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NEW CULTIVAR DEVELOPMENT: A CASE STUDY OF BEGONIA 'CHERRI-CHERRI'

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Abstract. A case study of the begonia 'Cherri-Cherri' is used to illustrate the steps involved in developing a new cultivar, from initial selection, through propagation methods, to promotion and sales.

Why New Cultivars?

Why not produce the same products year after year? Production costs are lower, the sales force always feels more comfortable promoting familiar products, and growers are more confident growing the same cultivars over and over. However, consumers are sometimes less motivated to buy the "same plants as last year;" the interest in new plant introductions is often quite high. Increased sales volume often results with the introduction of new cultivated varieties of familiar plants that offer the consumer new colors, new uses, or improved product. New products can also stimulate both sales and production departments with renewed enthusiasm; many employees respond positively to new challenges.

New cultivars must be developed to meet a present or future need in the market. The breeder and the producer must listen to the end consumers carefully, considering current preferences in plant materials and anticipating projected future needs. Breeders also must be in step with producers to develop cultivars that fit in with production regimes.

How then does *Begonia semperflorens* 'Cherri-Cherri' fill the demands of both producers and consumers? Like any new cultivar, begonia 'Cherri-Cherri' has gone through several development steps. These steps include breeding/selection/discovery of prospective cultivar, evaluation of possible uses for the cultivar, evaluation of methods of production and product size offered to growers, comparison trials with competing products, and promotion of the product to producers and consumers.

Selection of Cultivar

In summer 1992, John Griffis (JLG) was working as a consultant in Ireland. During a visit to a non-commercial greenhouse, he noticed what appeared to be a unique double-

flowered wax begonia growing in a large pot in among some rather ordinary appearing wax begonias. Since this wax begonia was different from any others he was familiar with, JLG asked permission to take a few cuttings. Stem pieces and leaf pieces were successfully introduced into tissue culture and the resulting small plantlets were shipped to the USA.

Once in Florida, the begonia plantlets were multiplied further in tissue culture. After a few months, small plantlets were transferred to soil in the greenhouses. After another few weeks growth, vegetative cuttings were taken from some of these plantlets to further increase the number of plants for evaluation. In late spring 1993, 4- and 5-inch pots of this new fibrous-rooted wax begonia were planted in the landscape at Florida Southern College (FSC), Lakeland, Florida. Their performance in both sun and shade during summer 1993 were most impressive as they outperformed and out-survived seed-propagated wax begonia cultivars from the cocktail series from Benary. A fall 1993 evaluation of the crop as a possible pot plant also yielded excellent results. Production of finished 6" pots in departmental greenhouses yielded plants that were compact and covered with sterile, multipetaled flowers that closely resembled red balls or cherries. The intense flower color in December compared favorably with the poinsettia Guthrie V-17 'Angelika Red'.

A search was conducted to determine if any American or European breeder had registered, trademarked, or patented a double-flowered, fibrous-rooted wax begonia. None was found. During spring 1994, efforts were made to locate other double-flowered wax begonias available in the USA. This



Figure 1. A finished 6" pot of begonia 'Cherri-Cherri.'

could have been a daunting task, since there are over 1000 species of *Begonia* and more than 10,000 cultivars (Bailey Hortorium, 1976). However, by its appearance and growth habit, this begonia was obviously a fibrous-rooted derivative of *Begonia semperflorens*, so the search was narrowed to only that type of begonia. Logee's Greenhouses of Danielson, Connecticut offers a large selection of double and "thimble flowered" wax begonias and plants of these varieties were ordered for comparison purposes. None of the Logee's varieties closely resembled or performed like the Irish wax begonia. This wax begonia appeared to be a true sport that warranted further development as a new cultivar. Encouraged by the plant's performance in the landscape and in the greenhouse, JLG contacted Earl J. Small Growers, Inc. of Pinellas Park, Florida during fall 1994. After some trials of their own, a decision was made for Small's to proceed with further development of this novel wax begonia. Since the flowers were bright red and hung down in clusters, the name begonia 'Cherri-Cherri' was suggested for the new cultivar.

Uses of Cultivar

Encouraged by the initial trial results in the landscape at FSC, Earl J. Small Growers decided to expand the trials. Some plants were put in 4½" pots for planting out in the landscape, others were put in 6" pots for sales to supermarkets, and still others were grown in 1- and 2-gallon patio containers. The plants grown in 4½" pots transplanted into the landscape performed as well as or better than other fibrous-rooted wax begonia cultivars available on the local market. The plants grown in 6" pots, shipped in boxes through a supermarket warehouse, developed necrotic spots on the leaves and flowers during shipping. The spots were in evidence when the boxes were opened at the supermarket. This 6" pot shipping trial was repeated several times with the same undesirable results. Begonias that were grown in 1- and 2-gallon patio containers and shipped to local nurseries did very well. There was minor breakage of the foliage during shipping, but no significant damage to the flowers. From those trials, it was decided that begonia 'Cherri-Cherri' should be promoted as a landscape or patio plant rather than a flowering pot plant.

Evaluation of Production Methods

Any commercially acceptable plant product must be grown for a profit without compromising quality. Production decisions therefore must be based on costs to produce only quality plant materials. Begonia 'Cherri-Cherri' is sterile, so it cannot be produced by seed. Production of liners from vegetative cuttings results in poor plant symmetry and in overall reduced product quality. Tissue culture propagation offers excellent quality and consistent production at only a slightly higher cost than vegetative cutting production. Additionally, plants from tissue culture are more free-branching, compact and symmetrical than plants from cuttings. The difference in production costs does not make up for the poorer quality of the liners grown from vegetative cuttings. Therefore, tissue culture is the preferred method of propagation. Agristarts, Inc. of Apopka, Florida has been selected as the exclusive propagator of begonia 'Cherri-Cherri'.

Comparison Trials

Begonias are an integral part of the product mix for bedding plant growers nationwide. On average, bedding plant



Figure 2. Begonia 'Cherri-Cherri' propagated in vitro.

growers devote 7.3% of their total crop to begonias, ranking them fourth in importance among all bedding plants produced in the USA (Behe and Walker, 1994). A recent evaluation of fibrous-rooted begonia cultivars in Florida (Howe and Waters, 1995) provided much information with which to compare begonia 'Cherri-Cherri'. In trials at Earl J. Small Growers, Inc., tissue cultured liners of 'Cherri-Cherri' performed as well as or better than any seed begonia evaluated by Small's and better than any vegetatively propagated begonia. There were no significant differences in size or shape of the various finished liners or of the plants initially placed in the landscape. However, what made begonia 'Cherri-Cherri' unique among the wax begonias trialed were the bright, fully double, rosy red, sterile flowers nicely displayed on compact, well-branched plants that were very tolerant of high light, heat, and humidity.

Liner production size to be offered for sale depends on price structure and quality of product. In general the smallest size offered, while still producing a quality plant, is the most desirable for the producer and grower. Tissue cultured plantlets of begonia 'Cherri-Cherri' were grown and evaluated in 200 count plug trays, 1" plugs and, 2" plugs. The 1" size plug product was chosen for production because it offered a quality plant at an economical price for production of 4" landscape material.

Product Promotion

Promotion of a new product encompasses many areas. Sometimes the name of the developer is sufficient to promote a new product when that person or company is a recognized leader in new and improved products. Since neither Earl J. Small Growers, Inc. nor the Citrus and Environmental Horticulture Department at FSC are closely associated with introduction of new bedding plant cultivars, this promotion possibility alone is probably not sufficient. Understandably, proper promotion of any new plant cultivars is essential if the introduction of the product is to be successful. In this instance, the method of propagation can be highlighted for this crop, since many growers have a favorable opinion of plants produced in tissue culture. Competitive costs and quality of liners for economical production are also stressed to growers.

Intermediate and end customers must be made aware of where, when, and why to use the product. Product characteristics are conveyed to growers and consumers by informational pamphlets (available from Small's), book and magazine articles, display gardens, ('Cherri-Cherri' will be on display at the Edith Haupt Roof Garden of the Smithsonian Institution, Washington, DC, summer 1998) advertisements in trade journals, displays at trade shows, promotions at garden centers, and *gratis* delivery of samples to growers and plant brokers. To all the customers, begonia 'Cherri-Cherri' should be promoted as a bright rosy red, double-flowered, fibrous-rooted wax begonia for use in all sorts of landscapes. 'Cherri-Cherri'

offers excellent garden performance throughout the year in Florida and throughout the growing season in more northern climates.

Literature Cited

- Behe, B. K. and C. M. Walker. 1994. 1994 season sales summary. Professional Plant Growers Assoc. 25(12).
 Howe, T. K. and W. E. Waters. 1995. Evaluation of fibrous-rooted begonia cultivars for the landscape in west-central Florida. Proc. Fla. State Hort. Soc. 108:396-402.
 L. H. Bailey Hortorium. 1976. Hortus third. MacMillan Publishing, NY.

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ROOTS OF A DIFFERENT KIND—HOW VARIOUS FOLIAGE PLANTS ENTERED THE UNITED STATES TRADE

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Abstract. Tropical foliage production in Florida is approximately 326 million dollars per year, with domestic production exceeding \$500 million. Most of that production is confined to about 40 plant genera, with numerous species and cultivars. How these various foliage varieties were introduced into the United States market is not well documented. Information on the origins of various foliage varieties has been traced and compiled, and is presented here on a plant by plant basis.

Introduction

Tropical foliage plants were produced commercially in the United States on a limited basis as early as the late 1700's. The industry took off rather slowly however, as Victorian homes in the northeast and midwest were not well lit nor well heated in winter. The advent of good quality, inexpensive glass for windows and more efficient heating systems gave the early American horticulturist a better opportunity to maintain foliage plants in the home.

The industry of course expanded, and house plants were fairly common in the United States by the 1880's. Discovery of new plant varieties and growing techniques have steadily helped the foliage industry to grow. Most foliage growers today have very little knowledge of how the foliage varieties they are producing were introduced and popularized in this country. An attempt has been made by the author to establish and document the origins of foliage plants in the U.S. trade. The information was compiled from written references, as well as numerous interviews with veterans and pioneers in the U.S. foliage industry. It should be noted that recollections of historical events can vary somewhat. Further expansion and documentation on this topic is anticipated in the future.

Plant Varieties

African Violets

Baron Von St. Paul of Germany was walking along a river bank in Tanzania in 1926, when he discovered these delicate, beautiful flowering plants. He sent seeds back to Germany. The plant was ultimately named *Saintpaulia ionantha*, after the Baron. African Violets spread quickly from there, and by the 1960's African Violets were very popular in the U.S. Major breeding efforts were conducted by Arnold Fischer of Hannover, Germany, who developed the Ballet series of violets.

Aglaonemas

Commonly called Chinese Evergreens, Aglaonemas were first introduced via the Missouri Botanical Gardens in the 1930's. The importation was helped by cooperation with the U.S. Embassy in Shanghai. Silver Queen, the most popular variety, is a cross between *A. curtisii* and *A. treubii*, first made by Nat DeLeon of Miami in the early 1960's. Silver Queen was intensively propagated and popularized by Bob McColley of Bamboo Nurseries in Orlando. *Aglaonema* Emerald Beauty (Maria) was found growing wild on Palauan Island in the Philippines. The Variety Abidjan was discovered on the Ivory Coast by Jim Vosters in 1974.

Anthuriums

The most popular *Anthurium* for potted plants, Lady Jane, was first observed by Ray Oglesby of Hollywood, Florida in 1978. Nurseryman Bob Wilson had three small plants of what would become Lady Jane in a corner of his greenhouse. One of the plants went to Fairchild Gardens, one went to a collector, and Ray Oglesby got one of the plants. Oglesby put the plant in tissue culture, and today it is one of the major foliage plants in the trade.