

## Ornamentals Find Their Niche

Today, poinsettias are a symbol of the winter holidays in this country. But there was a time when they were considered to be niche plants.

The poinsettia's popularity is due to the efforts of scientists with the U.S. National Arboretum. They conducted research on the plant's color development as well as its light and temperature needs. They also devised growing methods that enabled mass cultivation. Now, more than 80 million are sold in the United States every year, making poinsettias the country's top-selling potted flowering plant.

The poinsettia is one plant that benefited from the Agricultural Research Service's ornamental breeding efforts, but it's hardly alone. For years, ARS researchers have promoted ornamentals by creating new, desirable cultivars and emphasizing valuable traits in existing ones.

Gardening is a popular American pastime, and nursery, landscape, and floral plant sales are thriving as a result. In 2005, these plants had a wholesale value of about \$16 billion, making them a vital part of the U.S. agricultural industry—and the American home.

Many plants that are currently considered industry standards owe their success to ARS research that improved their physical characteristics or made them easier to obtain.

Consider the New Guinea impatiens. Scientists at the Henry A. Wallace Beltsville [Maryland] Agricultural Research Center (BARC) increased the plant's size and blooming capacity, improving its attractiveness and marketability.

Plants once considered too difficult to grow or market successfully have blossomed under ARS ornamental plant research, eventually coming to play important roles in American culture.

While many plant scientists admire the environmental benefits and potential medical applications of horticultural plants, most people buy ornamental plants simply to beautify their homes. But consumers are getting more demanding.

Americans want their ornamentals to be more than simply eye-catching, and ARS researchers have responded to that. Over the years, our researchers have identified which qualities U.S. consumers want—such as beauty, hardiness, vitality, consistency, and availability—and developed new cultivars and production methods to meet those demands.

The Don Egolf redbud and Betsy Ross lilac, both bred at the U.S. National Arboretum, for example, make attractive additions to any home garden, and they both boast a laundry list of other qualities. The redbud was bred to be compact, easily propagated, pest-resistant, and extremely tolerant of *Botryosphaeria dothidia* canker, and the lilac was bred to be tolerant both of warm climates and of powdery mildew.

Arboretum research has also contributed to the salvation of American elm trees. The devastating Dutch elm disease destroyed around 77 million American elms between the 1930s and the 1980s. In response, researchers tested thousands of trees, identified disease-tolerant specimens, collected germplasm from them, and bred a new line of tolerant trees. In 1995, ARS released two new resistant elms: Valley Forge and New Harmony.

ARS researchers are still developing niche plants to provide small growers with new products. The arboretum's Floral and Nursery Plants Research Unit just released two new lilac varieties—Old Glory and Declaration—last spring, continuing their tradition of excellence in introducing new ARS varieties to the horticultural industry. These lilacs are well suited for landscaping, either as subtle background plantings in a border or as mass plantings in larger areas.

With beauty, strength, and a fiery flavor, the Black Pearl (p. 4) is another example. This culinary ornamental pepper is one of several new cultivars developed at BARC. Honored as a 2006 All-America Selections winner, the plant is robust and sturdy, thriving in a variety of environments and resisting many environmental stresses. In bloom, its dramatic black foliage captures the eye, and in cooking, its spicy flavor startles the palate.

ARS's breeding program provides an invaluable service to the ornamental plant industry and to amateur gardeners throughout the country. Unlike other agricultural producers, most ornamental companies are relatively small and unable to assume the risk involved in breeding new cultivars. So they depend on university and government breeding programs to do the required benchwork.

During the past decade, methods for monitoring and testing genetic resources have improved significantly, making it easier for researchers and plant breeders to assess parent plants' characteristics. By using new and traditional gene-enhancing tools, ARS researchers have developed many aesthetically pleasing ornamental plants with resistance to pests, diseases, and environmental stresses.

By supporting research on breeding new ornamental crops and improving the characteristics of existing plants, ARS can help expand these markets and encourage growers to diversify their income sources—providing American consumers with a growing selection of quality plants to beautify their homes in the bargain.

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