

Propagation of Selected Perennials

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Greenleaf Gardens is a small family-owned wholesale perennial nursery in Yellow Springs, Ohio. The nursery specializes in growing over 800 taxa of herbaceous and woody perennials. The plant material is grown in quart and gallon containers and sold to garden center and landscape customers in the greater region of southwestern Ohio. We propagate material by seed, softwood cuttings, root cuttings, and divisions.

I would like to share with the Society just a few of our technologies and practices we use to achieve a more synchronous crop. A few of the tools we use in our seed operations include hand-held seeders, strainer, spray bottles, PEG6000 media, and flats.

One way we achieve synchronous stands in our seed flats is to soak seed that exhibit exogenous dormancy (if hard seed coated) in polyethylene glycol (PEG6000). PEG6000 acts as a softener with *Baptisia*, *Lathyrus*, *Lupinus*, and *Thermopsis*. The PEG6000 is dissolved 1 tablespoon liter⁻¹ warm water. The seed is soaked for 1 to 3 h, then strained, dried, and placed in the refrigerator. These seed are sown as soon as possible.

Another group of seed is soaked in warm water with PEG6000, rinsed, strained, and placed in plastic bags with moist vermiculite. These seed are allowed to pregerminate in the refrigerator. When the radicle appears in a majority the seed is sown and placed under mist. Once true leaves appear and the seedlings are rooted to the bottom of the flat, the trays are removed and hardened off. *Delphinium* is an example of a genera handled in this way just as soon as seed is received. Seed viability with these genera declines by the month if left untended. Another group of seed handled this way is the "frost germinators". Trays of bagged primed seed can be moved back and forth between warm greenhouse benches and the refrigerator until the appearance of the radicle; at which time the seed is sown. Genera in this group include *Dicentra exina* and *Clematis paniculata*.

Most seed are simply sown and placed under mist with no pretreatment required. Attention must be paid to the physiological dormancy of the genera and if a cover of vermiculite, media, or sand is required, or no cover. These requirements are listed in many good seed catalogs. These seed are sown and placed under mist. Once true leaves and rooting are observed the flats are removed and hardened off.

Seedlings are moved up to 2-inch plug tray and grown on and then upgraded to quarts and gallons for sale.

Plants are established the summer and autumn before selling and overwintered in unheated poly huts. Cultural care includes water, fertilizer, and herbicide at the appropriate time.