

Seed Saving Information

Prepared by Marisha Auerbach

queenbee@herbnwisdom.com www.herbnwisdom.com

All seeds are best preserved under cool and dry storage. Refrigeration is often recommended for long-term storage. If you have a barrier (such as woods, tree lines, or buildings) in between varieties of similar crops, you can shorten the distance needed to avoid cross-pollination of different varieties.

Beans (*Phaseolus vulgaris*): Self-pollinated. Beans do not readily cross between varieties so no need to separate varieties by more than a few feet. The pods are papery and dry when harvested. Pull up the entire plant lay on a tarp in a dry place. The plants can then be threshed by jumping on them. Use a ½" screen on top of a ¼" screen to clean the seed. Bean seed can remain viable for 4 years.

Beets (*Beta vulgaris*): Wind pollinated biennial. Different beet varieties must be isolated by ¼ mile. Beets can cross-pollinate with Chard, be aware of these distances as well. Seeds are ready to harvest when they are dry. The entire seed stalk can be brought in to dry further before threshing. Use a ¼" and 1/8" screen to help with cleaning. Beet seeds can remain viable for 4-6 years.

Broccoli, Cabbage, Cauliflower (*Brassica oleraceas*): Insect pollinated biennial (can work as an annual). Different broccoli varieties need to be isolated by ¼ mile to prevent cross pollination. Broccoli seed can take a very long time to mature and may require some season extension. Gather seed stalks when seed pods are dry. Use a 1/8" screen to help with cleaning. Broccoli seed remains viable for 5 years.

Carrots (*Daucus carota*), Celery (*Apium graveolens*), Fennel (*Foeniculum vulgare dulce*): Insect pollinated biennial. Different carrot varieties must be isolated by ¼ mile to keep them from crossing with one another. They must also be isolated from the common wildflower Queen Anne's Lace, which is the same species as carrot. Seeds are ready to harvest when they are dry. They can tend to shatter when ripe, so take care in harvesting and watch closely during ripening. Use a 1/8" screen to help with cleaning. Carrot seeds can remain viable for 3 years.

Chard (*Beta vulgaris*): Wind pollinated biennial. Different chard varieties must be isolated by ¼ mile from each other and from any beets that are flowering as well. Harvest seed stalks as they dry and thresh with a flail or by stomping. After threshed use a ½" and ¼" screen to help with cleaning. Chard seed remains viable for 4-6 years.

Corn (*Zea mays*): Wind pollinated. Corn must either be hand pollinated or isolated by ¼ mile between varieties. A minimum of 100 plants should be used for saving seed to maintain the maximum amount of genetic diversity of the variety. Allow the ears to dry on the plant and harvest when husks are dry and papery. Once harvested some additional drying under cover or indoors may be necessary before they can be shelled easily. Once shelled use a ½" screen on top of a ¼" screen to help with cleaning. Corn seed can remain viable for 5-10 years.

Cucumbers (*Cucumis sativus*): Insect pollinated. Cucumber varieties need to be isolated by ¼ mile to ensure that cross pollination doesn't occur. Allow the cucumbers to remain on the vine and get swollen and yellow or brown in color. Harvest and allow them to sit in a dry, cool place for 3-6 weeks for after-ripening. This helps considerably with the maturing of the seed. Remove the seeds and add about the same amount of water as you have seeds. Allow to lightly ferment for 2-3 days in a warm place, stirring daily. Pour off debris and flat seeds while leaving large and mature seeds to remain at the bottom of the container. Dry seeds on a cloth or screen. If needed, use a ¼" or 1/8" screen to help with cleaning. Cucumber seeds can remain viable for up to 10 years.

Eggplant (*Solanum Melongena*): Eggplants have perfect flowers and are self-pollinated. To prevent any odd insect contamination, isolate 50 feet between varieties.

Greens (Various) - *Brassica rapa*; *Brassica juncea*; *Amaranthus spp.*: Insect pollinated. Different varieties of the same species must be isolated by a ¼ mile from each other to prevent cross pollination. Harvest individual pods or stalks as they begin to dry. Seed can easily be lost due to shattering so harvest into bags or onto a tarp while they are still damp with dew in the morning. Use a 1/8" screen to help with cleaning. Seeds will remain viable for 5 years.

Kale (*Brassica spp.*): Insect pollinated biennial. Different kale varieties must be isolated by ¼ mile in order to prevent cross pollination. Seeds are mature when black and the pods have begun to dry. Take care during seed harvest because the pods shatter readily when dry. Use a 1/8" screen to help with cleaning. Kale seed remains viable for 4-5 years.

Lettuce (*Lactuca sativa*): Self-pollinated. Lettuce varieties will not cross pollinate with each other even at short distances, but beware of any wild lettuce which can cross with lettuce. Allow plants to "bolt" and eventually flower. Under wet conditions lettuce plants may need to be covered with a rain cover or grown in a greenhouse to prevent fungus from infecting the plant and seed heads. Carefully shake the seedheads into a paper bag to allow the mature seeds to be collected while leaving the immature seeds and flowers to keep growing. Gather every few days until no more seeds remain. Also, you can simply harvest the entire plant when about half of the seeds are mature and allow the rest to mature inside by standing up the plants in a box and on a cloth or tarp. Use an 1/8" screen to help with cleaning. Lettuce seed can remain viable for 3 years.

Muskmelon/Cantaloupe (*Cucumis melo*): Insect pollinated annual. Unless hand pollinating, isolate different varieties by 1/4 mile to prevent cross pollination. Tree lines, woods or buildings separating fields can allow for shorter distances. Harvest the melons when ripe for eating. Remove the seeds and pulp and rinse under water until seeds are clean. A light fermentation with a little water can sometimes help in the cleaning process. Simply add 1 cup of water for every cup of seeds and pulp and let sit in a warm place for 2-3 days, stirring daily. Then rinse under water and allow seeds to dry on a plate, cloth or similar clean surface. After rinsed use a 1/2" or 1/4" screen to help with cleaning. Melon seed will remain viable for 4-6 years under cool and dry storage conditions.

Onions and Leeks (*Allium cepa*, *Allium porrium*): Insect pollinated. Onions are biennials or perennials and generally will not make seed their first year. Harvest seed heads when 1/2 of the pods are open and showing black seeds. Allow to dry and seeds will be easily shaken out. Use 1/8" screen to help with cleaning. Onion seeds will remain viable for 1-3 years.

Peas (*Pisum sativum*): Self pollinated. Pea varieties do not require any distance for isolation. Peas being grown for seed must be trellised or else mold and dampness will rot the seed pods. Allow the pods to grow large and tough and eventually they and the plants will begin to dry down. Harvest by picking individual dry pods or by pulling the entire plants out of the ground and off the trellis. Shell by hand or thresh by flailing or stomping on a tarp. A 1/2" screen on top of a 1/4" screen will help with cleaning once the peas are threshed out of the pods. Pea seed will remain viable for 3 years.

Peppers (*Capsicum annum*): Self pollinated but can be up to 20% insect pollinated. 200-300 feet is sufficient for isolation between varieties. Peppers need to be red (or whatever color they ripen to) and can be cut open and the seeds dried on a plate or cloth. Use a 1/8" screen to help with cleaning. Pepper seeds can remain viable for 3 years.

Potatoes (*Solanum tuberosum*): similar to Tomatoes, if you can find seedheads on the plant, let the seedballs mature, then squeeze the seeds into a bowl, add water and pour off any debris, saving the seeds that sink to the bottom, potatoes only grow true to type when reproduced vegetatively, little information on

propagating your own potato seed because seed is infrequent and vegetative reproduction often causes disease in future generations

Radishes (*Raphanus sativus*): Insect pollinated. Different radish varieties should be isolated by a distance of ¼ mile to prevent cross pollination. Allow the seed pods to become papery and dry and harvest the entire plants. Some further drying may be necessary before threshing. A ¼" screen on top of a 1/8" screen can be used for cleaning the seed. Radish seeds remain viable for 5 years.

Spinach (*Spinacia oleracea*): Wind pollinated. Spinach varieties must be isolated by 1/4 mile to prevent cross pollination by wind. When seeds are dry, harvest the entire plant and thresh on a tarp. A 1/2 " screen on top of a 1/4" and 1/8" is helpful for cleaning. Spinach seed remains viable for 3-5 years.

Squashes (*Cucurbita spp.*), Pumpkins (*Curcubita pepo*): Insect pollinated. Unless you are hand pollinating, different varieties of the same species need to be isolated by 1/4 mile to prevent cross-pollination. Treat winter squash and pumpkins the same as usually done for winter storage but allow summer squash varieties to grow to a large size with a hard outside skin. After all squashes have reached this stage, harvest and let them sit for a period of after-ripening for 3-6 weeks or up to several months. Remove the seeds, rinse in water and dry. Use of a 1/2" and 1/4" screen can help with cleaning. Squash seeds remain viable for 6 years.

Tomatoes - *Lycopersicon lycopersicon* (except where noted): Self pollinated. Different tomato varieties rarely cross with one another so isolation distances are not generally required. The seed is mature when the tomato itself is ripe. Squeeze the seeds and juice into a jar and add about the same amount of water. Allow this liquid to ferment in a warm place for 3-5 days, stirring daily, until the seeds have sunk to the bottom of the jar. Rinse the seeds and allow to dry on a paper plate or cloth. Use of a 1/8" screen can help with cleaning. Tomato seeds remain viable for 4-10 years.

Turnips (*Brassica Rapa*): Insect pollinated biennial. Different turnip varieties must be separated by 1/4 mile. Seeds are mature when pods are dry. Harvest individual pods or entire stalks. Harvest into bags as seed can be lost due to shattering. Or harvest onto a tarp in the morning when plants are still wet with dew. Use a 1/8" screen to help with cleaning.

Definitions:

Annual – a plant that completes its life cycle, from seed to seed, in one year

Biennial – a plant that completes its life cycle in two years

Cold Stratification – some seeds (that evolved in colder climates) need a freeze to “wake up”, this can be done with refrigeration with some seeds and with freezing with others

Cross-pollination – producing viable seed through transfer of pollen from one plant to another

Determinate – usually associated with tomatoes, this term refers to bush variety plants that produce all their fruit in a 3 -4 week period

F1 Hybrid – first generation plant that resulted from the mating of two distinctly different parental varieties

Heirloom – open-pollinated seeds, usually saved by a family and handed down over generations, definitely not genetically modified

Indeterminate – associated with tomatoes, these plants produce fruit until the first frost, require staking or support

Open Pollinated - seed that produces plants just like the parents, these allow growers to save seed for the following year

Scarify (scarification) – the scratching or nicking of seed (with hard coatings) to encourage it to germinate, can be done by nicking the seeds with a knife, rubbing the seeds with sandpaper, or shaking in a small container

Self-Fertile – producing viable seed when pollinated from its own pollen

Mostly Self-Pollinated: Barley, flax, oats, wheat, common beans, fava, lima bean, pea, runner bean, sweet peas, chicory, eggplant, endive, lettuce, okra, pepper, tomato. (Note: some of these plants outcross at 1-5% or more depending upon presence of pollinators, temperature, humidity, plant stress, etc.- including fava, runner bean, eggplant, pepper, tomato - for absolute genetic control, treat these plants as out-crossers and either hand-pollinate, observe minimum isolation distances, or plant only one variety at a time.)

Mostly Cross-Pollinated: Amaranth, corn, rye, cilantro, fennel, mustard, parsley, alfalfa, red & white clover, asparagus, beet, broccoli, cabbage, cauliflower, celeriac, celery, Chinese cabbage, cucumber, kale, kohlrabi, leeks, lettuce, melon, onion, parsnip, pumpkin, radish, rutabaga, spinach, squash, sunflower, swiss chard, turnip, watermelon (Note: these plants require isolation, hand-pollination, caging, etc. for effective genetic control - plants of the same species and rarely same genus esp. cabbage, squash, and melon families will intercross readily requiring careful pollination control to maintain true-to-type seed production. Biennial crops will require winter storage or over-winter protection in severe weather areas and may require replanting for seed production - esp. cabbage family, onions, radishes, carrots, etc.

Common Biennials: (require over-wintering prior to seed production 2nd season.) Garden and sugar beets, mangels, broccoli, broccoli raab, brussel sprouts, cabbage, carrot, cauliflower, celeriac, celery, chinese cabbage, chicory, collards, corn salad, endive, escarole, kale. Kohlrabi, leek, mustard greens, onions, parsley, parsnip, rutabaga, salsify, swiss chard, and turnip.

Resources:

Books:

Breed Your Own Vegetable Varieties. Deppe, Carol.

Garden Seed Inventory. Whealy, Kent.

New Seed Starters Handbook. Bubel, Nancy. Rodale Press. Emmaus, PA. 1988.

Save Your Own Seed. Hills, Lawrence D. Abundant Life Seed Foundation. Port Townsend, WA. 1989.

Seed to Seed. Ashworth, Suzanne.

Websites:

High Mowing Seeds: <http://www.highmowingseeds.com/>

International Seed Saving Institute: <http://www.seedsave.org/>

Save Our Seed Project Resource Guide:

<http://www.savingourseed.org/pages/ResourceGuide.html>

Victory Seeds: <http://www.victoryseeds.com/information/glossary.html>