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## Ericaceous Plants from Seeds

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There is undoubtedly thousands upon thousands of ericaceous plants that are grown annually from cuttings. In many cases these plants are named clones and as a part of the natural selection process the ability to root from cuttings is an integral part of the success of the plant in the market place. However, many individual species of ericaceous plants such as *Rhododendron maximum*, can only be rooted with marginal to poor results and certain plants, such as *Pieris floribunda* and wild forms of *Kalmia latifolia*, can not be rooted at all. Aside from collection from the wild the only feasible source of some *Rhododendron* species and related plants is via seed.

### NURSERY PRACTICE

Several key ingredients are essential for good nursery production of ericaceous seedlings.

Of utmost importance is fresh seed. Since many ericaceous plants have seeds ranging in the neighborhood of 300,000 to the ounce the likely hood of seed degradation over time is to be expected. Dirr and Heuser (1987) suggest that seed will remain viable with a moisture level of 4% to 9% for about 2 years if kept in cold storage. However, work done at Lorax Farms has shown seed of *P. japonica* and *Leucothoe axillaris* to degradate after 1 year in cold storage. The importance of fresh seed can not be over emphasized.

Second in line to fresh seed is the need for light. Work done by Blazich et al. (1991) and Duncan and Bilderback (1982) showed that for *Rhododendron maximum*, *R. catawbiense*, and *K. latifolia* light was absolutely essential for good germination percentages. Both groups of researchers found that while a minimum photoperiod is needed for good germination (> 4 h) once this level is achieved there is an upper limit of about 12 h with little or no appreciable gain past that point. In practice it

should be considered that all ericaceous seeds germinate best with light and with a photoperiod of 10 to 12 h.

Ericaceous seed does not need to be cold stratified and, therefore, it can be directly be surface sowed without stratification. This can be facilitated for proper spacing by mixing the seed with fine silica and or as has been suggested by Hamernik (per comm.) sugar. To do this mix 5 to 6X the amount of substrate with 1X amount of seed. Mix thoroughly and sprinkle the resultant mixture with a salt shaker over the medium-filled tray (with or without dividing cells). Afterwards the seed should be misted thoroughly so as to wet both the seed and the medium.

The selection of media is important as too coarse of a mix will result in the seed being washed down into the crevices and consequently be hidden from the light. While milled sphagnum is an appropriate choice, it is inconvenient to use and there are numerous brands of commercial bag propagation mix that readily fill the bill. Caution should be exercised in choosing a mix that has a uniform texture and not one that is more suited as a potting mix. Two excellent mixes are Grace Sierra Vegetable Plug mix and Grace Sierra 300 or 310 mix.

Damping-off fungi can sometimes be a problem and this can be readily corrected by watering the soil prior to seed sowing with either Manzate at 1 tsp gal<sup>-1</sup> or a benlate derivative. If Manzate is used it has the dual purpose function of stopping the spore germination of both mosses and liverworts. These weed-like pests can rapidly overcome the tiny seedlings making further growth and transplanting virtually impossible.

It should be noted that the fungicide must be applied before the seed is sown and may need to be applied at regular intervals afterwards if the mosses or liverworts become noticeable.

Once seed is sown the trays can be placed under intermittent mist or hand misted on a regular basis. Duncan and Bilderback (1982) had over 90% germination of *K. latifolia* and 88% germination of *R. maximum* when the seed trays were placed under intermittent mist.

Once seedlings are quite evident it is best to remove the trays from the mist and institute a regular hand watering or misting to provide adequate moisture. When in a greenhouse environment care must be exercised to prevent the seedlings from becoming too hot. High temperatures can lead to cessation of growth prematurely and will often give rise to the occurrence of damping-off fungi.

When the seedlings are around 4 or 5 mm high and have true leaves they can be successfully transplanted. The tiny seedlings are often too small to be handled by human fingers and the transplanting can be facilitated by using 15-cm (6-inch) forceps. The tip of the forceps are excellent for teasing apart the very tender seedling and for grabbing the very small roots and dragging them down into contact with the new potting medium. Once transplanted seedling trays are finished they should be watered in with the Manzate mixture as described above. They then should be placed under intermittent mist for 5 days and at the end of that time they should be removed to a regular greenhouse or nursery bench and treated as normal seedlings.

### TIPS FOR TRANSPLANTING ERICACEOUS SEEDLINGS

- 1) Soil Use fine-grained material such as Grace Sierra 300 or Vegetable Plug Mix.
- 2) Pretreat soil before sowing of seed with Manzate- or Benlate-

derivative-type fungicides to prevent damping off. Mazate has additional benefits of preventing mosses and liverwort.

- 3) Mix seed with fine silica sand and/or sugar. Sprinkle on with a salt shaker to achieve uniform distribution of seed.
- 4) Transplant seedlings after true leaves have formed. Usually seedlings are 5 mm in height. Use long forceps as a transplant tool. Be sure to treat transplant soil with fungicide prior to insertion of seedlings.
- 5) Place transplanted seedlings under mist for 5 days, then remove and treat as normal seedlings. Avoid high light and high heat conditions. Begin fertilization starting with 100 ppm N.

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