

ORNAMENTALS

Introduction

UF/IFAS is home to the largest university-based ornamental landscape plant breeding program in the nation. Recent emphasis has been placed on developing new varieties of caladium, gerbera, coleus, lantana, and ruellia. UF/IFAS plant breeders bring an array of genetic improvement approaches to the table to improve plant performance, keep Florida competitive, and enhance profitability in both domestic and global markets. The annual sales value of lantana in Florida alone can be more than \$40 million, and the Florida caladium tuber production industry supplies more than 95 percent of the world's caladium tubers. UF/IFAS coleus cultivars have been among the nation's top performers in field trials.

From the Beginning

Breeding programs for caladium, gerbera, coleus, lantana, and ruellia were created in response to market changes and the need to overcome challenges in ornamental breeding to keep the market for these plants robust and, in some cases, feasible.

The caladium breeding program began in 1976 to develop new cultivars with bright foliage colors, multiple leaves, good viability in container production, robust performance in the landscape, and quality tubers.

The gerbera daisy breeding program began in 2000 in response to powdery mildew, the most common and most destructive disease in gerbera. The program also emphasizes plant vigor, continuous flowering in tropical and subtropical conditions, large flower size, and bright flower color.

The coleus breeding program was started in 2003 to produce colorful new annual plants that could withstand North Florida's harsh conditions. Growers were more interested in vegetatively propagated annual bedding plants than those grown from seed because they produce higher-quality plants in less time. In response to this industry change, breeders chose coleus because of its short crop cycle, easy propagation, vigor, and large variety of colors, shapes, and sizes.

The lantana breeding program was initiated in 2004 to produce sterile, non-invasive varieties of the popular plant with good growth habits for use in nursery production and the landscape.

The ruellia breeding program began in 2007 with a goal of creating new sterile cultivars for the landscape plant industry. The plant, commonly known as Mexican petunia, is popular among gardeners in the southern United States because of its low maintenance requirements and prolific flowering, but was found to be invasive. UF/IFAS plant breeders went to work creating sterile varieties that perform well in the landscape.

Today and Tomorrow

Solving the problem of invasiveness has been a unique focus of the ornamental breeding program. The nursery and landscape industry is considered to be a significant contributor to the spread of invasive plants. Making it possible for producers and gardeners to grow sterile varieties of popular but invasive nursery and landscape plants is a boon to the industry.

Controlled hybridization between tetraploids and diploids, progeny ploidy analysis, and multiple rounds of screening led to the release of two sterile lantana varieties, 'UF-T3' (USPPAF) and 'UF-T4' (USPPAF). These varieties and more than a dozen sterile breeding lines are currently being field tested by industry. A combination of polyploidization and hybridization techniques was used to create ruellia cultivars 'Mayan Purple' (USPPAF) and 'Mayan White' (USPPAF), which are sterile varieties that flower profusely from May to October, die down in winter in central and north Florida, and grow back the following year.

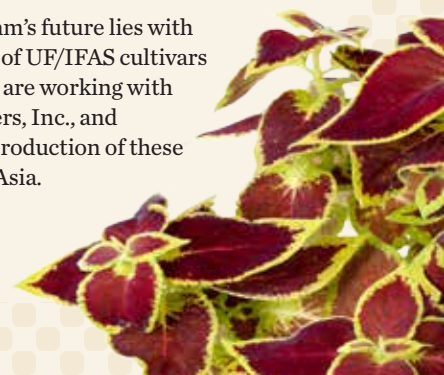
The coleus breeding program is recognized for producing cultivars with great color and long-lasting vigor. Coleus cultivars are produced through recurrent mass selection to maintain genetic variability for hundreds of different traits and continuously improve quality. 'Redhead' (USPP21,585) and 'Wasabi' (USPPAF) are recognized as industry standards.

A number of caladium varieties are also widely accepted in industry, including 'Florida Moonlight' (USPP14,565), 'Tapestry' (USPPAF), and 'Cherry Tart' (USPPAF). Current emphasis is being placed on breeding for disease resistance because of the ban on the use of methyl bromide for disease, nematode, and weed control.

The gerbera program has released several varieties for commercial production under the brand Funtastic™. Funtastic™ 'Canary' (USPP23,448), Funtastic™ 'Fire Orange' (USPP23,346), and Funtastic™ 'Mango' (USPP23,433) have performed well in trials and have shown excellent heat tolerance.

Many of the plants in the ornamental plant breeding program are introduced from other parts of the world, many of their traits are still poorly understood, and their values remain to be recognized. UF/IFAS plant breeders plan to expand their germplasm collection and gain a better understanding of important horticultural traits, using somaclonal variation, artificial mutagenesis, somatic hybridization, and/or molecular markers to complement their technical approaches for developing new varieties.

In established crops, the program's future lies with the expansion of crop production of UF/IFAS cultivars outside of Florida. Plant breeders are working with Florida Foundation Seed Producers, Inc., and licensees to expand commercial production of these cultivars in Canada, Europe, and Asia.



Ornamental Varieties Released from 2002

Release Date	Cultivar
Caladium	
2/21/02	Florida Moonlight (USPP14,565)
10/18/05	Garden White (USPP20,448)
10/18/05	Summer Rose (USPP20,446)
10/18/05	Firecracker Red (USPP20,461)
7/23/07	Cranberry Star (USPP20,792)
5/28/08	White Butterfly 'UF340' (USPP21,347)
5/28/08	Dr. Brent 'UF404' (USPPAF)
5/28/08	Tricolor Butterfly 'UF331' (USPP22,055)
11/12/08	Berry Patch '75-14' (USPP21,089)
10/5/10	Royal Flush 'UF-18-49' (USPPAF)
10/5/10	Strawberry Star 'UF-85-5' (USPPAF)
10/5/10	Summer Pink 'UF-48-5' (USPPAF)
10/6/10	Tapestry 'UF-172' (USPPAF)
4/19/11	Cherry Tart 'UF 44-4' (USPPAF)

Gerbera	
10/18/05	UF Enduring Burgundy
10/18/05	UF Enduring White
10/18/05	UF Multi-flora Peach
10/18/05	UF Multi-flora Pink Frost
1/5/10	Funtastic™ Fire Orange 'UFGE 4141' (USPP23,346)
1/5/10	Funtastic™ White 'UFGE 7014' (USPP23,373)
1/5/10	Funtastic™ Blush 'UFGE 7015' (USPP23,488)
1/5/10	Funtastic™ Yellow 'UFGE 7023' (USPPAF)
1/5/10	Funtastic™ Canary 'UFGE 7032' (USPP23,448)
1/5/10	Funtastic™ Mango 'UFGE 7034' (USPP23,433)

Lantana	
10/14/11	'UF-T3' (USPPAF)
10/14/11	'UF-T4' (USPPAF)

Coleus	
1/26/06	Royal Glissade® 'UF03-8-10'
1/26/06	Twist and Twirl® 'UF03-6-1a'
1/26/06	'UF 04-51-42'
1/26/06	'UF 04-51-41'
1/26/06	'UF 04-51-33'
1/26/06	'UF 04-40-125'

Release Date	Cultivar
1/26/06	'UF 03-6-1b'
1/26/06	'UF03-6-01c'
1/26/06	'UF03-8-24'
1/26/06	'UF04-5-7'
1/26/06	'UF04-18-3'
1/26/06	UF04-36-33
1/26/06	'UF04-40-26'
7/20/06	Electric Lime® 'UF 04-33-5'
2/15/07	Frippy Milly 'UF04-47-64'
2/15/07	Splish Splash® 'UF04-69-01'
2/15/07	Pineapple Splash® 'UF06-02-78'
2/15/07	Velvet Mocha® 'UF06-4-18'
2/15/07	'UF06-04-140'
2/15/07	Lemon Twist™ 'UF06-21-30'
2/15/07	Big Red Judy® 'UF06-40-01'
4/28/08	Limon Blush 'UF06-21-35'
8/6/08	Redhead 'UF06-4-6' (USPP21,585)
8/6/08	Trusty Rusty 'UF 06-4-19' (USPP21,602)
2/10/09	Sunset Strip™ 'UF06-12-19'
2/10/09	Radical Wonder™ 'UF06-13-65'
2/10/09	Snazzy™ 'UF06-13-132'
2/10/09	'UF08-29-7'
2/10/09	'UF08-34-3'
2/10/09	'UF08-46-20'
2/10/09	Radiant Panache™ 'UF08-46-24'
2/10/09	'UF08-4-6'
1/5/10	Rebel Rouser™ 'UF07-10-10'
1/5/10	Dirty Martini/Spit Fire™ 'UF07-24-5'
1/5/10	Lancelot Cherry Cordial™ 'UF08-19-12'
1/5/10	Alligator Tears™ 'UF08-43-23'
2/9/11	Wasabi 'UF08-4-3' (USPPAF)
2/9/11	Sultana 'UF08-17-4' (USPPAF)
2/9/11	Lemon Twang™ 'UF09-6-1'
2/9/11	Velour Magic™ 'UF09-27-1'
2/9/11	Coco Mint™ 'UF09-8-57'
2/9/11	Keystone Kopper™ 'UF09-8-87'
2/9/11	Burgundy Lace™ 'UF09-18-1'
1/10/12	Marooned™ 'UF10-08-01'
1/10/12	Spumoni™ 'UF10-61-13'
1/10/12	Neptune's Net™ 'UF10-81-01'

Release Date	Cultivar
Lisianthus	
11/30/04	Florida Blue Frill
11/30/04	Florida Pink Frill
11/30/04	Maurine® Dawn
10/18/05	UF Savanna Blue
10/18/05	UF Savanna Blue Frost
10/18/05	UF Savanna Blue Rim
10/18/05	UF Double Joy Blue
10/18/05	UF Double Joy Blue Rim
10/18/05	UF Double Joy Pink
10/18/05	UF Double Joy Pink Rim
10/18/05	UF Double Joy White

Release Date	Cultivar
10/18/05	UF Savanna Pink
10/18/05	UF Savanna Pink Frost
10/18/05	UF Savanna Pink Rim
10/18/05	UF Savanna Silver
10/18/05	UF Savanna White

Hairawn Muhly	
4/19/12	Purple Haze

Ruellia	
10/4/11	Mayan Purple 'R10-102' (USPPAF)
10/4/11	Mayan White 'R10-108' (USPPAF)



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