

***Rhododendron maximum* for the Next Millennium**

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INTRODUCTION

Rhododendron maximum is locally known as great laurel, great rhododendron, rosebay, or max depending upon where it is encountered. Despite an extensive native range from Georgia into Ontario, Quebec, and Nova Scotia, it is only locally abundant to the point of being a dominant understory species in and near the Appalachian mountain range of North America. *Rhododendron maximum* is a much sought after plant for landscaping where a bold evergreen shrub is needed in shady locations. Full sun is tolerated only in the coolest parts of the native range.

The most common current use of *R. maximum* is for screening in shady areas or to enhance natural landscapes, particularly those involving stonework. Since plants 30 ft or more tall and 20 ft across exist, it can provide a formidable screen with time. Trusses composed of 20 to 30 flowers are most often about 4 inches across and white with yellow spots at the base of the corolla but pink-flowered forms are common in the Appalachian highlands. The most distinctive feature is narrow, dark green leaves from 4 to 12 inches long and 2 to 3 inches wide (Bir, 1992; Leach, 1961).

PRODUCTION PRACTICES

Wild Collecting. In states, such as North Carolina, where it is currently legal to collect wild rhododendrons, by far the largest numbers of plants entering commerce are wild collected from either private or public lands. A permit for collecting plants in some National Forests can be obtained from the U.S. Forest Service. *Rhododendron maximum* is not a currently endangered or threatened plant in the southern Appalachians.

Collecting is typically done by independent contractors who dig "pans" (shallow rootballs), tying up branches while balling and burlapping root systems. Plants are harvested from a few weeks after first frost in the fall until new growth starts in late spring. At the highest elevations, this can be an 8-month harvest season. "Pans" are harvested because roots typically do not extend deeper than a few inches into native soils. Plants are most often harvested from areas where they are locally abundant and often are threatened by residential and road development or timber harvesting. Many of these plants would be destroyed if not harvested for ultimate landscape use. Collected plants are almost always sold to rewholesalers who act as brokers. These plants are often 4 ft or more tall.

Cut-offs. Often the most luxuriant collected plants shipped to market are the result of either timber production or land clearing for some other purpose. These plants are pruned to the ground then multiple sprouts are allowed to develop for a few years before plants are balled and burlapped for shipping to market. In this system of production, most of the root system remains in North Carolina soils when the vigorous new tops of plants go to market. Despite this, survival rate, if plants are only moderately well cared for, is high. Cut-off plants are usually about 3 ft tall when

marketed and possess many vigorous stems with little branching of individual stems near the earth.

Cutbacks or Stock. In this system of production, the tops of plants are removed, rootballs dug and transported to a field nursery then replanted at the same depth as they were originally growing in the wild (Bir, 1981). Soil in production fields is prepared ahead of time; pest management, pruning, and fertilization are practiced. These are truly nursery-grown plants with rootstock being the propagules collected from the wild. Generally, 4 years are required to produce 2-ft tall plants which are harvested over the following 3 to 5 years due to plant-to-plant variation in growth rate. Since both root systems and tops of plants are regenerated at the same time, they are in balance. These plants have an excellent survival rate in the landscape when provided any reasonable care. I estimate that these plants account for no more than 10% of *R. maximum* available for sale in most years.

Seedlings. Seed may be harvested in fall. These seeds have no stratification or scarification requirement but are tiny with seed counts reported in excess of 100,000 per ounce. Light is required for seed germination (Blazich et al., 1991; Duncan and Bilderback, 1982). A few growers are sowing seeds either under lights indoors or in outdoor seedbeds under shade similar to practices used in conifer seedling production (Bir, 1985). Plants from indoor production are pricked out of seed flats and transplanted into containers where they are grown for 1 to 2 years. Plants in outdoor beds are generally allowed to develop in germination beds for 2 to 3 years.

From both methods of seed propagation, plants are most often transplanted into beds or into the field. The best quality plants are produced under shade below 3000 ft. in elevation in North Carolina or in sun on north- or east-facing slopes with protection from wind at elevations greater than 3000 ft. Proper site selection for good air and soil drainage as well as soil preparation to remove obstacles and provide proper preplant nutrition based on soil analysis prior to planting is essential for high quality plant production. While excellent plants can be produced by this method, obtaining an adequate price for a 6- to 8-year-old plant grown from seeds that is 24 to 30 inches tall has been difficult. I estimate that less than 5% of plants available in any year are produced by this method.

Cuttings and Micropropagation. To my knowledge there is no commercially significant production of *R. maximum* by either of these methods. Experiments in cutting propagation have shown promise (Williams and Bilderback, 1980) but have not been pursued.

DISCUSSION

Rhododendron maximum is a desirable landscape species that may become nearly impossible to purchase in commercially reasonable numbers if current trends continue. Approximately 95% of plants currently sold have their origins as wild plants. We are mining the existing resource with no knowledge of whether such production is sustainable yet *R. maximum* does not appear to be threatened or endangered in the southern Appalachians. Current production appears to be a very slowly renewable resource via wild collection, cut-off, or cutback production.

With increased land development in areas where *R. maximum* is abundant, increased social and political pressure to preserve existing populations on public

lands, and a reduction in independent contractors willing to do the hard work of digging plants from the wild for relatively low wages, true nursery production rather than wild harvest of this valuable landscape plant is being encouraged. The technology for some production practices already exists. However, until there is economic incentive to nursery propagate and grow this species little true nursery production and development of superior commercial production technology can be expected to occur.

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