

Specific Seed Saving Instructions for Common Vegetables

Arugula *Eruca sativa*

Arugula is self-sterile—insects must be able to reach the flowers of different plants for pollination to occur.

Different varieties of arugula will cross each other and must be separated by ½ mile for safe distance isolation. Arugula will not cross other members of the Cabbage Family.

To save seeds from arugula, leave plants in the ground to overwinter after harvesting leaves for eating

during the growing season. As with any member of the Cabbage Family, **allow seeds to ripen and dry on the plant** in the spring—but do not leave for long after they are dry or the pods will shatter and the seeds disperse—arugula pods are thin-walled, and shatter quickly after drying.

This trait of **readily throwing seed suggests that arugula may be recently domesticated**, since long-domesticated plants tend to hold their seeds for a longer time after maturing. Seeds from plants that

release their seeds early failed to be collected and replanted when agriculture started, thus genetically

favoring those plants which hold onto their seeds for a longer time after maturing.

Arugula seeds will last for 4 or more years if properly stored.

Basil *Ocimum basilicum*

Basil relies on insects for pollination, but can be reliably isolated by as little as 150 feet since most of the pollinating insects are small and don't travel far. **Different basil varieties will cross each other.**

Harvest seed heads as they dry and allow to finish drying in a warm, dry spot. Seeds are easily removed by crumbling the dried flower heads and then blowing away the chaff. You can practice over a plastic sheet at first until you get the hang of it.

Plants cut back after harvest will grow another set of leaves for harvest—and even produce seeds again—if your season is long and hot. A branch or two of each plant can easily be left to go to seed while collecting leaves for cooking with from the rest of the plant.

Basil seeds will last up to 5 years if properly stored.

Beans *Phaseolus spp.*

Beans are self-pollinated, and **different bean varieties do not commonly cross-pollinate** each other. Similarly colored varieties should be separated by enough distance to keep the vines from intertwining, to make them easy to distinguish at harvest. Allow pods to dry on the vines before picking and shelling, then finish drying the beans in a dry spot.

If you're eating your beans green, allow just one or two pods per plant to remain and mature for seed... **too many pods maturing on an individual plant will cause it to stop setting more beans** and concentrate on maturing the ones it has.

Pick beans for seed after the pods are ripe and have dried on the plants. Don't allow dried pods to get rained on as the beans may quickly mildew or sprout in their pods. When very dry many pods will split on their own to drop their seeds; the rest can be easily crumbled in the hands and the finer chaff blown away after removing the big pieces. Finish drying the beans in a dry spot indoors or under cover.

Bean seeds, properly dried and stored, will keep for 4 years.

Beets *Beta vulgaris*

Beets and Swiss chard will cross-pollinate, as they are from the same species. Beets/chard must be separated by wind-proof caging, bagging or up to 2 to 5 miles of distance to ensure purity as their wind-blown pollen is exceedingly small and light.

It's easy to **leave the base and center of chard plants to over-winter, flower and produce seeds** while still eating plenty of leaves. However, to save seed from beets you'll have to plant 20 to 30 plants to leave in the ground to over-winter if you want to get seeds (use a deep straw mulch to help in colder zones). You can harvest tasty beet greens for the first part of the season, and you can crowd the plants a bit. You don't have to pamper them with lots of room, water and fertilizers to get plenty of seeds in the spring—just make sure they're big enough to get through the winter and re-sprout.

Allow beet seeds to fully mature and become dry on the plants before harvesting. After final drying the seeds can be easily rubbed off the stems.

Beet seeds will last for up to 5 years if properly stored.

Broccoli *Brassica oleracea*

Insect-pollinated, biennial **broccoli will cross, and must be isolated from, all other members of *B. oleracea* by one mile for reliable distance isolation (see *Cabbage Family*)**. Since broccoli plants are mostly self-infertile, they should be planted in groups of at least 10 or more plants to maintain a decent genetic base and seed viability.

Harvest central heads and some secondary shoots for eating, then **leave a healthy side shoot or two on each plant to over-winter and flower for seeds**.

Broccoli cont.

Harvest seed pods before the pods split open naturally, but after they have fully matured and dried on the stalks—the seeds will not continue ripening after the plants or stems are cut. Finish drying upside-down in paper bags or hanging in bundles over a tarp. When the plants are completely dry, any seeds that haven't naturally fallen out of their seed pods are easily removed by crumbling the pods.

Broccoli seeds will last for 5 years if properly stored.

Cabbage Family *Brassicaceae*

Mostly self-infertile, bee-pollinated **members of the Cabbage Family (*Brassicaceae*) require up to a mile for distance isolation**. Members of the same species in the Cabbage Family will cross-pollinate, which presents a problem in species with many members. For instance collards, broccoli, Brussels sprouts, cauliflower, cabbage, kohlrabi and kale (except Siberian kale) are all ***Brassica oleracea*** and will cross each other. ***Brassica rapa*** includes all the turnips, Chinese mustards and Chinese cabbages. Different species within the Cabbage Family will not cross.

Brassicas are mostly biennial—they grow and mature in the first season, then over-winter before setting seed in spring of their second year. In colder areas where **Brassicas** don't make it through the winter (they're very hardy), they can be over-wintered in pots in the greenhouse and then transplanted into the garden in early spring to flower and produce seeds.

Since **most Brassica seeds remain viable for four or more years**, four varieties of a single species can be grown at a time and seed stocks maintained if only one variety is allowed to flower and set seed each year.

Alternate-day caging is another option for isolating two or three crossable varieties at a time (the cages must be removed periodically to allow bees to pollinate the flowers).

Brassica seeds will not continue to ripen after harvesting, so allow them to mature and dry completely before removing them from the parent plants—but don't tarry, either. In many **Brassicas** the seed pods shatter and release their seeds just days after they have matured and dried, especially in hot, dry weather.

The Cabbage Family includes the following species:

- ***Brassica juncea***: mustard greens.
- ***Brassica nigra***: black mustard.
- ***Brassica napus***: rape, Siberian kale, rutabaga.
- ***Brassica oleracea***: broccoli, Brussels sprouts, cabbage, cauliflower, collards, kale.
- ***Brassica rapa***: turnip, Chinese cabbage, Chinese mustard.
- ***Eruca sativa***: arugula, roquette, rocket salad.
- ***Raphanus sativus***: radish, daikon.

Cantaloupe *Cucumis melo*

Cantaloupes rely on insects for pollination, and will cross other members of *C. melo* (see a list under Squash Family). Different varieties of *C. melo* should be separated by ½ mile for safe isolation.

Pick cantaloupes for seed saving when the tendril nearest the melon is completely dried, then **store the harvested cantaloupe intact for another 3 weeks before removing and cleaning the seeds.** Fermenting the seed/pulp mixture for 3 to 4 days before cleaning can help prevent passing disease and fungus from generation to generation, but is not required. See Cleaning Wet Seeds.

Cantaloupe seeds will keep for up to 5 years if properly stored

Carrots *Daucus carota*

Insect-dependent carrots—including **wild and cultivated varieties of Queen Anne's Lace**—will cross-pollinate and must be separated by ½ mile for safe isolation. In areas where Queen Anne's Lace is a common weed, it will be slightly more difficult to save carrot seeds as caging would exclude the small insects the carrots need for pollination. In this case hand-pollination will be needed... see Carrot Family, below.

Although it is true you can replant carrot tops and get a seed crop from them in the spring with care (they don't root quickly), it takes only a small area to let a few carrots remain for seed every year or two.

Allow carrot seed umbels to ripen and dry on the plant before harvesting and cleaning. After fully drying, the seeds crumble readily from their umbels. **Carrot seeds will last 3 years if properly stored.** See Carrot Family

The Carrot Family includes the following species:

- *Apium graveolens*: celery and celeriac.
- *Anethum graveolens*: dill.
- *Anthriscus cerefolium*: chervil.
- *Coriandrum sativum*: coriander, cilantro.
- *Daucus carota*: carrot.
- *Foeniculum vulgare*: fennel.
- *Petroselinum crispum*: parsley.

Chives *Allium schoenoprasum*

Commonly reproduced by division of bulbs in the garden, insect-pollinated chives also produce viable seeds. **Chives cross with other chives** (except Garlic chives, which are *A. tuberosum*); *separate varieties by one mile for safe distance isolation.*

Let a few clumps of chives flower in the spring and collect the seeds when flower heads are thoroughly dry. The seeds will easily crumble out of the dried flowers.

Short-lived *Allium seeds last just one or two years with good germination... they are best replanted annually.*

Cilantro *Coriandrum sativum*

Quick-to-bolt cilantro (or coriander) crosses with other cilantro varieties and can be safely isolated with ½ mile of separation between varieties. Allow seeds to dry completely on plants before harvesting.

Cilantro seeds will last for several years when properly stored.

Cucumbers *Cucumis sativus*

Cucumber varieties will cross each other (except Armenian cucumbers, which are actually *C. melo*) and should be isolated by ½ mile for reliable distance isolation between varieties.

Cucumbers should be left on the vine to ripen to well past the eating stage before being harvested for seed, and then aged another 20 days in the cuke before the seeds are removed and cleaned.

Cucumber seeds are long lasting and may remain viable for as long as 10 years under good conditions.

The Squash Family includes the following species:

- *Citrullus vulgaris*: watermelons, citrons.
- *Cucumis melo*: muskmelons, cantaloupes, honeydews.
- *Cucumis sativus*: cucumbers.
- *Cucurbita maxima*: banana, buttercup, hubbard and turban squashes, some pumpkins.
- *Cucurbita mixta*: cushaw (except golden) squashes.
- *Cucurbita moschata*: butternut, golden cushaw and cheese squashes.
- *Cucurbita pepo*: acorn, crookneck, scallop, spaghetti and zucchini squashes, small striped and warty ornamental gourds, some pumpkins.
- *Lagenaria siceraria*: hard-shelled gourds.
- *Luffa acutangula*: angled luffas.
- *Luffa aegyptiaca*: smooth luffas.
- *Sechium edule*: chayotes.

Squashes should be fully mature before harvesting—for summer and other soft squashes, this is well past the eating stage. Harvest when skins are hard and leathery. Melons should be fully ripe before they are picked, as some will not complete ripening of their seeds if they are picked too soon. Harvest melons only after the vine tendril nearest the individual melon in question has dried and withered, and wait another 3 weeks before opening the melon to harvest the seeds. Clean the seeds according to directions in [Cleaning Wet Seeds](#).

Allow dry-seeded members of the Cucurbit family (i.e., gourds, luffa) to dry on the vines until the shells are dried and the seeds inside rattle if shaken. Open the gourd and clean the seeds by winnowing.

After harvesting wet-seeded Squash family fruits, store the unopened fruits for another 20 days before removing the seeds. This is because some squash family seeds gain in size and viability for 20 days after

harvesting. After the 20 day waiting period has passed, cut the fruits open and remove the seeds to prepare them for storage.

Squash seeds can be fermented for higher germination and better disease-resistance (see [Why Ferment Some Seeds?](#)—don't ferment seeds if they appear to have already naturally fermented while waiting in the wet fruit, as evidenced by the smell and appearance of the seeds and pulp).

Cucumber/(squash continued)

After fermentation, clean the seeds by pouring off pulp and dead seeds (seeds which will float are dead and should be discarded). **Use the same cleaning directions as for tomato seeds** (see [Cleaning Wet Seeds](#)). Whether you've fermented the seeds or not, rub them underwater between your fingers gently but thoroughly while cleaning them, to remove the naturally occurring gel from their coats. Dry the cleaned seeds on a shiny surface (they will stick to paper) until they are brittle, but—as always!—do not use heat.

Dill *Anethum graveolens*

Dill is insect pollinated and different varieties may cross unless separated by one mile. Harvest individual heads as they dry on the plants, since they ripen over a period of time.

Dill seeds remain viable for 3 or more years if properly stored. Also see [Carrot Family](#).

Eggplant *Solanum melongena*

Self-pollinating Eggplants can be safely isolated by 50 feet of separation.

Eggplants should be left on the plants until well past the eating stage before harvesting for seed. The eggplants will have gone past their normal, ripe color and become translucent and dry (usually a dull, unattractive whitish, yellowish, or brownish color).

It's a good idea to **keep eggplants off the ground during ripening, since they may begin to rot** when they rest on the ground. Clean seeds according to the wet-cleaning process outlined in [Cleaning Wet Seeds](#).

Long-lasting eggplant seeds will remain viable for 5 or more years

Lettuce *Lactuca sativa*

Lettuce is self-pollinating, but plants can cross under some circumstances. 25 feet of separation is generally sufficient to prevent crossing, however.

While each flower opens only during the morning of one day, the flowering period is long and there are almost always flowers blooming on the plants. This means that **a flowering plant will have flowers and seeds in all stages of maturity.**

Gather dried seed heads (they are easy to recognize) every couple or three days as they ripen and dry, or **wait until most seed heads have dried and hang the plant upside down** over a tarp or in a paper bag (harvest dry seeds if rains threaten).

Lettuce seeds can remain viable for 3 years if properly stored.

Onion *Allium cepa*

Insect-pollinated Onion Family plants need up to 1 to 3 miles for safe isolation. Closely planted groups of plants can be caged or bagged and then hand-pollinated.

To hand-pollinate, remove covers and use a fine, light paintbrush to mimic the action of visiting insects,

thoroughly mixing pollen between several flowers. Make sure to hand-pollinate the flowers during a time (such as early morning or late evening) when insects are not present, and replace covers quickly and securely.

Allow seeds to ripen and dry on the plants, then harvest quickly to avoid losing seeds. **Onion seeds are short-lived and should only be stored for one or two years** before planting.

Parsley *Petroselinum crispum*

Insect-dependent and biennial, **parsley can cross other parsley varieties and should be separated by 1 mile** for reliable distance isolation. Allow seeds to mature and dry on the plants before harvesting.

Parsley seeds can be kept for 2 or 3 years if properly stored. See [Carrot Family](#).

Pea, Garden and Snow *Pisum sativum*

Self-pollinating peas do not readily cross—varieties separated by 50 feet are reasonably safe from crossing. For even greater certainty for preservation purposes, they can be bagged or caged.

Allow pods to reach full size before harvesting the seeds—**ideally, pick pods after they have dried on the vines. Peas are susceptible to mold if wetted after drying, however.** If peas have reached full size, they can be harvested before they are dry if rains threaten. After the pods are completely dry, they crumble easily to release the seeds.

Pea seeds remain viable for 2 years if stored properly. See also [Bean Family](#).

Peppers *Capsicum spp.*

Self- or insect-pollinated, **pepper varieties of the same species will cross-pollinate.** There is no crossing between varieties of different species, however. You can safely grow one hot or sweet pepper (*C. annuum*) and one Tabasco pepper (*C. frutescens*) without danger of their crossing.

Peppers within the same species can be safely isolated by 500 feet of separation, or they can be caged since the plants are not overly large. **Allow peppers to ripen and dry fully on the plants before harvesting the pods.** Wash your hands thoroughly with soapy water after harvesting hot pepper seeds, since the residues will burn eyes and lips for some time after contact!

Pepper seeds will keep for 2 or 3 years if properly stored.

Pumpkin *Cucurbita spp.*

Pumpkins can belong to either *C. maxima* or *C. pepo*. Varieties within these species will cross each other, but *C. maxima* will not cross *C. pepo*. Find your pumpkins' species from the seed company where you purchase them, or look them up in Suzanne Ashworth's excellent seed saving resource, *Seed to Seed*.

Pumpkins produce wet seeds (see [Cleaning Wet Seeds](#)). **Store fully-ripe pumpkins for 3 weeks after harvesting** before removing and cleaning the seeds.

Pumpkin seeds, like those of other members of the Squash Family, benefit from fermenting after being removed from the fruit—see [Why Ferment Some Seeds?](#).

Pumpkin seeds will keep for 5 or more years if properly stored. See also [Squash Family](#).

Tomatoes *Lycopersicon lycopersicum*

Almost all modern tomatoes can be safely grown without isolation and will not cross—'currant' tomatoes (such as Cherry Tomatoes), and 'potato-leafed' tomatoes (such as Brandywine) are possible exceptions and may cross other currant or potato-leaf varieties. Grow as many standard tomatoes as desired, but grow only one currant tomato or one potato-leaf tomato at a time to ensure purity (or cage them, or separate varieties by 500 feet). Currant and potato-leaf tomatoes will not usually cross with common tomato varieties.

It's best to **not plant all a valuable variety's seeds in one season until you are sure it doesn't cross with any other varieties you grow.**

Allow tomatoes to ripen thoroughly on their vines to *at least* the eating stage before harvesting them to collect their seeds. Upon harvesting, **tomato seeds are best fermented in order to remove a germination-inhibiting gel which covers the seeds, and to kill diseases.** In nature, fermentation of fallen ripe fruits removes this gel, and this process is imitated when preparing tomato seeds. See [Fermenting Seeds](#) and follow the directions.

If fermenting tomato seeds seems too much trouble, they will still germinate if the slippery gel surrounding the seeds is carefully rubbed off while you're cleaning them. Seeds treated this way will germinate, but they will not have had the protection of the fermentation process killing disease organisms. If you noticed any problems with your plants (leaves spotting or dying, inexplicable wilting, etc.), the extra trouble of fermentation will be well worth the effort.

Dry your tomato seeds on a piece of glass or a shiny plate—the wet seeds will stick to paper and be difficult to remove without damaging them.

Tomato seeds will store safely for 4 or more years after being properly dried and stored.