

## ***Seed Saving and Storage***

*An article for Due West by Rebecca Last, Master Gardeners of Ottawa-Carleton*

When my mother died, I honoured her memory by sharing seeds with friends. I inherited my love of gardening from my mother, and I found great comfort in distributing seeds – tiny packets of life – to others who could cherish the resulting plants, along with their memories of my mother.



*Milkweed seeds dehiscent*  
*Photo by Rebecca Last*

Sentiment and sharing with friends are two of many reasons for saving seeds. It connects us with the great cycle of life and the seasons. Careful selection of seeds can result in plants that are better suited to local growing conditions. If you want rare and unusual varieties, saving and growing them from seed is often the only option. Saving seeds is also fun and can save you money.

Years ago I developed a passion for double-bloomed cream-coloured marigolds and spent a small fortune purchasing these annuals. I decided to start saving seeds. After all, marigolds are one of the easier plants to grow from seed.

Two years later, I had learned an important lesson in plant genetics, and had produced my very own weird, mutant marigolds. They were over a meter tall and had no petals whatsoever, only a yellow fuzz of stamens and anthers. The genetics lesson I learned? Often the traits we value in plants are recessive.

**Seeds for Beginners:**

- Produce seed same year as year planted.
- Self-pollinating – minimal crossing.
- E.g., peas, beans, lettuce, tomatoes, peppers

**Seeds for those with Experience:**

- Produce seeds same year as year planted.
- Require separation (or other techniques, such as alternative day caging) to prevent unwanted crosses.
- E.g., corn, cucumber, radish, spinach, squash family, cantaloupe

**Seeds for Experts:**

- Usually require more than one year's growth to produce seed.
- Require separation (or similar technique) to prevent unwanted crosses.
- E.g., brassicas (cabbage, broccoli, kale, cauliflower); carrots, parsnips, dill; parsley, beets

Now I only save seeds from open-pollinated varieties, meaning those pollinated without human intervention. Unlike those hybrid marigolds, open-pollinated seeds will breed true, resulting in off-spring just like the parent plant. Even here, I am selective. Plants that self-seed prolifically don't need my help. There's not much point in saving seeds from plants that require regular division anyway. I stick to easy annuals and biennials, a few perennials, and the occasional tree or tropical plant, just for fun.

Genetic research is costly and takes time, so we know much more about the genetics of commercially valuable species, such as food plants. When it comes to ornamental plants, we gardeners have to experiment and rely on our powers of observation. There are lots of factors to consider. For example, how easy is it to grow from seed? Will we get desired characteristics?

Selecting for specific traits can be challenging.

For example, flower colour results from a combination of genetic characteristics and may vary from generation to generation. It can take years to determine which traits will predominate. Experimenting with plant genetics is a fascinating hobby.

The best time to harvest seeds is on a sunny afternoon after a dry spell. Make repeated visits to harvest seeds as they ripen. When seeds easily separate from the plant, they are ready to harvest. The plant has completed its reproductive cycle, annual plants are dying off, and many perennials look scruffy.

Some plants, like Himalayan balsam (*Impatiens glandulifera*), literally fling their seeds out in a reproductive strategy called dehiscence. Other dehiscent plants include Siberian peashrub (*Caragana arborescens*), and members of the *Datura* (e.g., angel and devil trumpet flower) family.

In the face of this enthusiasm, I tape a paper bag onto the stems below seed heads before they are fully ripe. Other seeds, – those that retain their seed heads in an upright position, or whose seed pods do not open automatically when ripe – can be collected by hand, shaken into a clean, dry container. I take several labelled containers with me so I can collect a few different varieties at once without getting them mixed up.

Large starchy seeds like peas and beans should be allowed to dry on the plant vine, in the pod. For fleshy fruits like squash and tomatoes, wait until the fruit is over-ripe to ensure the seeds are mature. For seeds that ripen after frost, or over a period of time, the entire plant can be hung upside down inside a paper bag in a dry, well ventilated space.



*From left to right- hollyhock, Four O'Clock's, Echinacea, Hibiscus, Lupin*  
*Photo by Mary Ann Van Berlo*

In seed saving, dryness is everything! It is important to separate the seeds from other plant parts that retain humidity and might cause mould. Washing is recommended to remove the surrounding plant tissue from fleshy fruits like tomatoes or squash. Picking seeds out of the plants can be tedious, although I see

it as an opportunity to share time, as well as seeds, with friends.



*Verbascum seed head*  
*Photo by Mary Ann Van Berlo*

One technique for drying seeds is to lay them in a single layer on an old window-screen or similar mesh so that air can circulate. Wetter seeds, like those from tomatoes, can be laid individually on paper towels.

Test to make sure your seeds are dry enough for

storage by placing a few in a sealed glass jar and leaving it in a sunny place for an hour or so. If there is condensation inside the container, your seeds need more drying. To test dryness of larger seeds, such as those of squash or cucumbers, break one open. The seed is ready for storage when both the shell and nut inside are brittle and snap cleanly in half without bending.

Peas and beans may be attacked by tiny weevils that can reduce the seeds to dust over the winter. After drying, place pea and bean seeds in the freezer for 24 to 48 hours to kill the weevils.

Store your seeds in clean dry containers – glass jars, Ziploc® baggies, paper, parchment or wax-paper envelopes. Don't forget to label your containers with the year the seed was collected, and its name.

Store your seeds in a dark space because light can trigger germination in some seeds. Ideal storage conditions are an average humidity of 25%-35% at a temperature of 5°C - 6°C (42°F) for storage up to 3 years. Longer term storage, such as in Norway's Svalbard Global Seed Vault, requires a temperature of -18°C (0°F).



*An array of containers for seeds  
Photo by Mary Ann Van Berlo*

For comparison, the winter humidity in homes with forced air heating is about 35%-50%. Fridges are about the right temperature, but average 70%-90% humidity, so use air-tight containers. Frost-free freezers are typically very dry, which may damage seeds by drying them too much. A cold cellar provides near-ideal conditions for seed storage. Just make sure to use rodent-proof containers!



*Labelled seeds in rodent proof containers  
Photo by Mary Ann Van Berlo*

There is a lot of published information about how long different types of seeds will keep. My rule of thumb is that bigger seeds tend to last longer except when they contain volatile oils. For example, castor bean, which are poisonous, and butternut seeds, do not store longer than one year because of the oils they contain.

In a world where a handful of huge companies dominate the global seed market and patent their seed to prohibit seed saving, I see my own modest seed-saving as an act of quiet revolution. Won't you join the revolution, too?