



Seed Saving Begins in Spring



Seed catalogs are full of useful information.

by Jill Henderson

If you are one of the millions of gardeners who want to try their hand at saving their own garden seeds this year, spring is the perfect time to start. Saving seed will not only save you a ton of money every year for the rest of your life, but it is also one of the most fun and rewarding things you will ever do in the garden.

I began seed saving like most gardeners do — a tomato here and a squash there — whatever found its way into my hands at the right time. But like most novice seed savers I began to encounter problems with germination, loss of specific traits and seeds not coming true to variety. All of these issues are typical for casual seed savers, especially when they unwittingly branch out into crops that are more difficult to save seed from.

My early failures were the motivation I needed to learn to save seed the right way. I didn't want to waste another season saving seeds that didn't work. So whether you want to learn how to save your own seed for the first time, or take your seed saving to a higher level, this article will show you how.

The first step to saving good seed is planning. A good place to start is the seed catalog you've been perusing all winter long. Not only are seed catalogs filled to the brim with valuable information on the crops you want to grow — including germination times, growth characteristics, suggested planting dates and so on — but many also categorize seeds by relationships and often list each variety's botanical name, as well. But before you start your search, let's talk about what, exactly, you should be looking for.



Saving seeds is easier than you can imagine.

PLANTS HAVE FAMILIES, TOO!

Like humans, every plant in the world belongs to a family and has a distinctive name. In fact, most plants have many names, which can sometimes be confusing. In order to eliminate that kind of confusion, all plants are given very particular and descriptive names that are used around the world. The system used to name plants is called botanical nomenclature and it works by organizing and classifying all of the plants in the world — including the veggies in your garden — into groups based on their relationships to one another, much like a family tree.

This system is helpful for seed savers, because the scientific Latin botanical name given to each plant clearly identifies its relationship to other plants. For seed savers, a plant's botanical name is often the only way you can really know if two plants in the garden can cross-pollinate one another or not. And while it may seem a tad boorish, understanding botanical names is the first step to saving pure garden seed.

All plants are classified in descending order from Kingdom, Division, Class, Order, Family, Genus, Species and Variety. The number of plants included in each classification group gets increasingly smaller as the list moves from top to bottom.

Imagine your own family tree. Your most distant relatives are the roots or the trunk of the tree, because that's where

your family started. From the trunk come many branches, twigs and leaves, each of which represents members of your family. And somewhere in that huge tree, a few twigs or leaves represent the individual members of your family as well as their relationships to one another and to every other member of your extended family. Because you are so far removed from your earliest ancestors, you are more like your immediate family in looks and character than your distant relatives. Plant families are represented exactly like human families, except that when we look at a botanical family tree, the roots are often in the air and the branches are hanging down below.

Unlike humans, plants will only reproduce with other plants that are very closely related to them. Because there are relatively few plant families represented in the average garden, many of the plants in our gardens are so closely related that they have the ability to reproduce with one another. Take squash, melons and cucumbers for example. All of these crops are members of the Cucurbit family and many varieties of cucurbit are so closely related that they can interbreed with one another. But the crucial question here is: Which ones can and which ones can't? Most casual seed savers don't know the answer to this question, but the answer lies in knowing the botanical names of the plants or crops we grow. Only by knowing how closely related each plant is to the other can we determine if the potential for cross-pollination exists. If it does, we can then take measures to either encourage or prevent it, depending on our final goal.

The good news is that you don't have to memorize the entire ancient lineage of every plant in your garden to save good seed. In fact, all you really need to know is the family name, the Latin botanical name and the variety name, which you probably already know.

Some people really enjoy learning the botanical names of plants, but most shun it like the plague because the names are in Latin and often hard to pronounce. But just remember, that it's not how you *say* the name, it's that you *know* the name. And if you really want to learn the right way to say the Latin names, or you just want to impress your friends and look cool at parties, check out the Free



The leaves and flowers of cucumber make it easy to identify this Cucurbit family member.

Online Talking Dictionary of English Language at howjsay.com. There you can type in any botanical name in the search box and the talking dictionary will pronounce the word for you, albeit with an English accent. But regardless of pronunciation woes, the sooner you begin to learn the botanical names of the plants in your garden, the easier it will be to save high-quality garden seeds.

THE SECRET TO SAVING PURE SEED

I could go on all day about how to save the seeds of tomatoes or zucchinis or watermelons, but that would only teach you how to save the seeds of tomatoes and zucchinis and watermelons — not the hundred or so other kinds of vegetables in your garden. That's why I approach seed saving in another way, which is to teach you the magic words that will provide the solid foundation needed for saving any kind of seed. Indeed, these words are the true "secret" to saving pure seed.

The first word is the name of the family that a plant (or plants) belongs to. Referring back to the family tree analogy, a family is a group of plants that share the

same ancestral lineage and thus, many characteristics unique to that family including leaves, flowers and fruit.

For example, the Cucurbitaceae or Cucurbit family contains all gourds, melons, squash and cucumbers. Think of the flowers and leaves of a cucumber. Now think of the flowers and leaves of your favorite squash. Do you see the resemblance? That's because they all belong to the same family. Once you are familiar with a family, you will find it very easy to recognize the other members of that family by the similarities in their flowers, fruit and leaves. Pick any plant in the garden and see if you can find the other members of its family based on appearance. Once you start doing this, suddenly it becomes easy to recognize the family relationships in the garden and how that might impact your seed saving efforts.

Now, most gardeners only know the common or variety names of the crops in their gardens. These are the names we all understand and recognize, such as Black Seeded Simpson, Detroit Dark Red, Danvers Half Long, etc. And this is helpful, but it's not enough to save pure seed and I'll explain why in a bit.

The only way you can really know if two plants in the same family can cross-pollinate one another is to learn their Latin botanical names, which consist of two words written in italics and perched between parentheses. I like to think of them as the first and last name of a plant. These two words alone are undoubtedly the most important words in the world of seed saving and you absolutely must know them if you are going to succeed.

The first word of a plant's name represents the genus and the second word represents the species. The botanical names sometimes include the specific variety name in the epitaph, especially when there are many varieties within a species. For example, butternut squash might be called (*Cucurbita moschata* var. *Waltham*) or something similar. *Cucurbita* is the genus name, *moschata* is the species of cucurbita, and *Waltham* is the variety of *Cucurbita moschata* being referred to.

Let's take a closer look at squash.

The Cucurbit family contains all of the cucumbers, melons, squash and gourds in the world and represents one of the largest groups of plants in the average garden. This family contains no less

than 12 genera (the plural of genus) and hundreds of species.

Within that massive family is the genus *Cucurbita*, which represents all of the cultivated and wild squash in the world. This one genus alone contains six domestic species of squash and gourd, with the four most common species being *moschata*, *mixta*, *maxima* and *pepo*. When writing or speaking about one or more species within a single genus, the botanical names are often abbreviated like this: *C. moschata*, *C. mixta*, *C. maxima*, *C. pepo*.

In addition to the many species of squash, there are an endless number of cultivated varieties, also known as cultivars or varieties. If all you had to go on were the variety names of the squash you want to grow, such as *Waltham*, *Green Striped Cushaw*, or *Big Boy Pumpkin*, how on earth would you know which ones could potentially cross-pollinate one another and which ones couldn't? The answer is: You wouldn't. And that is why it is so very important to know the Latin botanical names of plants in order to save pure seed.

In the end, variety names play an important role in seed saving, too. If you are trying to save a *Waltham* butternut squash (*C. moschata*), you need to ensure that it only cross-pollinates with other *Waltham* butternut squashes. If it crosses with another variety of *C. moschata*, such as a *Long Island Cheese Pumpkin*, which is also a variety of *C. moschata*, the seeds and progeny will decidedly not be *Waltham* butternut squash, but a hybrid of two varieties of the same species.

START SEED SAVING IN SPRINGTIME

As the title of this article suggests, seed saving should begin in spring. First determine if your seeds are open-pollinated or hybrid. Law requires seed companies to mark hybrid seeds as such, either by using the word "hybrid" or by displaying "F1" next to the variety name. Hybrids will not come true to variety, so it is important that you only save seed of open-pollinated, non-proprietary crops such as heirlooms.

Next, begin searching for the botanical Latin names of the varieties that you want to grow — not just the varieties that you want to save seed from. If you can't



Common radishes are among the easiest crops to save seed.

find that information on the seed packet or in your seed catalogs, simply do an Internet search using the crop's variety name, type and the words "botanical name" or "genus and species." Once you find the information, write it on your seed packet. It will help you isolate your seed crops from pollination by similar species.

Isolation can be implemented using a physical barrier, distance, staggered bloom times, caging, bagging and hand pollination. But the easiest method is what I call the Single Variety Rule, which is to grow only one variety of each species in the garden per season. This is particularly important for plants that rely on wind or insects to move pollen from flower to flower.

SAVE IT EASY!

The seeds that are easiest for beginning seed savers include all legumes, lettuces, peppers, eggplants, tomatillo, tomatoes and annual radishes, most of which are self-pollinating, show little inbreeding depression, need minimal isolation and produce viable seed in one season. These include:

- Tomatoes, tomatillos, peppers and eggplant – Nightshade family (Solanaceae)
- Beans and peas, all types – Legume family (Fabaceae)
- Lettuce, all types – Aster family (Asteraceae)
- Radish, common red and green types only – Brassica family (Brassicaceae)

While the crops in this list do not rely on pollination by insects, that doesn't mean that insects won't visit them. For the home gardener, separating blocks of different varieties by 10-15 feet is the best defense against unexpected crosses.

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And while hot peppers have perfect self-pollinating flowers, they tend to cross-pollinate much more readily than sweet peppers and should be separated from similar species by at least 20 feet, or as great a distance as is possible.

The following crops are very easy to save seed from as long as you follow the Single Variety Rule. Otherwise, you will need to learn to use more tedious isolation methods such as bagging and hand-pollination.

- Spinach, all types – Chenopodia family (Chenopodiaceae)
- Cucumber, melon, watermelon, squash and gourds – Cucurbit family (Cucurbitaceae)
- Okra – Mallow family (Malvaceae)

All the plants in this list, except okra, rely on wind (spinach) or insects (cucurbits) for pollination. Okra has perfect self-pollinating flowers but because they are so open and attractive, insects are naturally drawn to them. Spinach bears male and female flowers on separate plants, so be sure to allow at least one male for every three or four females. Male plants are the first to bolt in the spring.

Inbreeding depression is a genetic condition that causes a myriad of dysfunctional problems such as sterile seeds, poor germination, loss of disease or pest resistance and other physical anomalies that occur when seed is saved from too few plants. Plants that rely on wind or insects to move pollen are much more prone to inbreeding depression. Corn and spinach are very prone, while nightshades and legumes are not. Although the plants in the last list don't exhibit much inbreeding depression, it would still be wise to save seed from one fruit from at least three plants.

Once you've got the basics, the rest naturally follows. Allow all fruits to ripen to their full maturity before removing the fruit and harvesting the seed. Peppers change color, eggplants lose their shine, cucurbits are large with a firm or hard rind, legumes dry in their pods, brassicas and root crops send up flowering stalks and so on. The edible portion of head lettuce, root and cole crops must be sacrificed as food in order to obtain seed, but it's well worth it. Once you gather the seeds, give the wet ones a quick rinse and dry them out of direct sun before storing in a cool, dark place.

Seed saving may, at first, sound a bit complicated, but once you understand the basic principles and practices of saving seed, it is really quite simple. By saving your own seed you can save money, be more self-sufficient, increase the genetic diversity of food crops and select the traits that you most want to see in the crops that you grow.

But more importantly, by saving your own seed, you will experience the joy and satisfaction of seeing next year's garden right before your eyes and know that not only was it easier than you thought, but that you were able to do it all by yourself. With a little planning this spring, you can save enough seed in your garden this year to last you and yours for years to come.

Jill Henderson is an artist, author and organic gardener. She is currently the editor of *Show Me Oz* (showmeoz.wordpress.com), a weekly blog featuring articles on gardening, seed saving, nature ecology, wild edible and medicinal plants and culinary herbs. She has written three books: *The Healing Power of Kitchen Herbs*, *A Journey of Seasons: A Year in the Ozarks High Country*, and *The Garden Seed Saving Guide*.