



SEEDS

Socio-Economic & Environmental Development Solutions

www.sendseedstoafrika.org

How to Save Pure Seeds!

www.howtosaveseeds.com

Amaranth

Amaranthus spp.

Amaranth is self-pollinating, but will also cross-pollinate (possibly even between different species). Further, wild amaranths are common in most areas worldwide. Individual heads can be bagged to allow growing several varieties in proximity or to ensure that wild plants don't cross the plants you're growing. From ½ mile (green amaranths) to two miles (grain amaranths) are needed for reliable distance isolation.

Grain amaranths may need support to keep the plants from falling over as they mature because of their large, heavy seed heads. Collect the seed heads as they dry on the plants and store in closed paper bags to finish drying (many of the seeds will shed naturally). **Don't let the seed heads get wet after**

they dry. Chaff easily blows away after seed heads are crumbled—watch for thorns or prickles in some plants!

If germination is slow, lightly stir the soil's surface... **amaranth seeds need some sunlight after a period of darkness to germinate.** This trait adapts them to disturbed or overturned soil, hence one of their common names, "pigweed," so-called because they would germinate in hordes in an area after pigs had passed and turned the soil, exposing their seeds to the light so they could germinate.

Cut seed heads when they are becoming dry and hang them upside-down in large paper bags or over tarps to collect the tiny seeds. The dried heads can easily be crumbled in the hands and the chaff gently blown away if you're in a hurry.

Amaranth seeds can last for many years if properly stored, and can sprout in the garden even after several years in the soil.

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.
See also [Bean Family](#).

Bean Family

Leguminosae

Members of the Bean Family are self-pollinating and crossing is uncommon, but rare varieties can be separated by 100 feet to insure purity.

In most cases, **saving bean seeds is as simple as waiting for the pods to dry on the vine, collecting the seeds, and completely drying them** before storing in jars. Separate different bean plantings by enough distance to avoid having their vines intertwine, however, or harvesting can become troublesome with similarly-colored varieties.

A danger with members of the Bean Family is late summer rains, which can moisten seeds drying in their pods while still on the vine. Too much moisture during seed maturation lowers the viability and storage life of the finished seeds, and can even cause them to sprout or mildew while still on the vine. **Pick mature, dry pods every day or two and don't save seeds which have been wetted by rains.**

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

The Bean Family includes the following species:

Cicer arietinum: garbanzo beans, chickpeas.

Dolichos lablab: purple hyacinth bean, lablab.
Glycine max: soybean.
Lens culinaris: lentil.
Phaseolus acutifolius: tepary beans.
Phaseolus limensis: lima beans.
Phaseolus lunatus: butter beans.
Phaseolus vulgaris: common bush and pole beans.
Pisum sativum: garden and edible-podded peas (except cowpeas, chickpeas), field peas (*P. sativum* var. *arvense*).
Vigna aconitifolia: mat beans, moth beans.
Vigna angularis: adzuki beans.
Vigna radiata: mung beans.
Vigna unguiculata: cowpeas.
Vigna unguiculata var. *sesquipedalis*: yardlong beans.
Vicia faba: fava beans.

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.**

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. See also [Cabbage Family](#).

Cabbage

Brassica oleracea

Insect-pollinated, biennial **cabbage must be kept isolated from all other members of *B. oleracea*** (see list under [Cabbage Family](#)) by one mile. Since cabbages are mostly self-infertile, they should be planted in groups of at least 10 or more plants.

Since you can't have your cabbage seeds and eat 'em, too, you'll have to **plant a separate small area with 15 or so cabbages to leave alone to over-winter and produce seed** (it's fun to watch the new cabbage shoots burst strangely out from the cabbage heads in the spring). Pick seed pods after they have fully matured and dried on the plants, ideally just after the pods have become brittle and just before they split and spill their seeds.

Cabbage seeds can remain viable for 4 years if properly stored. See also [Cabbage Family](#).

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... see [Alternate-Day Caging](#)).

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. See also [Squash Family](#).

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](#).

Carrot Family

Umbelliferae

Self-sterile *Umbelliferae* (also known as the Carrot Family) are dependent on insects' bringing pollen from other plants for fertilization. *Umbelliferae* require up to 1 to 3 miles for reliable distance isolation. Members of different varieties within the same species will cross, but members of different species will not cross.

Bagging or caging can be used to separate varieties of the same species, in which case hand pollination is necessary. Use a soft-bristle brush to transfer pollen between umbels on different plants during the time the tiny individual flowers are blooming (up to 30 days per umbel).

Alternate-day caging can be used for growing two varieties of the same species without hand pollinating, if you are certain that no crossable wild or domesticated varieties of that species are growing within a mile or so—but whether any of your neighbors are growing different varieties of the same species (e.g., carrots and carrots, dill and dill, etc.) within a mile would be difficult to verify.

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.

Cauliflower

Brassica oleracea

Insect-pollinated, biennial **cauliflower will cross other members of *B. oleracea*** (see list in [Cabbage Family](#)) and needs 1 mile for safe distance isolation. Cauliflower plants are mostly self-infertile, and should be planted in groups of 10 or more plants for continuing viability.

Since cauliflower heads don't resprout after harvesting, try one of two ways to get seeds. By cutting carefully, you can **leave a branch or two of cauliflower head on the plant to heal and flower in the spring**. Probably more reliable would be planting a separate planting just for the seed—these plants would need half or less of the usual amount of room, water and nutrients, as small heads from 10+ plants would still produce plenty of seeds.

Pick seed pods promptly *after*—not before—they fully mature and dry on the plants. They won't ripen further after the plants are picked.

Cauliflower seeds will last up to 5 years if properly stored. See also [Cabbage Family](#).

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. See *Umbelliferae*.

Corn

Zea mays

Wind-pollinated **corn requires up to a mile for safe isolation** in exposed areas. Exact isolation distances will depend on neighboring growers and wind patterns, windbreak protection, etc. (corn pollen is relatively heavy and falls to the ground quickly under quiet conditions).

Instead of distance, "time isolation" can also be used—plant a first, faster-maturing corn crop early enough so that its ears have been pollinated, and their silks dried, before a second, later-maturing crop's tassels have begun to shed pollen (see [Time Isolation in Preserving Existing Plant Varieties](#)).

Corn is not self-pollinating—pollen must be carried by the wind from tassels of one plant to silks of another for pollination to occur. Seeds which do not get pollinated will not form kernels. For this reason **it is important for good pollination to plant corn in blocks instead of in a single long row.**

Allow corn ears to mature and dry on the stalks, but harvest as soon as the ears are dry to keep them from getting rained on or the kernels may rot or sprout. Watch also for ants attacking kernels. Let corn kernels continue to dry thoroughly on the cobs (with husks shucked) in a protected spot. After the kernels are thoroughly dry, rub them off the ears with your hands.

Be sure to harvest seeds from at least 100 plants to keep your seed population strong from year to year (see [How To Avoid Inbreeding Depression in Corn](#), below).

Sweet corn seeds remain viable for up to 3 years when properly stored; starchier dent, popcorn and flint corns can remain viable for 5 or more years.

How To Avoid Inbreeding Depression in Corn

A prime consideration when growing corn for seed is the size of the 'parent' planting. **Corn represents an extreme example of the necessity for growing a large enough number of plants to avoid 'inbreeding depression'.**

Inbreeding depression—weakening of a population by too narrow a genetic base—is a direct result of collecting seed from too few parents.

Once a batch of seed is produced from too few parents, the genetic base of that group of seeds is permanently narrowed unless new genetic material can be introduced. Thus, an inbred seed batch's genetic base can be broadened by mixing the batch with a healthy batch of the same variety grown by a different grower.

Inbreeding is better avoided than 'fixed', however. **Grow at least 200 corn plants to avoid inbreeding depression.** Remember to collect some seeds from each plant, and make sure that at least 200 plants are included in the planting, with at least 100 allowed to produce seed. If too-few plants survive to produce a healthy seed batch, mix the batch with more seeds from another batch before replanting.

Cotton

Gossypium hirsutum

Insect-pollinated **cotton plants need at least 800 feet for reliable distance isolation.** Alternate-day caging is practical, since the plants are not overly large. In most urban locations it is unlikely that neighbors will be growing cotton, but precautions should be taken if you are growing a rare or difficult-to-replace variety.

Allow cotton seed pods ('bolls') to pop open completely, exposing the cotton fibers within, before harvesting the seeds. The small bean-sized seeds are found within the cotton and are fairly difficult to remove in any quantity—it's easy to see how important the cotton gin is to the cotton industry after you've cleaned a few cotton seed heads!

Cowpeas

Vigna unguiculata

Cowpeas are self-pollinated, and **different varieties of cowpea do not commonly cross-pollinate each other.**

Allow pods to dry on the plants before harvesting, and don't allow the dried pods to get rained on. Try to avoid using seed pods for seed saving after they have been thoroughly wetted as the seed may be compromised (or even sprout in the pods!).

Cowpea seeds, properly dried and stored, will keep for 3 or more years. See also [Bean Family](#).

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. See [Squash Family](#).

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](#).

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.

Melon, Honeydew and Musk

Cucumis melo

Melons will cross other members of *C. melo* and should be separated by ½ mile for reliable distance isolation. Melons produce wet seeds. Allow melons to ripen on vines until skins are hard, then store for an additional 3 weeks before removing and cleaning their seeds. See [Cleaning Wet Seeds](#).

Melon seeds can be kept for up to 5 years if properly stored. See also [Squash Family](#).

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](#).

Radish

Raphanus sativus

Radishes will cross other radishes including daikon, but not turnips (*Brassica rapa*) or other members of the Cabbage Family. Separate radish and daikon varieties from each other by ½ mile for safe distance isolation.

Pick pods after they dry completely on the plant. Pick every day or two, as the pods will break open naturally to release their seeds soon after drying.

Radish seeds can last 4 or 5 years if properly stored. See also [Cabbage Family](#).

Squash Family

Cucurbitaceae

Bee-pollinated members of the Squash family (*Cucurbitaceae*), require up to a mile for distance isolation. **Different species of *Cucurbitaceae* do not cross-pollinate, so one variety from each species can be grown together without danger of crossing.** For instance, one variety of crookneck or zucchini (*Cucurbita pepo*), one butternut or acorn squash (*Cucurbita moschata*), one watermelon (*Citrullus vulgaris*), one cantaloupe or muskmelon (*Cucumis melo*), one luffa (*Luffa aegyptiaca*), a hard gourd (*Lagenaria siceraria*) and a cucumber (*Cucumis sativus*) could all be grown together without crossing each other.

Find out from your seed company which species your varieties belong to, or consult Suzanne Ashworth's [Seed to Seed](#) for a comprehensive listing of *Cucurbitaceae* varieties

and the species to which each belongs (there are no reliable, general rules for non-botanists to determine species).

Insect-pollinated and are self-infertile, **if *Cucurbits* are isolated by [caging](#), bees must be allowed to reach and pollinate the different varieties on alternating days** (see [Caging](#)).

***Cucurbits* can also easily be pollinated by hand** (use pollen taken from the same variety). After hand-pollinating the flowers, replace the cages, or bag or tape individual flowers shut to prevent further pollination. For more detail, see [Seed to Seed](#).

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).

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.

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.

Sunflower

Helianthus spp.

Insect-pollinated sunflowers need from ½ to 3 miles for isolation. Wild sunflowers—which will cross most cultivated

varieties—are very common, making reliable distance isolation difficult at best. Uncommon species (such as Silver-Leaf Sunflower, *H. argyophyllus*) can probably be grown without danger of crossing, but most varieties will require bagging or [caging](#) for certain isolation. Caging is not practical for most sunflowers because of their size.

Since some varieties are self-infertile and have to be pollinated by pollen from other plants, caged or bagged sunflowers should be hand pollinated. Once a day while florets are blooming (one to two weeks per head), unbag two heads at a time and gently rub them together or use a soft-bristle paint brush to transfer pollen from one head to another. Hand pollinate a different pair of heads each time if possible. Rebag seed heads promptly after pollinating to keep insects from interfering.

Allow sunflower heads to dry on the plants before harvesting whole heads and hanging them upside-down in a protected spot to complete drying. The seeds can then be removed from the heads by vigorous rubbing. Store and plant the seeds in their kernels for protection.

Sunflower seeds can be kept for 5 or more years if properly stored.

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.

Watermelon

Citrullus vulgaris

Watermelons will cross other watermelons and varieties should be separated by ½ mile. Watermelons produce wet seeds and should be allowed to ripen to past the eating stage before harvesting, since seeds do not continue ripening significantly after melons are harvested. Pick after the tendril

nearest the melon has completely withered and dried, then store an additional 3 weeks before removing and cleaning the seeds according to directions in [Cleaning Wet Seeds](#).

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

Cleaning Wet Seeds

Wet seeds are easy to clean, though some need the additional step of fermentation. Seeds which require fermentation should be cleaned *after*—not *before*—fermenting (see [Fermenting Seeds](#) for directions on how to ferment seeds).

Allow the fruits to fully mature on their plants before harvesting. See [Seed Saving Instructions for Common Vegetables](#) for details on how to judge when seeds have fully matured for particular varieties—in many, the fruits will be well past the eating stage.

To clean wet seeds, scoop the seeds from the fruit, pulp and all. Pour the seeds and pulp into a large, sloping bowl and add water. **Healthy seeds will sink to the bottom of the bowl, while dead seeds and most of the pulp will float.** Use your fingers to gently separate all the seeds from the pulp.

Then, **to remove the pulp and dead seeds, carefully pour the extra water with the floating pulp and dead seeds from the bowl.** Pour quickly enough for dead seeds and pulp to pour off the top, and slowly enough so that the heavier, good seeds remain safely on the bottom. By repeating this rinsing and pouring process several times, the seeds can be gotten very clean (getting seeds as clean as possible helps to keep them from sticking to whatever surface you dry them on).

Drying Wet Seeds After Cleaning

To initially dry your seeds after cleaning, drain them of excess moisture in a strainer. Pat the bottom of the strainer with a cloth towel to pull extra water from the seeds after they have drained. Then **spread the seeds on a piece of glass or a shiny ceramic plate to dry (they will stick to paper, even waxed paper)**. Place the glass or ceramic plate in a cool, dry shady spot for several days.

After the seeds are dry, they can be carefully removed from the glass or plate and final-dried before being stored in jars (see [Properly Drying Desiccation-Tolerant Seeds](#)).

Treating Seeds for Viability and Disease Control

Seeds can transmit diseases from parent plants to succeeding generations, lowering their productivity and even completely preventing them from producing. Simple treatments exist, however, for controlling many seed-borne diseases. Two such treatments available to home gardeners include *fermentation* and *hot water baths*, both used on wet seeds.

Why Ferment Some Seeds?

Fermenting some wet seeds can dramatically improve their ability to sprout. Fermentation removes germination-inhibiting substances from seed coats, makes them more permeable to water, and also helps reduce or control seed-borne diseases (for healthier seedlings).

Purposely **fermenting wet seeds mimics the natural process of fermentation** that occurs when ripe fruits are eaten by animals or drop to the ground and rot. When we intervene to keep seeds from fermenting naturally, it becomes

necessary to ferment them artificially so they can complete their natural ripening cycle.

Fermentation is needed for tomato seeds (in order to remove a germination-inhibiting gel), and can also benefit Squash Family and eggplant seeds, though more care must be taken with these to avoid premature sprouting. Ferment Squash Family seeds for only a day-and-a-half or so, eggplants a little longer.

How to Ferment Seeds

To prepare seeds for fermenting, **simply squeeze or scoop the seeds—together with the pulp that surrounds them—into a jar with a little water** (about half as much water as seeds and pulp). There is no need to include more pulp than naturally comes with the seeds. Store this seed/pulp mixture in a warm place (75 to 85° F) for 1½ to 5 days (depending on the seed type and whether conditions are warmer or cooler).

Fermentation will be evidenced by bubbling and/or by the formation of a white mold on the surface of the mixture.

As soon as the bubbling or mold have been evident for a day or so, pour the mix into a bowl and clean according to the directions given earlier in the section [Cleaning Wet Seeds](#).

Watch closely, as **seeds left fermenting too long (especially above 80° F or so) may germinate**, ruining their chances for storage. Once the seeds start to 'imbibe' or swell due to taking on water, they will have begun their internal process of germination... by the time their tiny roots have begun to emerge, it is far too late to try and dry them for storage. Sprouted seeds can be planted immediately and grown out (depending on season), but they will die if they are dried out for storage once they have begun to germinate.

Experience will tell you how long you can ferment seeds under your conditions before they begin to sprout.

Eggplant and squash seeds germinate more readily than tomatoes, so they should only be fermented for a couple days or so. Squash seeds, particularly, are quick to germinate—sometimes even sprouting in well-ripened squashes while they are still on the vine!

It's not *required* to ferment squash or eggplant seeds, though it increases their germination rates and kills some seed-borne diseases. In general, when temperatures are kept between 75 and 80° F or so, fermenting is safe and beneficial and will be safely completed before seeds begin the process of germination.

Compliments of www.howtosaveseeds.com