



University of Idaho  
College of Agriculture

Cooperative Extension System  
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# Grow Your Own Sprouts

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Sprouts of certain seeds have been popular ingredients in Oriental cookery for more than 5,000 years. As early as 2939 B.C., the emperor of China recorded the use of "health-giving sprouts" in a book about plants. Today, these germinated seeds of grains and legumes are gaining popularity in American kitchens and salad bars. And they're being used in far more than Oriental cooking.

Most supermarkets stock at least one type of sprouts in their fresh produce sections. In addition, bean sprouts come in cans. Sprouts add flavor, color, crunch and extra nutrition to a variety of dishes from casseroles to salads to sandwiches.

Sprouts are a good source of protein, vitamins and minerals and an excellent source of riboflavin, thiamin and ascorbic acid. As seeds sprout, carbohydrates decrease and water content increases, making sprouts lower in calories than seeds. Therefore, the nutrient-to-calorie ratio of some vitamins and minerals in sprouts is particularly high compared to the same ratio in nongerminated seeds. Sprouts are low in fat, and since sprouts are vegetables, they contain no cholesterol.

The cost of growing sprouts at home is low. Compared with almost any other fresh vegetable, homegrown sprouts are a bargain.

Seeds make up the major part of the world's diet. As much as 70 percent of the world's protein comes from grain crops. Legumes such as lentils, beans and peas are the second-largest group of seeds used for food. Sprouting seeds changes a dry, storable product into a fresh vegetable. One pound of seeds will yield about 8 pounds of sprouts. Citizens of the Pacific Northwest are fortunate in being able to obtain a wide variety of seeds for sprouting. Significant quantities of the nation's seeds that can be used for sprouting are grown in Idaho.

## Selecting Seeds

Use the best-quality seeds available for sprouting. This year's crop is best, although older seeds can be used. Buy seeds sold expressly for sprouting or seeds sold as food items. Beans and grains marketed for sprouting are the most reliable because the seeds were produced for their ability to germinate. However,

ordinary beans and grains from the supermarket can be used. Garden seeds may have been treated with a fungicide or other pesticide, which could be dangerous to consume. In addition, they may be more expensive. Remember, seeds for sprouting must not only be edible, but capable of germinating.

Seeds can be obtained from four major sources: mail-order seed companies, health-food stores, regional cooperatives and your local supermarket. The mail-order seed company is generally the most expensive, but provides the convenience of shopping at home and by mail. Mail-order companies usually offer a wide variety of sprouting seeds. Health-food stores usually offer a variety of seeds for sprouting and allow customers to inspect the seeds for wholeness, cleanliness and intact seed coats. Regional food cooperatives often are the least costly source of seeds. Supermarkets often sell seeds expressly for sprouting. However, their selections may be limited. Even so, a local supermarket might be a good place to begin purchasing seeds for sprouting. As you become more adventurous, experiment with some of the more exotic seeds found at health-food stores and mail-order seed companies.

## Sprouting

For seeds to germinate or "sprout," they need moisture, warmth and room to expand. As the seeds germinate, chemical changes occur, releasing carbon dioxide, other gases, waste products and heat. Rinsing sprouts with cool water will prevent these by-products from accumulating. In cold weather, slightly warm rinsing water will speed the sprouting process. Sprouts grow best between 75°F and 85°F, away from drafts and direct heat.

Before sprouting, wash the seeds thoroughly and remove chaff and broken or cracked seeds. In general, seeds for sprouting should be pre-soaked in about four times their volume of water for about 8 hours. In cold weather, soaking times may be increased by a few hours.

A variety of methods can be used to sprout seeds. The most popular are the jar, paper towel and sprinkle methods. The type of seed influences the method used for sprouting. One-



quarter cup of seeds will produce about 2 cups of sprouts. One-quarter cup of seeds works well for the following methods.

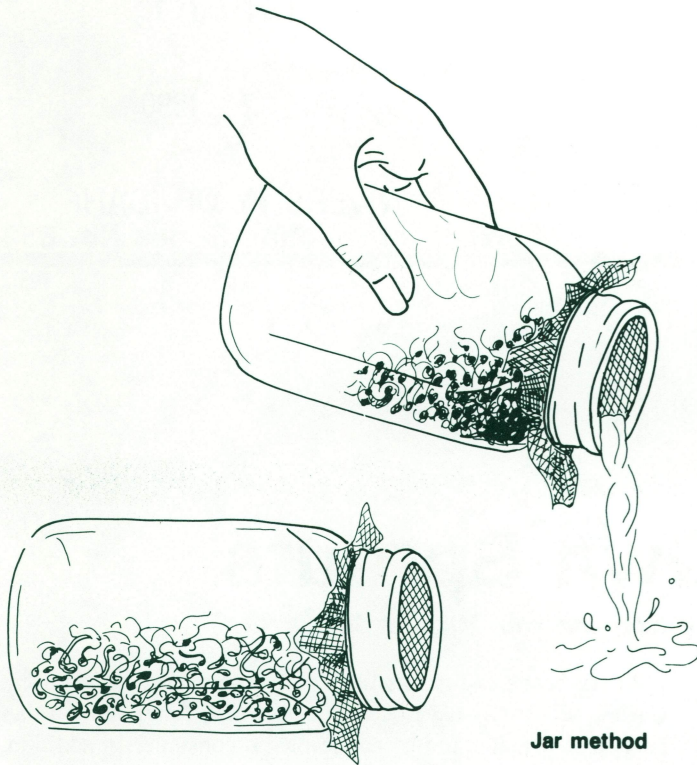
### **Jar Method**

#### **Equipment**

- Wide-mouth quart jar
- Cheesecloth, nylon net, nylon stocking or plastic screen
- Rubber band, jar ring or string

Place pre-soaked seeds in the jar (pre-soaking can be done directly in the jar). Cover opening with a piece of cheesecloth, nylon net or nylon stocking held in place with a rubber band or string. A piece of plastic screen cut to fit inside a jar ring also works very well. Lay the jar in a bowl, mouth down at a slight angle, to catch drainage. Cover the jar with a brown paper bag if you plan to leave the jar in the light. Otherwise, keep the sprouting jar in a cupboard where it will be dark and the temperature more even.

Rinse and drain seeds two to six times a day, depending on the type of seed and the weather. In warm, dry weather, the water evaporates quickly. When sprouts are the length you desire, you can place the jar in the light for "greening" the sprouts. Greening is optional. The longer the sprouts remain in the light, the greener they will become.



Jar method

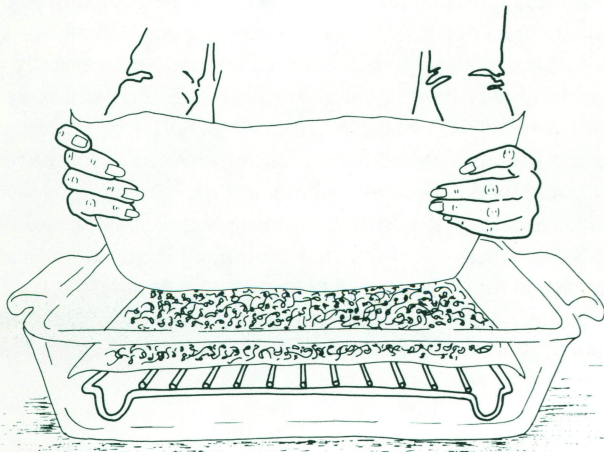
### **Paper Towel Method**

#### **Equipment**

- Glass tray or stainless steel pan with draining rack
- Paper towels

Place the rack inside the tray. The rack makes it possible for the air to circulate more freely around seeds. Soak a two-layer thickness of paper towels in water. Squeeze out excess water. Spread the damp towels over the rack, leaving room at the edge of the rack for air circulation. Scatter pre-soaked seeds evenly over the surface of the towels. Cover loosely with another double thickness of moist towels. Slip container into a plastic bag, leaving the end open for air circulation. Place in a dark cupboard, leaving the door slightly ajar.

To water the seeds, remove the top layer of towels. Sprinkle the seeds with water and resoak the top layer of towels, squeezing out excess moisture each time. Water only enough to provide a moist towel surface. Towels can also be rolled loosely around the sprouts, then placed on end. This may lead to longer, straight sprouts. Once your sprouts have grown, you may wish to place them in the light for "greening." The longer sprouts remain in the light, the greener they become.



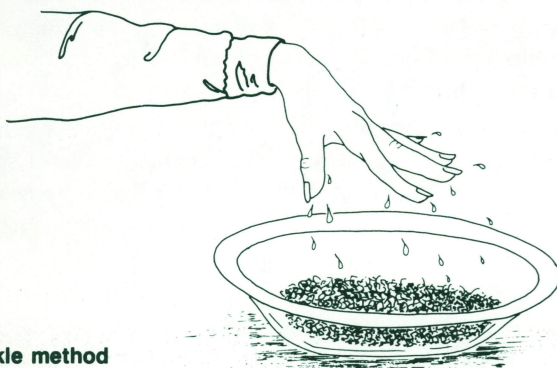
Paper towel method

### **Sprinkle Method**

#### **Equipment**

- Glass tray, glass pie plate or stainless steel pan
- Aluminum foil or plastic wrap

Do not pre-soak seeds for this method. This method is designed for seeds that become gelatinous when water is added to them, such as chia seed and garden cress. Gelatinous seeds do not drain well and may decay from too much moisture. Measure equal amounts of water and seed. Pour water into container and sprinkle the seeds evenly over the water. Let seeds



Sprinkle method



## How To Sprout a Variety of Seeds

Seed	Suggested method	Temperature	Rinsing/ sprinkling frequency	Sprouting time	Length of sprouts at harvest	Yield
Alfalfa	Jar	70-85°F optimal 72°F	3-4 times/day	3-5 days	1-2 inches	3 Tbsp = 1 qt sprouts
Barley	Jar	70-80°F	2-3 times/day	3-4 days	¼ inch	½ cup = 1 cup sprouts
Beans (great northern, white, lima, navy, pinto, red)	Jar	70-85°F	3-4 times/day	3-5 days	1-2 inches	½ cup = 2 cups sprouts
Buckwheat	Paper towel or jar	70-80°F	1 time/day (or as needed)	2-3 days	¼-½ inch	½ cup = 1½ cup sprouts
Chia	Sprinkle	70-85°F	1 time/day (or as needed)	4 days	1-1½ inches	2 Tbsp = 3½ cups
Corn	Jar	72-85°F	2-3 times/day	2-3 days	½ inch	½ cup = 1 cup sprouts
Garden cress	Jar or sprinkle	50-68°F	2 times/day	3-4 days	1½ inches	2 Tbsp = 3 cups sprouts
Fenugreek	Jar	70-85°F	1-2 times/day	4-5 days	3 inches	¼ cup = 4 cups sprouts
Garbanzo beans	Jar	68-72°F	4-6 times/day	3 days	½ inch	½ cup = 3 cups sprouts
Lentils	Jar	70-85°F	2-3 times/day	3-4 days	1 inch	½ cup = 3 cups sprouts
Mung beans	Jar	70-85°F	4-5 times/day	3-4 days	2 inches	½ cup = 2 cups sprouts
Radish	Jar	70-85°F	2 times/day	3-5 days	1-2 inches	2 Tbsp = 3 cups sprouts
Rye	Jar	50-68°F	2-3 times/day	3-4 days	¼-½ inch	½ cup = 2 cups sprouts
Soybeans	Jar	70-85°F	6-8 times/day	4 days	2 inches	½ cup = 2 cups sprouts
Wheat	Jar	70-80°F	2-3 times/day	3-4 days	½ inch	½ cup = 2 cups sprouts

stand for about 1 hour, then check them. If they appear dry, sprinkle a little more water over them. Tip the container slightly and carefully pour off any water that flows to the side. The seeds will have formed a solid jelly-like mass and will remain in place if drained carefully.

Cover the container with a piece of loosely fitting foil or slip it into a large plastic bag. If a bag is used, leave the end open for air circulation. Keep the container in the cupboard or, if you use a foil covering, in the light. Sprinkle a small amount of water over the seeds if they appear dry. Once a day is enough, except in hot, dry weather. When the sprouts are the desired length, place in indirect sunlight or artificial light for "greening," if desired.

### Preparing Sprouts

After the seeds have sprouted, the sprouts should be rinsed and cleaned. Place the sprouts in a strainer and rinse with a light spray of water to avoid breaking the tender shoots. Sprouts may also be placed in a large bowl of water. The seed coats that split as the legume seeds germinate will float and can be removed. If desired, the seed coats can be retained as an additional source of fiber in the diet. To avoid adding extra water to your product, drain the sprouts thoroughly.

Carefully inspect the sprouts before use and, if you desire, remove the seeds that show no sign of sprouting. These seeds are generally at the bottom of the container and may be hard to chew. Also remove any mushy or broken beans. Thin white "hairs" may appear as sprout rootlets. These "feeder roots" looking for nourishment are most common in some of the grains such as rye or wheat. The tangled roots can be separated gently after rinsing.

### Recipe Ideas

The most common use for sprouts is as ingredients in salads, hot or cold sandwiches and stir-fried dishes. Sprouts enable individuals to be creative and add crunchiness and new flavors to traditional salads, sandwiches and other food items. Add sprouts to a favorite green salad or substitute them entirely for the greens.

The best way to cook soybean sprouts or other bean sprouts is to steam them in a steamer or a colander over medium heat for 5 to 15 minutes, or until tender. If sprouts cannot be steamed, they may be gently simmered for 5 to 15 minutes. Steaming is better because the sprouts are less likely to break. Stir-frying sprouts in a small amount of oil is another popular technique, particularly for Oriental dishes. About ½ to 1 cup of raw sprouts can be added to a favorite casserole and the casserole baked as usual.

Some recipes call for a specific quantity of sprouts. Be certain the sprouts are well drained. Measure sprouts before cooking by lightly pressing them into a measuring cup until the desired amount is reached. If sprouts are pressed too tightly they may crush or break. If a recipe calls for a specific type of sprout, different ones may be substituted. In salads, soups and sandwiches it rarely makes a difference if you make a substitution. But remember, different sprouts taste differently and may affect the final taste of the product.

Many home-baked goods can be enhanced by adding sprouts. Substitute 1 cup sprouts for ½ cup flour and ½ cup liquid in many recipes. Chop the sprouts or leave them whole. Breads become particularly attractive with sprouts throughout the loaf. When adding sprouts to a yeast bread, add them as late as possible in the mixing process. Young sprouts are particularly rich



in enzymes. Some enzymes have the ability to digest protein, which could inhibit the yeast.

## Storing and Preserving Sprouts

Refrigerate sprouts immediately after they reach their peak for harvesting. First rinse them lightly in cold water, drain them thoroughly and wrap them loosely in a single layer of damp paper towels. Place the sprouts in a plastic bag and seal tightly. If sprouts begin to wilt or dry out, they may be rinsed again in cold water, rewrapped and refrigerated. Most sprouts last 7 to 10 days in the refrigerator.

Although sprouts are relatively inexpensive and are easy to grow, some people like to freeze them. To freeze sprouts, blanch them over vigorous steam for 3 minutes, and cool them quickly in ice water. Drain the sprouts and pack them into containers that can be sealed and frozen.

Sprouts also can be dried successfully. To dry sprouts, use a commercial dehydrator or place the sprouts on a cookie sheet in a slightly warm oven until they are dry. Grind the dried sprouts in a blender and store in a tightly covered jar. The nutty sprout powder can be used in baked goods, desserts and spreads, or sprinkled on hot cereals, fruit or yogurt.

### Additional References

- Blanchard, M. P. 1975. *The Sprouter's Cookbook for Fast Kitchen Crops*. Garden Way Publishing, Charlotte, VT.
- Courter, G. 1973. *The Beansprout Book*. Simon and Schuster, New York, NY.
- Chen, L. H., C. E. Wells and J. R. Fordham. 1975. Germinated seeds for human consumption. *J. of Food Science* 40:1290-1294.
- Price, T. V. 1988. Seed sprout production for human consumption. *Canadian Institute of Food Science and Technology J.* 21:57-65.

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