

Seed Collection and Saving for the Casual Gardener

By Marti Rutherford / CNPS-SLO April 2016

This information is being posted on the website in preparation for our first seed exchange which will take place before the October meeting. The seed exchange is intended as an opportunity to share seeds from native plants which are growing in your landscape. It is not intended as a place to sell seed. It will also be an opportunity for the propagation group to obtain seeds of difficult to germinate plants. Plants like bush poppy, matilija poppy, blue eyed grass, wooly blue curls and manzanitas are some of the seeds that the group would like to obtain. We encourage left over seed from the exchange to be donated to CNPS-SLO for possible packaging and sale at the November plant sale.

Why Collect Seeds

Many of us enjoy the challenge of growing plants from seed. Growing native plants can be bit more challenging than growing vegetables. When successful, however, the rewards are many. Large numbers of plants can be grown with little financial investment. Plants can be grown that are not available in the nursery. For those plants that are normally grown from cuttings you can increase the genetic diversity in your garden by growing plants from seed. Then there is the excitement that comes from observing the miracle of life embodied in that small, sometimes almost microscopic, seed.

To grow from seed, the seed has to be available. That is where our seed exchange comes into play. We are hoping to have seeds that are not available in the trade as well as some familiar widely available seeds. It will just take some observational skills and some being there at the right time. Just a reminder – the seed exchange is intended for your garden plants. Collecting seeds on other properties, without permission, is illegal. The hope is that many of us are growing some unusual plants and that we can manage to collect some of those seeds and spread the wealth.

When to Collect

We want seed that is mature so the embryo has fully developed. Immature seed will often not grow. There are exceptions. Some seeds will germinate better if they are not completely matured as dormancy factors kick in. The easy answer is to collect seeds when they shake or rattle in their pod, when the seed case had dried, when they turn a darker color or when they come off easily when touched. Seeds of fruit that are fleshy, like Toyon, *Prunus ilicifolia* and *Ribes* become highly colored. Some may need to mature a bit beyond that point to where they are turning a darker color. Some plants have inflorescences where there are mature seeds ready for harvest while the tip of the inflorescence is still flowering. The guide from the Rancho Santa Ana Botanic Garden says that “In general, annuals and perennials will be ready for seed collection 2-5 weeks after peak bloom while shrubs and trees may take two months or longer for fruits and seed to mature. A few plant species produce fruits that require two seasons to fully mature.”

Collecting and Saving Native Seeds

Collecting Tips

When obtaining your seeds evaluate whether you want to collect all seed or leave some to self-sow. If harvesting in the wild, the recommendation is to never take more than 10% of the seeds in 10% of the years. For rare plants it's even less (5%). Since we are not taking seeds from the wild, the choice for how much seed to remove is yours.

- When the plant forms pods or capsules you can check a few seedpods to see if there is a developed seed inside. Sometimes, upon close examination, you can observe that a seed case is just beginning to split open. You can assume that those seeds are ready for dispersal and thus collect them then.
- Pods often will explode, sending their seeds in all directions. Place the pods in a paper bag and seal it tightly. Do not use plastic as there needs to be air exchange.
- Make sure you label your bags. It's easy to mix up collections if things aren't labeled well.
- Some plants produce flower spikes that can have mature seeds in the portion that flowered first but the tips is still flowering. In that case, try to cut a spike when the seeds in the middle portion of the spike appear to be ripening. Let it hang upside down in a paper bag to shake the drying seeds free. The seeds that remain in the capsules are likely not fully mature so there is no need to gather every last seed.

Seed Viability

Native plants have variable amounts of viable seed produced each year. This can be affected by environmental factors and insect predation. The length of viability is variable as well. Seed that is collected for seed banks and for commercial purposes undergoes testing to help determine the viability of the seed. Examples of these tests are the cut test, which looks for a filled embryo; floatation tests, in which an undeveloped or insect-damaged embryo would be expected to have air pockets causing it to float; and germination trials, which assess the ability of the seed to germinate under controlled conditions. It is a survival strategy to not germinate all at once so we would not expect our native seeds, which have not been bred for commercial purposes, to have high germination percentages.

Cleaning Seeds

For long term storage, seeds need to be cleaned. This is easy to do with some seeds, but more difficult with others. In most cases the larger pieces of chaff can be removed by hand or by running the seeds through a sieve. You might be surprised at how small many of our native plant seeds are. Some, like *Mimulus* and *Dudleya*, are like dust. In a few cases, such as for *Eriogonum*, complete cleaning is not done and chaff plus seed is spread on germinating media.

For fleshy fruits and berries you need to remove the seed from the fruit. This can be done in several ways. You can mash them through a sieve, or even put them in a bowl of water to rot a bit, then mash the pulp and rinse. Whichever method you try, dry the seeds on towels for a couple of days before storing them.

Some seed capsules are not people-friendly. Warning – if working with *Fremontodendron* wear gloves!

Collecting and Saving Native Seeds

I was taught that to help remove the insects from the seeds you can put the seeds in a thin layer in a container in the bright sun for a bit. The insects will scurry off. This probably will not remove all insects, but it does reduce the number.

Seed storage

For seed banking purposes, seed is stored under carefully controlled temperature and humidity conditions. That is beyond our ability as casual gardeners.

- Please store your seeds in a cool and dry place.
- Store seed in paper bags rather than plastic to avoid reduction of gas exchange.
- Remember that seeds are alive.
- Seed will remain viable longer when stored in the refrigerator.
- Placing the seed packets in airtight containers with a bit of desiccant will help remove excess moisture.

There are some seeds, called recalcitrant, which cannot be stored for very long. These are often the larger seeds such as buckeye and acorn. Seeds from those plants need to be planted somewhat quickly after being removed from the plant. The timing of this seed exchange (early October) will probably not be appropriate for some of these recalcitrant seeds though acorns might work. You can try storing these seeds in the refrigerator in a sealed plastic bag of moist vermiculite or sand. Seed banking experiments are being done that remove the water and replace it with sugar solutions and then the seeds are frozen.

More information

If you are interested in obtaining more information about propagation from seeds, there are some great books available.

[Seed Propagation of Native California Plants](#) by Dara Emery, available through our CNPS book sales table, focuses on native plants and has a pretty complete table listing germination strategies.

Marjorie Schmidt's [Growing California Native Plants](#) offers tidbits on growing and also describes many plants and their usefulness in the garden environment.

Alan Toogood's [American Horticultural Society Plant Propagation](#) is an excellent book for details of propagation. Though not focusing on natives, the principles discussed apply.

The Rancho Santa Ana Botanic Garden provides extensive information on collecting and storing seeds. The information is targeted to the seed banking collectors but there are lots of nuggets of information applicable to the casual gardener as well. [PDF](#)
(<http://www.rsabg.org/documents/horticulture/Seed%20Collecting%20and%20Storage%20Guidelines.pdf>)