

# Perfecto Mundo<sup>®</sup> Azaleas: New, Problem-Solving Evergreen Azaleas from Western North Carolina

**By Irene Palmer,** Research Specialist, Mountain Crop Improvement Lab, Mills River, NC

**E**vergreen azaleas have entranced and delighted gardeners across the globe for centuries. Native to Japan, China and Taiwan, these plants have a long history of human selection and improvement. European hybridizers began exploring evergreen azaleas in the late 1860s, building on an extensive 400-year cultivation history in Japan and China. Throughout this long period, hybridizers endeavored to uncover new traits, stack existing ones and watch for unique sports. Today, breeders leverage large-scale population development and selection to find those few exceptional plants capable of high performance in both the landscape and the crucible of large production systems. »

## RESEARCH

However, the Perfecto Mundo® story did not begin with the goal of creating a new line of problem-solving evergreen azaleas. Instead, it started with a question that has intrigued azalea breeders for generations: Is there a feasible pathway to developing attractive hybrids between deciduous and evergreen azaleas to combine evergreen foliage with fragrance and novel flower colors? The Mountain Crop Improvement Lab (MCIL), led by Dr. Tom Ranney, began to take an interest in this pursuit in the early 2000s. As is usually the case, this foundational question led to many others, including questions surrounding the mode of inheritance of flower color, whether seedlessness extended bloom time and what beneficial traits existed in lesser-known evergreen azalea species.

To answer these questions, Dr. Ranney and his team began accumulating evergreen azalea species and cultivars and developing



Irene Palmer collecting pollen for azalea crosses



Irene preparing a yellow deciduous azalea hybrid for pollinations

new breeding lines, with the hope of developing elusive evergreen-deciduous azalea hybrids. Located in Mills River in the mountains of western North Carolina, the team soon noticed that cold hardiness was a significant issue for many popular evergreen azalea introductions — especially those developed in the Deep South. Working to combine cold hardiness (e.g., *Rhododendron yedoense* var. *poukanense*, *R. kaempferi*, and Girard hybrids) with reblooming (e.g., *R. oldhamii* and *mucronatum*), double flowers (e.g., ‘Rosebud’ and ‘Sky Hill Pose’), dark foliage color (e.g., ‘Maruschka’) and compact habits (e.g., ‘Cherry Drops’ and *R. nakaharae*), evergreen azalea breeding at the MCIL grew into a significant breeding project in its own right. Since MCIL researchers specialize in the development of noninvasive nursery crops, we were able to use some of the same breeding steps associated with the generation of seedless cultivars to create unique populations. In particular, the breeding team was able to leverage the *gigas* effect (a beneficial effect associated with plants having more than the typical number of chromosomes — i.e., polyploids) to produce populations with large, long-lasting flowers.

After a decade of population development, selections, field evaluations and thousands of discarded seedlings, 150 top selections made their way up to Spring Meadow Nursery for in-depth, replicated container trials beginning in 2016. The Spring Meadow Nursery research and development team performed the arduous work of weekly assessments of top commercial and internal controls and MCIL top selections to track critical components of container performance, including bloom time and duration, flower color and size,

plant habit, disease/pest incidence, and container presence.

Ultimately, the Perfecto Mundo series boasts some of the longest spring blooms of any evergreen azalea line on the market, as well as strong reblooming in the fall. Plants were selected for their high floral coverage and dense habits in containers and the landscape. They are reliably hardy to USDA Zone 6b (possibly colder) and, in field trials in Mills River, survived winter temperatures as low as 0°F. Members of the Epic™ series include selections with exceptionally large, deeply saturated flowers, while plants in the Carpet™ line boast large flowers on a ground-cover habit. New flower forms and colors are added yearly, as more elite selections make their way through rigorous field and container trials.

As a research specialist and plant breeder at the MCIL, I have the great fortune (and challenge!) of continuing this work, as well as leading breeding efforts in Hydrangea, flowering quince and Camellia. And yes, we continue to chase the dream of evergreen-deciduous hybrid azaleas. As Dr. Ranney often says, “The best is yet to come!”



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