- Chicago Botanic Garden (also implementing the Codes)
- Missouri Botanical Garden (also implementing the Codes)
- North Carolina Botanical Garden (also implementing the Codes)
- University of Washington (also implementing the Codes)
- Florida Nurserymen and Growers Association
- Tampa Bay Wholesale Growers Association
- Perennial Plant Association
- Texas Nursery and Landscape Association
- Michigan Invasive Plant Council
- Southeast Exotic Pest Plant Council

Voluntary is the key. Voluntary participation prevents untenable regulations, promotes good citizenship, enables all groups to share equally in the problem — and long-term is the most effective control of invasive pest plants.

Propagation Problems and Solutions for Texas SuperStar® Plants©

Jerry M. Parsons
Texas Cooperative Extension Service, Texas A&M University System, 3344 Cherry Ridge Drive, Suite 212, San Antonio, Texas 78230

INTRODUCTION

Texas SuperStar® is a Texas A&M University System trademarked nomenclature and label which is bestowed on specially selected plants which have attributes that make them Texas' tough and consumer friendly. Skeptics often wonder how certain plants can be chosen as better than others. While it is true some people have never met a plant they didn't like, plants, which attain SuperStar® status must be attractive and useful to the masses rather than to a special few hobbyists and collectors. Every effort is made to ensure that SuperStar® plants will consistently perform well for Texas consumers regardless of their plant growing expertise. There is no perfect plant, so limitations of highlighted plants are explained to avoid discontent by those who overlook the obvious when growing plants. Realizing that some folks "can mess up a ball-bearing" and no plant is "bullet-proof", everyone is not successful with SuperStar® plants. However, the vast majority of successful gardeners are making Texas SuperStar® plants a permanent part of their landscapes. This explains why the majority of Texas SuperStar® plants have generated millions of dollars in revenue for wholesale growers. The characteristics that make a plant a winner are outlined at <http://www.plantanswers.com/superstar_selection.htm> and images of all selections can be seen at <www.SuperStar.com> and <http://www.ktc.net/plantanswers/superstar_gallery.htm>.

The majority of plant selections, which have attained the Texas SuperStar® status as listed at <http://www.plantanswers.com/superstar_listing.htm>, have originated in San Antonio under the tutelage of horticulture interests in this area. A very important factor, which must be considered when selecting plants for SuperStar® educational and marketing campaigns is whether sufficient numbers of plants can be produced to meet the increased consumer demand to be generated. Nothing angers a consumer or nursery producer more than having insufficient numbers of pro-

moted plants available. I will discuss some of the obstacles, which were overcome in order to proliferate selected Texas SuperStar® plants.

Bluebonnet (*Lupinus texensis*). This is Texas' state flower and the first Texas SuperStar®. It was introduced in the Fall 1989. The natural affinity for this beloved state flower made this promotion an overnight success and launched the Texas SuperStar® program. Eleven years later in 2000, the 'Texas Maroon' ('Alamo Fire') bluebonnet became the eighteenth SuperStar® promotion. The connection to Texas A&M Aggies and winning the EuroFlora Award for the Most Unique Color as 'Alamo Fire' in Europe launched this bluebonnet color as a standard in Texas. Wildseed Farms (<www.wildseedfarms.com>) in Fredericksburg, Texas is now producing and distributing seed of this Texas SuperStar®.

The proposed goal of this project, which began in 1980, was accomplished in Spring 2003 when the first design of a Texas State flag was planted using red, white, and blue bluebonnets (for details see: <http://www.plantanswers.com/sabbstory.htm>). Peterson Brothers Nursery (San Antonio, Texas) and I have spent 20 years developing a process of growing bluebonnet transplants, which are easier to plant than seed. We have also selected for interesting color variants, as described at <http://aggie-horticulture.tamu.edu/plantanswers/98promotions/julyoct/julyoct.html> and <http://aggie-horticulture.tamu.edu/plantanswers/movies/bluebonnets/index.html>.

The key to rapid and uniform germination of seed for growers producing transplants and farmers planting commercial bluebonnet seed crops is chemical scarification with concentrated sulfuric acid from 45 min to 2 h. The research describing this scarification technique can be found at <http://www.plantanswers.com/research_lupinus.htm>. Drenching bluebonnet seedlings or a pre-plant furrow application of terrachlor reduces damping-off disease.

Firebush (*Hamelia patens*). This is a root-hardy perennial, drought-tolerant plant, which was the second SuperStar® introduction. It was promoted in May 1990. The firebush was the first shrub-small tree to be introduced as a Texas-tough perennial for difficult growing conditions. It blooms in small containers as a transplant and is the ultimate hummingbird-butterfly plant for hot, dry weather. It was considered difficult to root before horticulturists discovered the timing and conditions needed to increase the rooting percentages.

In order to have a spectacular display plant to generate consumer sales, growers were not taking cuttings until late in the fall. By the time cuttings were taken, the plant had decreasing growth rate because of cooler temperatures. Hence, rooting percentages were extremely low. Complete information on propagating this species can be found at <http://www.plantanswers.com/research_firebush.htm>.

Satsuma Mandarin (*Citrus unshiu*). The fifth Texas SuperStar® plant promotion was introduced in Spring 1993. This selection offered Texans a cold-tolerant citrus with high quality, seedless fruit. Plants can be grown in a container in northern areas of Texas. It is an evergreen and has fragrant flowers in the spring as well as deep-orange, delicious fruit in the fall. The main varieties offered in 1993 were 'Kimbrough' and 'Armstrong Early'. In 2002, Dr. Larry Stein and I introduced several new satsuma varieties, which ripen earlier and produce higher quality fruit. Hopefully most of these selections will be grown on their own roots to control tree size and avoid rootstock-sprouting problems. The new satsuma mandarin orange virus-tested selections are: 'Miho', 'Seto', 'Okitsu', and 'Mister Mac', an 'Owari' se-

lection. They will be available in several years as soon as sufficient plant numbers can be grown. The entire satsuma introduction history and cultivar statistics are described at <http://www.plantanswers.com/researchmiho_seto.htm>.

'Texas Gold' Columbine (*Aquilegia chrysantha* 'Texas Gold'). This was the sixth Texas SuperStar® released in the Spring 1993. This is one of the first flowers of spring, grows best near the trunk of a deciduous tree (for shade in the summer and sun in the winter), and is the only columbine which will live through Texas summers. It is a Texas native. 'Blazing Stars' columbine (*Aquilegia* ×*puryearana* 'Bernice Ikins') is a cross of two Texas native columbines and will soon be available. Before these superior columbines could be economically produced, seed germination had to be clearly understood. Production research enabled growers to market a blooming, 1-gal-container columbine in less than 1 year rather than the traditional 16-month growing time. For germination procedures, see <http://www.plantanswers.com/research_seedgermination.htm>.

Belinda's Dream (*Rosa* 'Belinda's Dream'). This rose became the 25th Texas Superstar® and was introduced in Spring 2002. It is the first Superstar®rose. It is a combination of an old fashioned (antique) and hybrid tea with fragrance and durability. One reason this rose was chosen was because it is extremely easy to root from cuttings and can be successfully grown by large commercial producers using daily overhead watering without severe damage from fungus diseases. This means that the rose can be mass propagated without the need of expensive and time-consuming grafting onto a rootstock. Because of the ease of propagation, producers were able to grow large quantities of marketable plants prior to its promotion and marketing. Because of its potential landscape plant value, over 50,000 plants were presold, making it a highly profitable item before the actual promotion began! The rose has high sales potential based on its attractive floral characteristics and fragrance, which is not the case with many antique roses; see <http://www.plantanswers.com/roses.htm> for details.

'Blue Princess' Verbena (*Verbena* ×*hybrida* 'Blue Princess'). This was the 12th Texas SuperStar® promotion and one of the most popular plants ever introduced. It was promoted in Spring 1998. A made-for-Texas verbena named 'Blue Princess' was brought back from England by Greg Grant. This verbena and its offspring are the only true perennial verbena for Texas. They are more cold-and-heat tolerant and have larger flower heads than any previously available verbena selections. They are more disease and insect tolerant as well. 'Blue Princess' verbena is the most floriferous and vigorous growing selection in Texas when propagated from virus-free stock. Because the original stock of 'Blue Princess' became contaminated with virus, a seedling selection from 'Blue Princess' named 'Dark Lavender Princess' from BallFlora is now substituted for and sold as 'Blue Princess'. Many seedlings of 'Blue Princess' possess the many strengths and attributes of the parent. In 2003, BallFlora released the first certified, virus-free cuttings of 'Rose Princess', which is a seedling of 'Blue Princess'.

The VIP Petunia (*Petunia violacea* 'VIP'), (Violet In Profusion or Very Important Petunia). This petunia was introduced Spring 1999 and became the 15th Texas SuperStar®. The original plants were grown from seed brought from Germany by Greg Grant. Commercial nurserymen considered the flowers were too small to be

successful, but it was the only plant they produced that the workers wanted to take home. The 'VIP' petunia was a stand-alone SuperStar®, which was soon to give rise to one of the most famous Texas SuperStars® of all time.

'Laura Bush' Petunia (*Petunia* 'Laura Bush'). A seedling of the 'VIP' petunia produced a superior selection of old-fashioned, fragrant, reseeding petunia which was given the name 'Laura Bush' after the then first-lady of Texas. Mrs. Bush married well and now the 'Laura Bush' (*Petunia* 'Laura Bush') petunia is the only flower named after the First Lady of the United States of America. In the Spring 2001 the 'Laura Bush' petunia became the 21st Texas SuperStar®, a couple of years before George W. Bush became the 43 President of the United States; see <http://www.plantanswers.com/petunia_bush.htm>. Both of these petunias have been lost to virus contamination during vegetative propagation. A virus-free population of the 'Laura Bush' petunia can be obtained by periodically (every 6 months) growing a seedling population from the only seed source which is Wildseed Farms <www.wildseedfarms.com>.

Propagation Research from Mississippi State University©

Patricia R. Knight
Mississippi State University, PO Box 193, Poplarville, Mississippi 39470

INTRODUCTION

Native azaleas are undoubtedly one of the most spectacular flowering deciduous shrubs. They add much needed color to the landscape in the early spring when few other plants are blooming. Two of the earliest flowering native azaleas are *Rhododendron austrinum* (Small) Rehder. and *R. canescens* (Michaux) (Galle, 1987).

Rhododendron austrinum (Small) Rehder, Florida azalea, is a medium to tall branched shrub that reaches 4.6 m (15 ft) in height (Galle, 1987). Flower color ranges from pure yellow to yellowish-orange. Flowers 2.5 to 4 cm (1 to 1½ inch) long appear prior to the leaves in clusters of 8 to 15 blossoms. Native range of Florida azalea is northern Florida, coastal Alabama and Georgia, and southeastern Mississippi. Florida azalea is hardy in U.S.D.A. Hardiness Zones 6b to 10a.

Rhododendron canescens (Michaux), Piedmont azalea, is a medium to tall shrub that may exceed 4.6 m (15 ft) in height and may sometimes be stoloniferous (Galle, 1987). Flower color ranges from white to medium or dark pink with white to dark pink corolla tubes. Piedmont azalea seldom has a blotch. Flowers 2.5 to 4 cm (1 to 1½ inch) long appear prior to or with leafing out. Native range of Piedmont azalea is the coastal plains of North Carolina to Florida and west to Oklahoma and southeastern Texas. Piedmont azalea can also be found in the Piedmont areas of North Carolina, Georgia, Alabama, Mississippi, Tennessee, and Arkansas. Piedmont azalea is hardy in U.S.D.A. hardiness Zones 6a to 10a.

Reports vary concerning the ease of propagation for native azaleas. Bir (1992) reported that native azaleas root best when terminal softwood cuttings are taken when new growth has ceased. A 0.5 to 0.8% IBA powder or 1000 to 2500 ppm IBA solution is recommended. New growth should be forced under lights or rooted cuttings should be left undisturbed through normal winter chilling until new growth