

The Ohio Ornamental Plant Germplasm Center: Safeguarding Past and Future Treasurers, Today

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Do you ever wonder what happens to plant cultivars that are no longer commercially available? The life span of an ornamental crop is relatively short. Once it becomes too popular, the consumer is ready to embrace a new cultivar with larger blooms, fancier colors, or perhaps a more compact growth form. There may be nothing inherently wrong with the former cultivar, except for its inability to satisfy the ever-changing trends of consumer demands.

If the cultivar is a herbaceous ornamental, it may be preserved at the Ornamental Plant Germplasm Center, in Columbus, Ohio. Established in 1999 under an agreement between The Ohio State University and USDA Agricultural Research Service, The Ornamental Plant Germplasm Center (OPGC) is the only germplasm center in the U.S. Department of Agriculture's National Plant Germplasm System to focus solely on the preservation of herbaceous ornamental crops. Currently the OPGC preserves seeds, but it is expected that, in the future, cultivars that are difficult to propagate from seed will be stored in tissue culture form.

Plant germplasm centers are specialized repositories where seeds and other plant tissues are stored indefinitely for conservation purposes or for use in breeding programs. In addition to conserving precious heirloom cultivars, the germplasm center

also collects and evaluates wild crop species relatives, a valuable source of novel and economically valuable traits for future crops. Traits such as disease resistance, heat and drought tolerance and even fragrance may have been unintentionally lost during the selection and development of new cultivars. If present in the germplasm, these traits may be incorporated into future releases.

Maintaining the germplasm is not an easy task. Like every book in a library, each plant cultivar is carefully identified, cataloged in a database and stored for later use. Storage conditions, primarily temperature and humidity, are essential for the proper maintenance of seeds. However even under ideal conditions, seeds lose viability as they age. Seeds must be sown at least once every five to ten years to renew the repository. Plants are hand- or bee-pollinated, and fresh seed is then harvested to replenish the collection.

The staff at the germplasm center study seed viability, germination, and storage requirements. They also evaluate the characteristics of the accessions in their collection. All this information will be added to the database and made available to ornamental plant breeders all around the world. Everyone can access the information available at this and any of the USDA's National Plant Germplasm System through the World Wide Web

through the Germplasm Resources Information Network (GRIN). Plant material is also made available upon request within and outside the USA for research purposes and to facilitate the use of superior specimens as parents in breeding programs.

The collection is always increasing in size and at the moment, there is lots of room to grow. The OPGC has over 17,000 ft² of office, lab and greenhouse space and state-of-the-art seed storage and plant growth facilities to accomplish their goals. Nonetheless, the abundance and diversity of herbaceous ornamental genera in the floral and nursery industry can certainly be overwhelming. Therefore, OPGC director Dr. David Tay, gene bank curator Susan M. Stieve and other scientists and industry colleagues in the USDA Herbaceous Ornamental Crop Germplasm Committee must work hard to determine priority species to house in the center. Currently, their focus is on a group of thirty genera including *Aglaonema*, *Chrysanthemum*, *Hemerocallis* and *Phalaenopsis*, to name a few (Table 1).

The OPGC is an incredibly important asset to the floral and nursery crop development industry. It is committed today to safeguarding precious heirloom treasures from the past and valuable genetic material for the future. For more information on the Ornamental plant Germplasm

Center check out their website at
<http://hcs.osu.edu/opgc>.

Table 1. The top thirty ornamental genera stored at the USDA Ornamental Plant Germplasm Center (<http://www.hcs.osu.edu/opgc/genera.html>).

Aglaonema
Alstroemeria
Anthurium
Aquilegia
Aster
Baptisia
Begonia
Campanula
Chrysanthemum
Dianthus

Dieffenbachia
Euphorbia (Poinsettia)
Geranium
Hemerocallis
Impatiens
Iris
Lilium
Narcissus
Pelargonium
Petunia

Phalaenopsis
Philodendron
Phlox
Rudbeckia
Salvia
Spathiphyllum
Tagetes
Verbena
Veronica
Viola



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