POINSETTIAS

Beltsville Agricultural Research Center
Impact on the Poinsettia Industry

The poinsettia plants that are purchased today are a far cry from the wild, 8-plus feet tall plants that originated in Mexico. Research performed over the past seventy years at Beltsville has significantly influenced this $200+ million wholesale industry. Poinsettias are the number one potted plant in market value.

1920s - Drs. Wightman Gardner and Harry Allard discovered that poinsettias require longer nights to induce flowering. When a poinsettia flowers, the upper leaves (the bracts) turn bright red and the center of the plant forms small yellow flowers.

1960s - Dr. H. Marc Cathey began studies on the lighting requirements of poinsettia as well as the use of growth regulators for improving commercial production of poinsettias. Dr. Cathey's research resulted in a production protocol that not only guaranteed when the poinsettia would "flower" but also a plant with a compact growth form.

1970s - Dr. Robert Stewart developed poinsettia breeding lines with significantly improved keeping quality. Before this research, poinsettia leaves would fall off the plant shortly after they were developed. Dr. Stewart's research resulted in the development of cultivars (i.e., 'Ruff and Ready') in which the leaves and bracts remained on the plant for the entire holiday season. 'Ruff and Ready' is still used as a parent for new poinsettia cultivars on the market today.

1990s - Dr. Ing-Ming Lee discovered that free-branching, dwarfed poinsettia, which produce the brilliant-red bracts favored by consumers, is due to infestation by a phytoplasma. Phytoplasmas are minute organisms which are usually disease causing in plants. But in this case they induce the growth form which is highly prized in poinsettias. This finding has also led the way to produce virus-free plants.

The new poinsettia colors like pinks and yellows, and spotted types are another outgrowth of the work done by Dr. Steward on chimeras. Chimeras are plants with tissues that are genetically different than their parents. The basic science done by Dr. Steward has enabled commercial breeders to produce new color variations.

For more information, contact the Floral & Nursery Plants Research Unit at John.Hammond@ars.usda.gov