

# **Survival of the Fittest: Azalea Seedling Selection Process at Transcend Nursery**

**Robert Lee — Independence, Louisiana**

Transcend Nursery is located in Southeast Louisiana and is owned by Robert and Dixie Lee. Son Ryan and daughter Kelsey assist with the nursery. I have been working with azaleas since 1970, beginning with my first part-time job at Folsom Nursery, a commercial nursery that specializes in the production of quality landscape azaleas. I was employed as an azalea grower for Beason Creek Nursery and was owner of Savannah Spring Nursery. My fascination with azaleas was kindled at an early age, and azaleas continue to intrigue me. For the past several years, I have been actively hybridizing to develop unique and hardy cultivars of azaleas. Association with organizations such as the Azalea Society of America and the American Rhododendron Society has been extremely rewarding and has supplied me with a wealth of information about the many aspects of azaleas.

Once a person has successfully mastered the ability to cross-pollinate azaleas, germinate the seeds, and grow the seedlings, the number of azalea plants a person can accumulate over time can become overwhelming. An overriding desire to keep almost every seedling can decrease the overall effectiveness of a breeding program. It also can become a burdensome situation that is both space- and time-consuming. A key component to an azalea-breeding program is a continuous selection process that eliminates inferior seedlings and identifies potentially superior seedlings.

The selection process at Transcend Nursery begins at an early stage. Once the azalea seedlings have reached approximately one inch in height in the germination trays, they are transplanted into individual two-inch-diameter growing containers. All the viable seedlings of each cross are

transplanted into these transplant trays. Large numbers of seedlings can be transplanted at this time because it is relatively inexpensive and doesn't require a lot of space. In the spring of 2000, approximately 40,000 seedlings were potted in these small containers. New containers and growing trays are used to help prevent potential contamination of fungal disease from previous plantings. The plant trays are raised approximately four inches off the ground to give adequate drainage. Filtered shade is provided to protect the young seedlings from direct sunlight. The medium used for potting consists of one part ground peat moss to five parts finely ground pine bark mixture. The pine bark mixture consists of 10-percent sand with two pounds of Micro-Max and two pounds of lime per cubic yard. A liquid fertilizer is initially applied to get the young seedlings off to a good start. Later, a granular fertilizer is applied to maintain adequate growth throughout the growing season.

One selection goal is to develop azaleas that have more resistance to the common pests and diseases that may cause damage to azaleas. Therefore, a minimal amount of chemicals (insecticide, miticide, and fungicide) is applied to the young seedlings. A natural elimination process is allowed to occur. The newly transplanted seedlings are not provided greenhouse protection and are subjected to whatever weather conditions may come. In the Gulf South, this could range from extremely hot and humid days and nights during the spring and summer to wildly extreme temperature fluctuations during the fall and winter. Hot and humid conditions are as responsible for seedling demise as extremely cold conditions. This "survival of the fittest" plant selection mentality will hopefully result in a

selected group of azaleas that is healthy and hardy. At Transcend Nursery, less than 50 percent of these little seedlings will continue to the next level of selection.

After the seedlings have grown in the transplant trays for 12 to 18 months, it is time to pot the seedlings into six-inch containers. The elimination process becomes more decisive at this stage. Potting a seedling into a six-inch container is costly and space consuming. Only the healthiest and most vigorous seedlings are continued to the next phase. Plants with irregular leaves and other deformities are discarded. At Transcend Nursery this spring (2001) 14,000 seedlings were potted into six-inch containers. The container yard for the six-inch pots is located in full sun under a timed sprinkler system. The plants are again subjected to any climatic conditions that arise. This is very similar to the way commercial growers produce azaleas. The newly potted plants are fertilized, sheared, and maintained as with any traditional azalea crop. An azalea that can withstand commercial growing processes has a better chance of being accepted in the nursery industry.

As the azalea seedlings grow, the plants are regularly observed, and inferior plants are removed. Plants that have poor growth patterns or leaf deformities or those that just fail to thrive are eliminated at this point. The overall objective is to retain only the healthiest and most desirable plants throughout the selection process. Past experience with keeping seedlings that lack vigor has been extremely unrewarding. Keeping plants that have leaf deformities, in hopes that the plant will outgrow this condition, has also proven unsuccessful. One such plant that otherwise has a beautiful flower has been planted in my yard

since 1993 and continues to have what I call "crinkle leaf." This leaf deformity seems to be genetically based.

First-year seedlings hybridized for multi-seasonal blooming traits usually started their blooming for the first time around the middle of June. All of these initial plants were the result of crosses between *Rhododendron oldhamii* 'Fourth of July' and numerous named cultivars that have fall-blooming tendencies. Plants were selected not only for all of the common desirable traits (flower color, flower form, growth habit, etc.) but also for their free-flowering characteristic and the ability of the flower to withstand heat. Each selected cultivar was propagated and tested under commercial production conditions. The Encore Azaleas were selected from these cloned seedling groups by Flowerwood Nurseries, Inc., and PDSI of Loxley, Alabama. Tedious work, data collecting, observation, along with numerous man-hours went into the final testing and selection of this group of azaleas.

The cultivars *R. 'Watchet'* and *R. 'August Through Frost'* crossed with several Encore Hybrids have produced plants with a wider color variation (especially white) not commonly found in the Encore Azaleas. Most of the *R. 'Watchet'* crosses also have very heavy fall-blooming characteristics. One oddity noted with these crosses is the occasional very dwarf-type seedlings that are produced. These dwarf seedlings are all very similar, regardless of the cross, with a compact growth habit and small waxy leaves. *R. 'August Through Frost'* crossed with several of Encore Hybrids has produced plants that are heavy spring bloomers with repeat blooms beginning in May and ending in late fall with the arrival of colder weather. These plants would almost bloom continuously under the right conditions. One negative characteristic of the *R. 'August Through Frost'* crosses is that some have flowers that tend to wilt down very easily with excessively

warm temperatures. Selected seedlings from the *R. 'Watchet'* and *R. 'August Through Frost'* crosses are presently under final evaluation.

After the seedlings have been in the six-inch containers for approximately one year and spring blooming begins, another aggressive selection event gets underway. An azalea seedling's first bloom may not be the best indicator of a plant's future performance; however, it is the most practical criterion. I have selected what I had considered some spectacular blooming plants solely on their first flowering, only to be terribly disappointed the next time they bloomed. However, as a general rule, most flowering seedlings selected at this time tend to stay fairly true to flower size, form, and color during the next blooming season. Slight variations of flower color can occur from year to year due to environmental and nutritional factors. Healthy seedlings that develop heavy flower bud sets, have good flower-color clarity, have a desired flower form, and are very floriferous during their first blooming period, are in all probability the most viable plants to keep for further evaluation. Selecting flower color is a very subjective undertaking, which differs from person to person. Honestly, I have never seen an ugly blooming azalea. Deciding which flowering plant will be selected is based on the overall appearance and effect that it presents. Plants that do

not make the "cut" are removed (reluctantly) to make room for the oncoming crop of new seedlings. My past experience as a commercial azalea grower and azalea collector has had a big influence on what I wish to see in an azalea. Azaleas hybrids by nature have a wide spectrum of flower color, size, and form. This, for me, is the true wonder and beauty of azaleas.

The selected azaleas are potted into to a larger nursery container. Each plant is carefully checked for winter damage before being potted. Plants that show any bark split or cold damage are eliminated. Individual plants are labeled with metal tags at this time to ensure accurate identification. Only plants that a person truly wants to care for and carefully evaluate for the next several years should be allowed to reach this point. I visualize my plant breeding and selection process as a pyramid-shaped type of venture, realized over time, starting with a broad base composed of numerous seedlings and ending at an apex of a few remaining superior plants. Over time, through good observation and record keeping, some of these superior seedlings may prove themselves worthy of being named and registered.

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## A FAMILY REUNION 2002

A Joint Convention  
of the  
American Rhododendron Society  
and the  
Azalea Society of America

ATLANTA, GA  
APRIL 17-21, 2002

See our web page at <http://arsazalea.tripod.com>

**Buddy Lee** has been involved with azaleas for almost 30 years, and is best known as the developer of the multi-season blooming Encore Azaleas. As the owner of Transcend Nursery, he is currently active in the development and testing of new evergreen azalea varieties. He is a long-time member of the Louisiana Chapter of the ASA and has been their president; he coordinated the 1991 and 2000 annual conventions, and he is currently Vice President of the ASA.



These blooms generated by crossing the lavender spider azalea *R. 'Koromo Shikibu'* with the bright white *R. 'Snow'* show how variable the resulting populations can be.  
(Photo by Buddy Lee.)

## More Convention Highlights

The addition of a new chapter with 40 new members in the Hendersonville, North Carolina, area shows how vital our Society is and how interest in studying the local native azaleas has helped attract members. Here are a few highlights of the annual meeting.

**1. Changing Leadership:** Bill Bode hands over the reins of leadership to new Society President Joe Schild. Bill was given a standing ovation for his services before we let him sit down. [Photo by Bill Miller.]



**2. Joe Schild Takes Over:** Not only is Joe Schild our new Society President, but he also won the award for Best Article, for his "Fire on the Mountains" article from the June issue. [Photo by Bill Miller.]



**3. Presentation of New Charter:** Out-going Society President Bill Bode presents Vaseyi Chapter President Ed Collins with the chapter's new charter, while Joe Schild looks on. [Photo by Bill Miller.]



**4. *R. vaseyi*:** *R. vaseyi*, the "Pinkshell Azalea" was the featured azalea for the convention, being the namesake for the new Vaseyi Chapter formed in the Hendersonville, North Carolina, area. This dark selection is named *R. "419.2"* for milepost location along the Blue Ridge Parkway where it was found. [Photo by Ed Collins.]

