



How Long Can Seeds Last?

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About this time of year while many are turning their attention to taxes, home gardeners are leafing through catalogs or scanning screens to put together their seed orders. Often half-filled packets of seed remain from previous years. Make a list of what kinds and approximate numbers of seeds before placing this year's orders.

How long a seed remains viable (able to germinate) varies with the species of plant, the growing conditions of the parent plant that produced the seed and the environmental conditions that the seeds were stored under.

There are instances of very old seeds still being capable of germination. Seeds of *Cassia bicapsularis*, a legume, were viable after 100 years, those of the India lotus (*Nelumbo nucifera*) at least 130 years and maybe up to 400 years. A Judean date palm seed (*Phoenix dactylifera*), carbon-dated to 2000 years ago was successfully sprouted in 2005.

Unfortunately for us gardeners and farmers, most of the vegetable and flower seeds we want to grow are viable for about 1 to 6 years if stored under ideal conditions. On average, seeds of parsnip, onion and parsley are viable for about a year. Leeks, sweet corn and peppers have a median life span of 2 years while beans, broccoli, carrots, peas and spinach are viable for at least 3 years. Those known to last 4 years include beets, cabbage, cauliflower, Swiss chard, eggplant, kale, pumpkin, squash, tomato, turnip and watermelon.

Seeds from muskmelon, collards, cucumber and radish remain viable after 5 years but the award for the longest lasting goes to lettuce with seeds that last up to 6 years.



There is more information about the longevity of vegetable seeds than of flower and herb seeds. According to one source, salvia and verbena are short-lived seeds while zinnias, balsam, amaranthus and poppies may be viable for 4 to 6 years.

The conditions that a seed is stored at is critical in determining its longevity. Seed stored in unfavorable conditions will lose its viability. Ideally, seeds should be kept in a dark place with cool temperatures and low humidity and where they are inaccessible to pests such as insects or rodents.

Some seed savers follow the rule of 100 – basically stating that the temperature and percent relative humidity that the seeds are stored at, when added together, should not be more than 100. Seeds can also be stored in the refrigerator or freezer in an air-tight, moisture-proof container like a glass jar. Reportedly, cold storage can increase a seed's viability by 10 times or more.

Realistically most of us likely store our seeds in the same packets that they came in and in some type of storage box at regular household conditions. And that is fine as long as we recognize that leftover seed may not be as long lasting as we would expect.

When purchasing seed, there is usually a date on the seed packet. At first glance, some may assume this is an indication of when the seed was collected but actually, it is the date the seed was packaged. If you purchase seed packaged for this year, you should get good germination this growing season but you have no way of knowing when the seed was harvested or in most cases, even when a germination test was run.

The federal government sets minimum germination standards for vegetable seed but it varies by vegetable variety. Also, the testing requirements are set by the states and as with many state statutes can vary from state to state. Testing may be required every 6 to 18 months with variants in between. Once tested for germination, seeds are not necessarily packaged immediately. According to the U.S. Department of Agriculture, seed sold wholesale needs to be packaged within 18 months of germination testing while 36 months is allowed for retailers.

So, the seed you purchase this year may or may not be several years old. One cannot tell just by the date on the packet. The take away is to purchase seed from reputable seed companies. Even they do not grow most of their own seed, but the ones that have been in business for a while obviously meet the needs of their customers by supplying them with viable seeds that produce vigorous plants.

Consider the longevity values given in this article or on tables as general guidelines. Realize that many factors account for a seed's viability. When in doubt about leftover seeds, perform a germination test or just order new seeds. Planting and tending a garden take a lot of time and effort so make sure your hard work will be rewarded.

For information on seed storage and germination testing or on other gardening topics, feel free to contact us, toll-free, at the UConn Home & Garden Education Center at (877) 486-6271, visit our website at www.ladybug.uconn.edu or contact your local Cooperative Extension center.