



Rockin E Gardening Handouts

Tips and Suggestions for 'Year-Round' Gardening

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Seed Storage Tips

Sometimes home gardeners can save money by buying seeds in a larger quantity than they can use in one year. However, without proper care, many seeds will not germinate properly the following year, making the initial investment actually more expensive.

How long can you keep seeds and still expect them to germinate and grow when planted? There are no exact answers to this question because seeds are living things, and much depends on how the seed is stored. Also, there is not an exact point when seeds just totally quit germinating. They may just start having a reduced germination rate. What is 'too low' of a germination rate depends on each individual gardener. Seeds with a 'low germination rate' will still produce good, healthy plants, they will just not produce as many. Even fresh, newly purchased seeds, will not always germinate at 100%.



If you've tried saving seeds and didn't have much luck with them germinating in the Spring, chances are you didn't store them in the environment they needed.

Vegetable and flower seeds may be kept for one year without any appreciable decrease in germination. Just keep them cool and dry.

Storage may be extended to 10 or more years under proper conditions.

Seed moisture and storage temperature are the most important factors in determining how long seed can be stored.

As a general rule, 'The drier, darker and cooler the seeds are kept, the longer they will store'.



Storage tips

Seed should be stored in conditions that are the exact opposite of the conditions that they need to sprout. Keep seeds cool, dark, and dry to store them.

Changes in heat and humidity are a seed's worst enemy. Temperatures that are best for seed storage are a constant 40-45° F.

Seeds that are sufficiently dry can be safely refrigerated or frozen for very long periods of time with little, or no loss of seed viability. Drying seeds to zero moisture will, of course, destroy them. Moisture content of 10%-20% is ideal.

If you can dry your seeds to 8 percent moisture content, you can store many seeds up to 10 years. To do so, dry the seed at 100° F for six hours. You can spread the seeds out in a sunny area. However, direct sunlight is harsh, and can easily exceed the 100 degree temperature. Drying seeds in a shady location is often a better procedure.

Never use a microwave oven to dry seeds. You may use a conventional oven if you keep the door open and the seed is not heated to more than 100 degrees.

When dry, package the seeds in moisture-proof containers and store them in a cool, dark location. If your seeds are in a sealed container, you can even store them in a refrigerator. However, if you do not seal your seeds properly, a refrigerator will do more harm than good for seed storage.

Another way to get seed down to a very low level of

moisture is to use a desiccant with your seed packets, and seal them in an airtight container. A mayonnaise jar, for example, is perfect. Put silica gel in the jar, add the seeds (still in their packets) to the jar, and seal.



Dry rice will also suck the water out of the seed and get it really dry. Bake at least twice as much rice as you have seed in the oven for 45 minutes, or until it is bone dry. While it is still hot, put the rice in a jar, about half full, and screw the lid on. Wait patiently until the rice is cool. (If you rush, you'll cook your seeds.) Put your seed in with the cool, dry rice. Put the lid on tightly, so damp air can't get in. Leave your seed sealed in the jar, with the dry rice, for about two weeks, so the dampness in the seed will be drawn out into the rice. You now have dry seed that you can safely seal, and it will keep for several years.

Seeds that are just 'air-dry' are not properly dormant - they are just napping; so they will still use their stored reserves of energy and will soon stop germinating. Also, you can't put 'air-dry' seeds in a sealed container because they are still breathing - they will suffocate.



Without a sealed container, seeds will soon reabsorb water from the air. On the first humid day, they will start getting ready to germinate and will not store much longer.

Darkness is another very important requirement in storing seeds. Seed viability and vigor reduce rapidly when exposed to light during storage. Onions, parsnips and corn are especially vulnerable to light.

The worst possible scenario to storing seeds is: Very warm or sudden changes in temperature, high humidity, and excessive light during storage. Even if you reduce the temperature back to normal, dry the seeds again, and return them to darkness, your seeds are probably not worth storing any longer. Use them and store new seeds.

Seed Storage Containers

A moisture-proof container is one that stores seed safely even while submerged in



water. Use sealed cans or jars, rather than plastic bags. Double Ziploc bags work well but they are not as reliable as glass jars.

Many homes have highly variable temperature and humidity levels. Paper envelopes, cloth bags, or cardboard boxes are good for short term storage, but they allow too much, or too little, moisture for long-term storage.

Seed Storage Problems

Mold, mildew, insects, and rodents can be a problem when storing seeds. Keep this in mind as you plan your storage areas.



Mold and Mildew - seeds not dried to a low moisture level before being sealed can - and usually do - rot. A simple test: After "drying" and placing in closed glass jars, the appearance of condensation on the inside of the container within a few hours indicates that you need to do more drying. Damp seeds will decay (and die) very quickly.

Insects - Weevils, borers, and some small beetles, that may have escaped notice will wreak havoc on stored seeds. A few pinches of diatomaceous earth is a safe and non-toxic way to prevent insect damage. It doesn't take much; just lightly coat seeds before your final sealing and storage.

Rodents - Stored seeds could provide a banquet for mice or other small rodents. Prevent damage by placing labeled seed containers in metal, glass or plastic storage containers. A camp cooler may be perfect.

Storage Time

Time can vary widely depending on individual storage conditions and the types of seeds. Everyone will have a different experience. Some seeds can last for decades - maybe even centuries - IF - storage conditions are absolutely perfect. Wheat, for example, has germinated successfully from storage in the Egyptian Pyramids.

Few gardeners have the ability to sustain perfect seed storing conditions for a long time. Try to use your seeds, and put new, fresh seeds into storage on a regular basis.

More Resources

<http://web.extension.illinois.edu/lmw/downloads/42321.pdf>

<http://extension.oregonstate.edu/deschutes/sites/default/files/fs220.pdf>

<http://www.ext.colostate.edu/pubs/garden/07221.html>

Vegetables

(seeds may last even longer if stored in near perfect conditions)

Vegetables	Years
Asparagus	3-4
Beans	3-6
Beets	3-4
Broccoli	4-5
Brussels Sprouts	4-5
Cabbage	4-5
Cabbage (Chinese)	2-3
Cantaloupe	3-5
Carrots	3-5
Cauliflower	4-5
Celeriac	4-5
Celery	3-4
Chicory	4-5
Collards	5-6
Corn	3-5
Cress	3-5
Cucumbers	4-6
Eggplants	3-5
Endive	3-4
Kale	4-5
Kohlrabi	4-5
Leeks	2-3
Lettuce	3-4
Mustard	5-6
Okra	1-2
Onions	1-2
Parsley	2-4
Parsnips	1
Peas	3-5
Peppers	3-4
Pumpkins	3-5
Radish	3-5
Rutabaga	3-5
Salsify	3-4
Spinach	3-4
Squash	3-5
Strawberry	3-6
Sunflower	4-6
Swiss Chard	3-4
Tomato	5-7
Turnip	5-8
Watermelon	4-6

Do not store 'Chemically Treated Seeds' with vegetables or other food items that are to be eaten.



Years

Flowers

(seeds may last even longer if stored in near perfect conditions)

Flowers	Years
Ageratum	4
Alyssum	4
Arabis	2-3
Aster	1-2
Aubrieta	2
Browallia	2-3
Calendula	5-6
Campanula	3
Candytuft	2-3
Carnation	4-5
Celosia	4
Coleus	2
Coreopsis	2
Cosmos	3-4
Dahlia	2-3
Datura	3-4
Delphinium	1
Dianthus	4-5
Gaillardia	2-3
Geranium	1-2
Gerbera	1
Gomphrena	2-3
Gourds	3-4
Hibiscus	3-4
Hollyhock	2-3
Impatiens	2
Larkspur	1-2
Lobelia	3-4
Marigold	2-3
Nasturtium	5-7
Pansy	1-2
Petunia	2-3
Phlox	1-2
Poppy	4-6
Portulaca	2-4
Salvia	1
Scabiosa	2-3
Shasta Daisy	1-2
Stocks	5-6
Sweet Peas	2-3
Sweet William	1-2
Thunbergia	1-2
Verbena	1
Vinca	1-2
Viola	1-2
Zinnia	5-6

Store Seeds Cool, Dark & Dry.

