phytochemicals – potentially very beneficial ones – those compounds have yet to be identified. Sprouts offer many nutritional benefits beyond phytochemicals; they are low in calories, free of cholesterol, and virtually free of fat and sodium as well. Sprouts also contain a myriad of vitamins and minerals, especially vitamins A and C, protein, and fiber. A 1/4-cup-serving of green-leafed sprouts, such as alfalfa, broccoli, or kale, contains 10 to 20 times more vitamin A than any legume sprouts, is high in vitamin C, and contains only about 5 calories. A 3-ounce serving of bean sprouts, such

as mung, kidney, or soy, contains 15 to 20 calories, and a significant portion of fiber and the folic acids.

Alfalfa Advisory

In response to recent *E. coli* and *Salmonella* outbreaks, August of 1998 the U.S. Food and Drug Administration issued an interim advisory recommending that anyone at high risk for severe food-borne illness – namely, small children, the elderly, pregnant women, and anyone with a compromised immune system (Read "BIRDS") – should not eat raw alfalfa sprouts, especially those grown commercially.

Caused in part by harvesting methods, the problem is that even seed used for sprouting is not cleaned sufficiently for consumption as food. All seed may contain bacteria that might multiply to dangerous levels during the sprouting process, which is inherently conducive to bacterial growth. Although the FDA advisory is specific to raw alfalfa sprouts (the kind most common in salad bars), consumption of any type of raw sprouts may be of concern to vulnerable populations. However, for a normally healthy adult, raw sprouts present no unusual health threat.

Sources

"Nutritional News," February 1997

U. S. Food and Drug Administration, (800) 532-4440, www.fda.gov

Garden City Seeds, 778 Hwy 93N, Hamilton, MT 59840; (406) 961-4837, www.gardencityseeds.com

Johnny's Selected Seeds, Foss Hill Rd., Albion, ME 04910; (207) 437-4301, www.Johnnyseeds.com

Seeds of Change, P.O. Box 15700, Santa Fe, NM 85707; (888) 762-7333, www.seedsofchange.com

Shepherds Garden Seeds, 30 Irene St., Torrington, CT 06790; (860) 482-3638, www.shepherdseeds.com

The Sprout House, 17267 Sundance Dr., Ramona, CA 92065; (800) 777-6887, www.sprouthouse.com

Territorial Seed Co., P.O. Box 157, Cottage Grove, OR 97424; (541) 942-9547, www.territorial-seed.com

