

8 EASY SEEDS TO SAVE IN NORTH FLORIDA

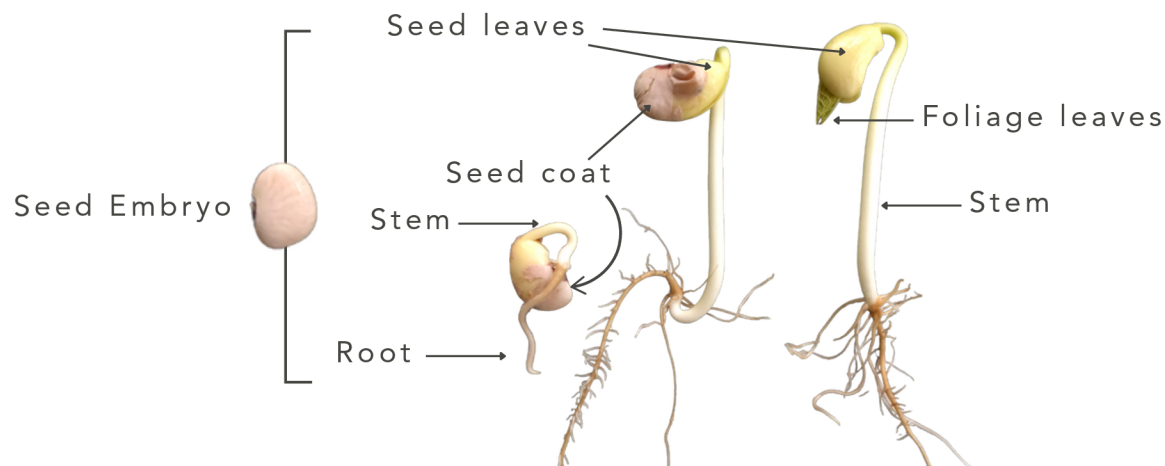
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Working Food | Gainesville, Florida



If you can grow plants, you can save their seeds too! Watching plants complete their full lifecycle, from seed to seed— fosters a special relationship with plants and a deeper understanding of how they exist. We become part of a process that plants have been perfecting for millions of years: making seeds and dispersing them to survive. By saving and sharing seeds, we continue a tradition that has been central to human history and has only recently faded from common practice. The plants do all the work, we just need a bit of knowledge and patience to support them through their reproductive journey to harvest good seeds. The reward is a bountiful supply of locally adapted seeds—one of the best ways to strengthen food security and help your community! It's easy, fun, addictive, and might save you some money on seed purchases. The only thing better than growing your own food, is growing that food from your own seed!

BASIC SEED BIOLOGY

Seeds are the offspring of their parent plant (or plants). Inside each seed is everything the future plant needs for its early life stages — an embryo with the genetic code that defines its unique characteristics, and a food reserve to sustain the seed during dormancy and early stages of germination. **Think of seeds as a baby plant in a box with its lunch.** The protective seed coat is the box, the living embryo is the baby plant, and the food reserve (seed leaves) is the lunch.



All seeds are enclosed within some type of ripened fruit, which can be categorized as **either dry or wet-seeded**. The fruit may be familiar (i.e. a tomato or watermelon); a pod of some kind (i.e. beans and peas); or a seemingly naked seed whose fruit is adhered to the seed (i.e. corn, lettuce, many herbs and flowers). The seed and fruit are the result of sexual reproduction between the male (pollen-giving) part of a flower and the female (pollen-receiving) part of a flower. If successful, the flower dies back and the fruit and seed begin developing. For some plants, this can happen within the same flower (self-pollinating), while in others, it requires pollen from a different flower, or even an entirely different plant (cross-pollinating). Some are more fluid in their reproductive strategies, accomplishing both self and cross-pollination! This flexibility has resulted in a stunning variety of flower and seed structures, making reproduction in the plant world a fascinatingly complex and beautiful process.

DRY SEED EXAMPLES



Left: arugula seeds like other brassicas (kale, collards, mustards, broccoli, radish etc.) have multiple small seeds inside dried pods. Center: cosmos flower seeds are fused to their outer fruit and commonly referred to as just a seed. Many flowers and herbs are similar. Right: Lima beans are inside dried pods.

WET SEED EXAMPLES



Left to right: tomato, horned melon and winter squash seeds are all encased inside a fleshy and edible fruit.

Genetic Diversity Matters

All crops benefit from genetic diversity. It is essential to the health of the crop and its ability to adapt to changing environmental conditions. The opposite of high genetic diversity is inbreeding, which can be detrimental to plant health and adaptability. We can't always see the diversity especially in a crop that looks uniform, but there could be hidden genes responsible for flavor, vigor, disease resistance, drought tolerance, and more.

The best way to keep diversity high, is to save seeds from as many plants as possible — even among plants that are naturally more inbred and self-pollinated. Allowing different varieties to cross-pollinate and create new genetic mixes and varieties is another way to increase crop genetic diversity. The number of plants recommended to grow and save from is listed in the table at the end of this booklet.

Easy Seeds to Save!

Whether you're a new gardener or an experienced farmer, **the easiest plants to start saving seeds from are those whose seeds ripen at the same time the crop is ready to eat.** This includes tomatoes, peppers, melons, and winter squash. These crops require minimal additional effort, such as removing and cleaning the seeds, and some pre-planning to avoid cross-pollination, if necessary.

Although the seeds of okra and most legumes like cowpeas, beans, and peas take longer to develop past the point of fresh eating, they are easy to harvest and worth the effort. A crop like lettuce is often considered easy to save, according to many seed saving guides because they are self-pollinated and require a minimum of only one plant to produce seeds. However, while lettuce is quick to produce edible leaves (30-50 days), it can take up to 200 days to reach seed maturity! The seeds are also frustratingly fluffy, easily blow away, and at this stage have irritating and sticky sap in the stems.

The longer a plant grows, the longer it's exposed to harsh weather, insects, and disease. They may also grow much bigger and require additional maintenance. For these reasons, we do not consider these and other leafy greens or root vegetables easy to save.

Here are 8 easy seeds you can start saving now!

"A seed makes itself. A seed doesn't need a geneticist or hybridist or publicist or matchmaker. But it needs help. Sometimes it needs a moth or a wasp or a gust of wind. Sometimes it needs a farm and it needs a farmer. It needs a garden and a gardener. It needs you."

~Janisse Ray, *The Seed Underground: A Growing Revolution to Save Food*



1: Amaranth

Whether grown for its edible leaves or seeds, amaranth is very easy to save as it readily flowers and produces abundant seeds shortly after. **The only precaution is that amaranth produces a lot of seeds!** This makes it a great survival crop due to its adaptability, but also makes it somewhat weedy. As the flower heads develop, check them periodically by rubbing the lower sections between your fingers to see if small, round, black or white seeds are present. Once seeds are visible, harvest the entire flower head and bring it indoors to dry, either upside down in a paper bag or flat on a tray to catch the seeds. This will prevent a lot of seeds from dropping to the soil. You can also harvest seeds continuously from the plant without cutting, as they **ripen from the bottom up**. Rub between your palms to release seeds. Amaranth flowers can be prickly, and the dust from dried plant material may irritate your skin or lungs, so gloves and a mask are recommended when further processing them. They dry easily given their small size.



2: Legumes

Legumes such as English peas, Southern Peas, pigeon peas, yardlong, Lima and regular beans, need a bit more time to develop and dry on the plant after their fresh-eating stage, but it's easy to let some pods mature for seed saving. Wait for the pods to change from green (immature) to yellow, and finally to brown or tan as they dry. The pods may become leathery or wrinkled, eventually drying to a brown/tan color, indicating that seeds are mature. It may be necessary to harvest a little early if wet weather is on the way, which can cause moldy pods and seeds. Some dried pods will easily shatter and split open when fully dried. Fully dried legumes are easier to shell. Watch out for weevils - small beetles that can damage seeds, especially Southern Peas and yard long beans. Fully dried seeds can be frozen to kill any weevil larvae. Alternatively, adequate dry storage conditions can prevent weevil, fungal, and bacterial growth.



Lima beans on the left harvested early when pods were still green. The seeds are larger, containing more water since they have not yet begun the process of drying down, which prepares them for dormancy. If left to dry in suitable conditions, they will shrink, dry, and be viable. Ideally they are harvested when they look more like the ones on the right: smaller, drier, and tucked inside a tan-colored pod.

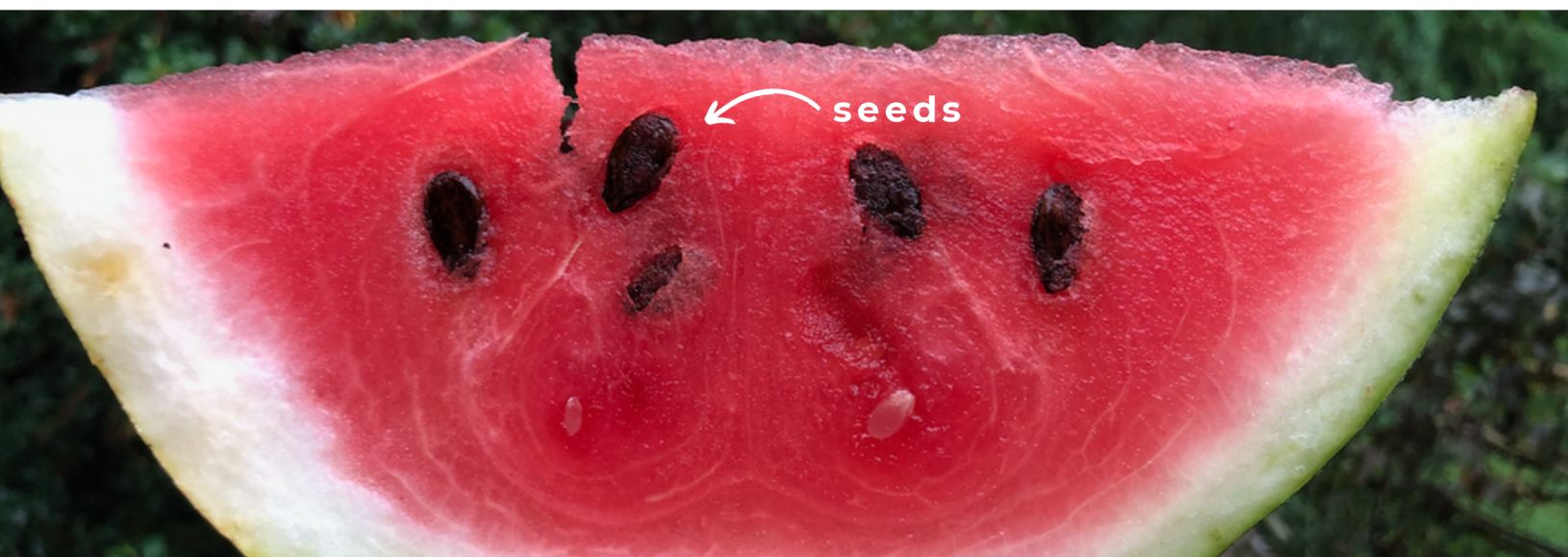


Cowpea weevils are small beetles that lay 1-3 eggs on each seed. The larva hatch and eat the seed, then emerge as adult beetles, leaving round holes as they exit. They can cause significant damage to seeds if left unchecked. Keeping seed very dry, freezing, or dusting with diatomaceous earth helps reduce this problem.

Photo credit: L.J. Buss, University of Florida

3: Melons

Cantaloupe and watermelon seeds are mature at the same time the fruit is ready to eat. **Simply save the seeds while enjoying the fruit, then wash and dry them.** Lightly fermenting seeds for 24-48 hours is recommended but not necessary. Fermentation may help reduce surface seed diseases, and loosens any flesh attached to the seed. To ferment, place the seeds in a jar with distilled water (not chlorinated tap water). Stir the mixture a couple of times a day, then discard the fermented liquid and residue at the top before washing, rinsing, and drying seeds. Since melons are insect-pollinated, they can easily cross with other varieties growing within a bee's range. **Only the same species can cross, so watermelons (*Citrullus lanatus*) cannot cross with cantaloupes (*Cucumis melo*).** But two varieties of watermelon grown within the foraging habitat of pollinators, presents a high likelihood they will cross with one another. **While crossing doesn't affect the fruit, it will impact the seeds,** potentially creating hybrids in future plantings. To avoid this, grow only one variety per season or separate varieties by distance. This is the same for cantaloupe, which can cross with other varieties of cantaloupe. The result of a cross-pollination will still result in fruit likely to be very good and with increased genetic diversity, but any traits specific to a variety may be diluted in the next generation. Plants in the cucurbit family (also including cucumbers, winter squash, summer squash, gherkins, luffa, gourds etc.) have a fairly high tolerance for inbreeding, so **seeds can be saved from a small number of plants (5-10) and still have decent genetic diversity.** This is good news for small growers who may not have space for many vigorous and large vining or sprawling plants!



4: Okra

Okra seed can be easily saved from the same plants grown for edible pods. Simply **let a few pods from each plant grow until they become brown, and the seams just begin splitting,** revealing the black round seeds inside. While the pods are tough and protect the seeds, don't delay harvesting especially in the hot and rainy months in which they grow. As soon as they start splitting, bring them indoors to dry, avoiding mold. Allowing too many pods to go to seed may reduce the number of edible pods, as the plant will divert energy into seed production. However, most okra growers end up with more pods than they need, so it's usually not an issue!



5: Peppers

Peppers are very easy to grow and save seeds from, because the seeds are ready when the peppers are fully mature and edible. The main challenge for most growers who typically grow many varieties of peppers at one time, is that **different varieties (even if not the same species!) cross easily with each other.** To avoid this, isolate varieties by distance or timing of flowering (see table on the back page for recommendations), or grow only one variety per season. Or let them cross up and try growing your new hybrid pepper variety next season with your saved seeds! Different varieties mature to red, orange, yellow, or purple. Knowing this is important, because it's an indicator of seed maturity. **Seeds are not mature in under-ripe green peppers when they are often picked.** Do not save seeds from peppers with rotten interior cavities, even if the outside of the fruit looks healthy.



6: Roselle

Roselle takes 7-9 months to reach full maturity for the edible calyxes (the crunchy sour red fruit picked for eating), with seed maturity taking a bit longer. Rainy weather and excessive humidity can trap moisture inside the calyx and cause rot very easily. Keep a close eye on the developing calyxes as they open up and ripen. **The seed pods will change from green to tan to brown,** and begin splitting open to reveal dark brown seeds. Harvest immediately, remove the calyx, and allow them to dry indoors. A few pods will provide enough seeds for several years. Do not save seeds from immature green pods that have been removed to eat the calyx, as these won't be viable.



7: Tomatoes

Fully ripe tomatoes contain viable seeds, making them easy to save. In Florida, tomatoes may be harvested early to prevent splitting or insect damage. **When harvested early, fruit should be allowed to fully ripen indoors before extracting seeds.** Tomatoes are generally self-pollinating, but there's a small chance of cross-pollination if multiple varieties are grown close together. If tomatoes cross, it can be the start of a new variety, but can also unravel any specific traits you may have been saving a beloved variety for. **It is recommended to ferment tomato seeds** to reduce possible pathogens, remove the jelly coating around the seed, and make them easier to for planting later. See our publication *Home Grown Tomatoes in the Southeast* for more details, and consult the many videos and resources online. **Cherry tomatoes are particularly easy to grow and save seeds from,** as they thrive in our climate and produce abundant seeds. You may get enough seeds saved in one good season to last a life time!



Multiple varieties of tomato seeds fermenting in labelled jars. Note the mold on top. Eventually good seeds will sink to the bottom. Pour off the dirty water, rinse, strain and dry on a cloth napkin or coffee filter.

8: Winter Squash

The most common and well adapted winter squash grown in our climate are those within the *Cucurbita moschata* species, which includes Seminole Pumpkin, Butternut, South Anna Butternut, and various tropical pumpkin varieties. **These species easily cross with one another, as their flowers are very attractive to bees!** For isolation distance recommendations, see the table on the back page. The seeds are mature at the same time the fruit is edible. The same harvesting, curing, and storage practices used for preserving the edible squash are also beneficial for good quality seed. Harvest when stems are brown and withering, rinds are hard, and their final color is seen (this will vary greatly depending on variety). Wait at least 6 weeks past harvest to eat fruit and save seeds, as the quality will increase for both. **Scoop out the seeds when processing the fruit for eating, rinse, and dry.** Save seeds from fruit with desirable traits including: color, thick flesh, smaller seed cavity, shape, good flavor, long shelf life etc. **It is not recommended to ferment squash seeds.**



Seed Storage

Once harvested seeds are fully dried, it is important to keep them in conditions that are, in order of importance:

1. Dry
2. Dark
3. Stable
4. Cool

These are all conditions that delay a seed's growth which is what we intend for storage of seed in between seasons. **High moisture content in the seed and surrounding environment is the #1 cause of seed decay and shortened life.** So if there is one thing you attempt - make it keeping your seeds dry! Drying beads and home dehydrators can assist in getting seeds dry. **Do not exceed 100F** if using a food dehydrator. Air tight containers like Mason jars, or plastic bins with rubber gasket seals are suitable for storage. Home refrigerators are often humid and unstable (fluctuating temperature and humidity each time a door opens), and therefore not suitable for long term storage. Seeds are better off in a dark corner or cabinet of a climate controlled room. For more information, see our publication: *Basic Seed Drying and Storage Techniques for Hot and Humid Climates*.



Some Rules of Thumb to Remember

- If the seeds are visible and firm in any crop you harvest, you can probably save those seeds easily (i.e. watermelons, winter squash, tomatoes, peppers).
- Flowers that are frequently visited by pollinators are probably easily cross-pollinated with other varieties of the same species, so consider if isolation is needed.
- Flowers that are frequently visited by pollinators probably need higher numbers of plants in the population to save from; they may become inbred if too few plants exchange genetics.
- Seeds contained in pods (i.e. beans, peas, okra) need extra time to dry on the plant and are easily ruined by bad weather. Harvest early if needed and dry inside until pods and seeds are easy to separate.
- Store dried seeds in airtight containers in a location that is dry, dark, stable, and cool, if possible. Dry conditions are very important.
- Making mistakes is normal and helps the learning process. Try again next season, and don't plant all your seeds the first time.



Crop	Chance of cross-pollination with same species	Isolation distance between varieties of same species	Number of plants recommended to grow		
			Good	Better	Best
Amaranth	high	650-1,300 ft	1	5-25	50+
Legumes (common beans, tepary)	low	10-20 ft	1	5-10	20+
Legumes (Southern peas, yard long beans, Lima beans, butterfly pea, pigeon pea)	medium	160-500 ft (Limas)	1	10-25	50+
Melons	high	800 ft -½ mile	1	5-10	25+
Okra	medium	500-1,600 ft	1	5-10	25+
Peppers	medium	300 - 1,600 ft	1	5-20	50+
Roselle	high (unlikely more than 1 variety is growing, not a concern)	500-1,600 ft	1	5-10	25+
Tomatoes	low to medium, depending on variety and flower type	10-50 ft	1	5-10	20+
Winter Squash	high	800 ft-½ mile	1	5-10	25+

Resources

Visit workingfood.org/seeds for many more resources on saving seeds in Florida.



Cultivating a resilient local food community since 2012.



This publication is one in a series of seed saving guides prepared for Florida farmers as part of a SARE Education Grant that allowed us to work closely with farmers to adopt seed saving practices on their farm. We are grateful for SARE's support of our project entitled, "*Local Food Needs Local Seed: Increasing Production and Use of Locally Adapted Seed with a Farm to Community Network*". More information about this project can be found on Working Food's website blog.

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 20223864037488 through the Southern Sustainable Agriculture Research and Education program under subaward number 00003174. USDA is an equal opportunity employer and service provider. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.