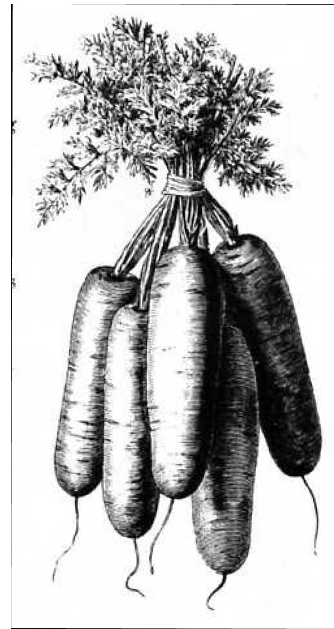


Community Seed Production for Sustained Vegetable Harvests

At BARAGA , the diversity of vegetable produce is probably much higher than a typical commercial vegetable farm because each gardener grows a selection of different plants on their 1000 square foot "acreage". BARAGA can become an even better example of local sustainability and diversity, if crops are planted each year from seeds saved from the previous year's garden. Many gardeners have long experience collecting and saving seeds for their gardens while others are just beginning to learn seed saving techniques.

This article provides a brief overview of seed collection and storage techniques. Read the many excellent references for a more thorough description of this interesting topic.



Why Collect Seeds

Many gardeners start their gardens each spring by planting commercial seeds, seedlings, and bulbs/tubers bought from the local nursery. With just a little more planning and effort, gardeners can also collect seeds from their own garden and plant them year after year for sustained harvests. The advantages to seed collection are:

- ◆ to observe and learn about the full cycle of plant life
- ◆ save money on commercial seeds and seedlings (grow your own) to help preserve heirloom varieties
- ◆ to naturally select over time plants varieties particularly suited to local BARAGA conditions.

Plants for sustained seed production

Before embarking on seed collection, one must first ensure that the varieties of plants grown will propagate viably from collected seeds. The basic rule is to use open-pollinated, non-hybrid (also called heirloom or heritage) varieties of plants and avoid hybrid or genetically modified (GMO) plants.

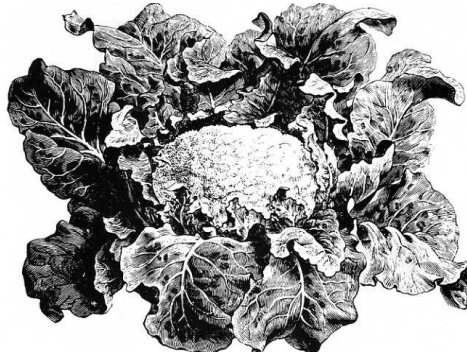
Traditional heirloom or heritage plants have been planted for generations by farmers using seeds collected from previous years crops. Any variation of plant characteristics over time and place happens due to natural random selection.

In attempts to increase crop yield, optimize and diversify plant characteristics, and reduce susceptibility to disease, agricultural science has created new varieties of plants that will produce

**OPEN-POLLINATED HEIRLOOM OR HERITAGE SEEDS - YES
HYBRID OR GMO - NO**

plants with standardized specific characteristics BUT unfortunately cannot be successfully propagated year after year from collected seeds. An F1 hybrid plant is one produced by crossing two specialized (factory) plant varieties to "manufacture" a plant that has desirable characteristics. These F1 hybrid plants do not produce seeds that produce plants with the same consistent characteristics as the first generation (F1). Thus, although the hybrid plants have some desired vibrant characteristics, seeds collected from these plants do not grow into plants with the same characteristics.

Genetically modified organisms (GMO) go even further than hybrids by laboratory manipulation of the genes of plants. Typically, GMO plants are designed to have non-viable second-generation seeds, so sustained harvests from gathered seeds are not possible.



Buying and exchanging seeds

Before starting your seed collecting, first obtain non-hybrid seeds or seedlings (labelled as open-pollinated, heritage, or heirloom on the package) from another gardener or seed supplier. Start with a few varieties for seed production and expand as you go along. To develop a larger variety of crops and to rotate the varieties grown on your BARAGA plot you can trade seeds with other gardeners. Seedy Saturdays in the spring are a great way to obtain new seeds (see <http://www.seeds.ca> for schedule).

Seed collection and storage

For plants propagated by seeds, the procedure for seed production is:

Let plants fully mature and partially dry out in the garden. Seed heads will develop after flowers for lettuce, spinach, etc. and seed pods for peas, radishes, beans.

- ◆ Extract seeds from plant (method varies with plant type)- cut off seed heads (eg. lettuce, spinach)- remove seeds from large pods (eg. peas, beans)- cut off bunches of small seed pods (eg. radish, broccoli, cabbage, kohlrabi, etc.)- scrape out seeds from flesh (eg. squash, tomato) and wash away flesh

- ◆ Dry the seeds (this is most important for viable storage). For tiny seeds in seed heads or pods, first dry out the seed head or pod and then shake over pan to remove dried seeds

- ◆ Place each type of seed in a paper envelope (the paper helps extract residual moisture) or a sealed plastic bag or container (only if you are confident the seeds are fully dry).

- ◆ Label the seed envelope (plant variety, date collected, location, etc.)

- ◆ Put seed envelopes in an airtight container with some rice grains or silica gel desiccant in the container to soak up any residual moisture.

- ◆ Store the seeds in a cool, dry, and dark place. Maintain constant temperature and humidity until the seed is used. A refrigerator or freezer can be used to extend viability of seeds for

many years, assuming the seeds are not removed too often.

◆ Plant propagation using bulbs, tubers, or plant cuttings (branch and/or root/bulb) is more effective for some plants. For example:

- ◆ Strawberries - transplant runner plantlets
- ◆ Potatoes - store some potatoes over winter in cool, dry place
- ◆ Garlic - dry out the bulbs and plant them in fall
- ◆ Rosemary or raspberry - cut branches and stick them in soil to develop roots



If you go to a commercial nursery, you will likely be told that you should buy new seed potatoes or new raspberry canes from the nursery to ensure disease resilience against various viruses and diseases. However, we know people ate lots of potatoes in the past and managed to grow them year after year without a commercial nursery supplier. Peru is famous for its long traditions of farming with hundreds of potato varieties. Your garden will be more resilient if you rotate crops and use several varieties of each plant (not necessarily all in the same year). The Irish potato famine can be partly blamed on a lack of diversity in the potato crops making them more susceptible to the potato blight disease.. In the spirit of learning, experiment on your own with seed saving and plant propagation. Talk with other gardeners, read books and visit web-sites, and figure out the best methods for seed production for your own garden.

Seed sowing

For plants needing a longer growing season, sow seeds in pots in February and place on a sunny windowsill at home or in a greenhouse or cold frame; transplant the seedlings into the garden when it warms up. Other seeds such as peas and beans are best planted directly in the garden (they dislike transplanting) once it has warmed up adequately.

Seed viability

How long seeds can be stored and still obtain good yields when planted is dependent on the original plant health and care taken in drying and storage. Seeds can be saved for many years and still be viable (that is with high percentage germination when planted). Consistently dry and cool is essential. It is best to periodically plant some portion of stored seeds and collect more seeds to ensure long term viability.

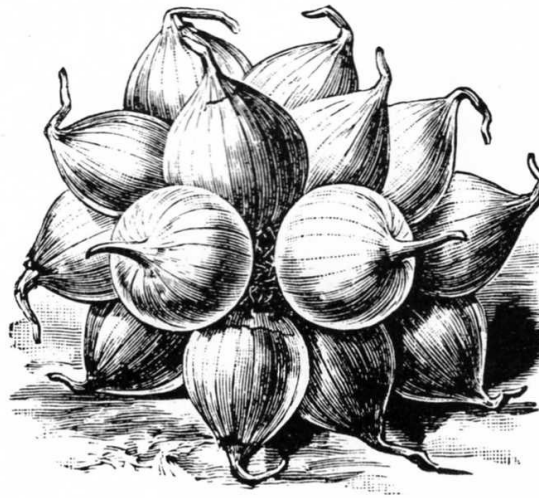
Avoiding cross-pollination

To prevent changing characteristics of a crop over generations, avoid cross-pollination between different plant varieties. If you are growing multiple varieties a plant, keep them well separated or use other specialized means to prevent cross-pollination (for instance crop covers; see references). Cross-pollination of heritage varieties, or heritage varieties with hybrids, can still happen, especially with so many gardens in close proximity.

If you have kept a store of saved seeds labeled with year of collection, you can re-grow original plant varieties if the current year's plants have inadvertently crossed with another variety. On the other hand, cross-pollination may introduce changes in plant characteristics which may be beneficial in some way.-----Good luck with your garden this summer. Try some seed saving and share your experiences with other gardeners. At the BARAGA summer picnic, please bring samples of your collected seeds.

References

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