

CREATING NEW FLOWER COLORS IN WINTER-HARDY HIBISCUS

by Dr. Dariusz Malinowski
Professor, Texas A&M AgriLife Research

Winter-hardy hibiscus (*H. moscheutos*) is a highly sought ornamental plant with tropical looking flowers that may reach a diameter of 12 inches.

In contrast to its distant relative, the tropical hibiscus (*H. rosa-sinensis*), winter-hardy hibiscus can be grown outside in zones 4 through 9 all year long. The stems will die with the first frost, but the rootstock will survive through winter and re-sprout again in spring. Commercially available cultivars have a limited choice of flower colors (white, pink, and red) and flower shapes. In the past few years, there has been increasing demand by gardeners for new cultivars with colorful flowers.

To meet these expectations, we initiated a winter-hardy hibiscus breeding project at Texas AgriLife Research (Dariusz Malinowski and William Pinchak) in collaboration with Texas Foundation Seed Service (Steve Brown) in 2010. Our goal was to create new flower pigments by maximizing genetic variability in this species. By multiple cycles of hybridization among several winter-hardy hibiscus species and induced mutations, we have developed a number of hybrids with magenta, blue, maroon, salmon, all shades of red and pink, and dual-colored flowers, and a range of new, interesting flower shapes.

Some of the colors, like blue and salmon, have not been previously reported in this species. To date (2015), we have disclosed over 180 unique hybrids to the TAMU Commercialization Office and about 60 of them are being evaluated by commercial partners in the USA and Europe. The first set of about 10 new cultivars should be available to the public in 2018.

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In contrast to gardeners who are mostly interested in new flower colors and shapes, commercial plant producers require us to breed winter-hardy hibiscus plants with certain growth characteristics, i.e., small, compact plants with pre-determined architecture, leaf shapes and colors, prolific bloomers, and resistance to diseases (i.e., root rot).

Meeting the requirements of both the garden enthusiasts and commercial producers often delays introduction of new cultivars on the market. The next frontier in our breeding program is to develop winter-hardy hibiscus hybrids with yellow and orange flowers.

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Contact Dariusz Malinowski at dmalinow@ag.tamu.edu



#9 -- 'Robert Brown' (2012) is the first example of a chimera in winter-hardy hibiscus, where parental genomes have not fused completely and work quite independently from each other in determining flower color. On the same plant we can see flowers like the one pictured here, but also flowers with one or two petals white and the rest coral or a total opposite color combination with white petals and coral stripes. The pattern of the stripes is unique to each new flower on the plant.

#10 -- (11574-1) Always a hybridizing conundrum: incredible colors and flower size (12") but a tendency to prostrate growth challenging for commercial growers.

#11 -- (15173 GR). This 2015-achieved salmon or light coral color was the second break-through (after the blue-colored hibiscuses) achieved by Dr. Malinowski and his team in the winter-hardy hibiscus arena. This line will be used to develop orange-colored flowers.

#12 -- (15753-3) This pink-salmon line has potential to develop an orange winter-hardy hibiscus.

101 Sherbrook Circle • Conroe, Texas 77385-7750
(936) 321-6990 Metro • (936) 273-1200 Conroe • Fax (936) 273-1655