

MSU *Plant Trials* Report

By Art Cameron



Carex 'Toffee Twist' and grasses

As the new annual plant trial director at Michigan State University, I was in rapid-learning mode during the 2009 growing season. But I was looking forward to watching, up close and personal, the performance and ornamental character of new annual introductions. In particular, I was interested in learning which annuals were both tough and great performers, considering this has been a focus of mine through the years with herbaceous perennials and ornamental grasses. Rating plants every few weeks all summer long, I found plenty of interesting annuals well worth further consideration. And some were even tough enough to make it into my own home garden!

Plant Culture and Weather

In 2009, all our annuals were transplanted into ground beds between May 19 and June 1. Soil temperatures in mid-Michigan typically rise above 60° F in late May. Plants were spaced on 8- to 12-inch centers. Every other week, from June 25 to September 15, Chris Noffsinger (2009 trial garden manager), Ashley Whalon (summer intern, sponsored by Michigan Greenhouse Growers) and I rated the plants as a group to reduce bias. At the alternative rating periods, Ashley rated the plants. Plants were subjectively rated based on vigor and ornamental performance. Top performers received a 5 rating; plants with passable performance received a rating of 3; and underperforming varieties received a 2 rating.

In 2009, we tested nearly 400 annuals, about two-thirds of which were grown in the ground. (The other third were grown in containers.) In general, plants grown in containers outperformed the same plants grown in the ground, most likely because they were better watered and fertilized than those in the ground. Ground beds were hand watered as needed and fertigated with 19-4-23 (250-ppm nitrogen) water-soluble fertilizer every two or three weeks. No treatments were given this year for disease control, and there was more root-disease pressure in ground beds.

The Toughest Annuals at MSU

Performance of plants grown in the ground seemed to give us a better indication of "toughness" because they received less irrigation and fertilization in our trials. Still, under these conditions, several plants we tested received ratings of 5 on nearly every rating date and averaged 4.7 or better (see Table 1). Each of these 24 plants looked great to the judges from less than a month after planting to mid-September. I think it's fair to say that many home gardeners are looking for plants that provide interesting ornamental characters for most of the season without being too fussy in a garden setting.

Texture and Form

Perhaps it is not surprising that many of our top long-term summer performers have ornamental leaves, texture and form.

Starting at the top of the list, alphabetically, is carex **'Toffee Twist'**. In mass, this plant sets up a fine spray of texture that combines well with color or other textural plants. I've grown 'Toffee Twist' for years in my home garden alongside herbaceous perennials and have found that it is perfectly tough and can often overwinter in mid-Michigan. It is typically rated as hardy to USDA Zone 6. Carex are native to open areas in New Zealand, thrive with full sun and well-drained soils, and tolerate a fair amount of drought stress.

Many colocasia have performed well in Michigan through the years and can provide a powerful and bold tropical element to a garden. Some can grow to more than 6 feet tall by the end of the season. Somewhat surprising to many, they do not need to be grown in water, and in fact can be fairly drought tolerant. **'Heart of the Jungle'** was the only cultivar submitted to our trials this past season and it put on a great show, particularly when paired with cyperus 'King Tut'. Cyperus, like colocasia, do not need constant moisture and can easily be grown as bedding plants in our climate. Several other colocasias have done well here in the past, including 'Black Magic', 'Violet Stem', 'Tea Cup' and 'Coffee Cup'. New cultivars



Colocasia 'Heart of the Jungle'

Top Tough Varieties

Genus	Cultivar or variety	Company
<i>Carex</i> sp.	'Toffee Twist'	Proven Winners
<i>Colocasia</i>	'Heart of the Jungle'	Proven Winners
<i>Coprosma</i>	'Taupat Gold'	Plug Connection
<i>Cyperus papyrus</i>	'Baby Tut'	Proven Winners
<i>Cyperus</i> sp.	'King Tut'	Proven Winners
<i>Euphorbia</i>	'Breathless White'	Ball FloraPlant
<i>Euphorbia</i>	'Diamond Frost'	Proven Winners
<i>Ipomoea</i>	'Bright Ideas Lime'	Oro Farms
<i>Ipomoea</i>	'Bright Ideas Palmate Black'	Oro Farms
<i>Ipomoea</i>	'Chillin' Blackberry Heart'	Proven Winners
<i>Ipomoea</i>	'Chillin' Blackberry Star'	Proven Winners
<i>Ipomoea</i>	'Illusion Midnight Lace'	Proven Winners
<i>Lobularia</i>	'Snow Princess'	Proven Winners
<i>Ocimum basilicum</i> (basil)	'Aristotle'	Floranova
<i>Petunia</i>	'Supertunia Vista Bubblegum'	Proven Winners
<i>Petunia</i>	'Supertunia Vista Silverberry'	Proven Winners
<i>Plectranthus</i>	'Silver Crest'	PanAmerican Seed
<i>Sanvitalia</i>	'Garden Leader Gold'	Grimes Horticulture
<i>Solenostemon</i> (coleus)	'Kingswood Torch'	Proven Winners
<i>Solenostemon</i>	'Royal Glissade'	Proven Winners
<i>Solenostemon</i>	'Henna'	Ball FloraPlant
<i>Solenostemon</i>	'Red Head'	Ball FloraPlant
<i>Solenostemon</i>	'Trusty Rusty'	Ball FloraPlant
<i>Zinnia</i>	'Profusion Yellow'	Sakata Seed

Table 1. Here are the top-performing annuals grown in ground beds in the 2009 Michigan State University Trial Gardens. All plants received at least a 4.7 rating out of 5. Plants were numerically rated based on performance (vigor, size and ornamental impact) every two weeks during the summer from June 25 to Sept. 15

bred in Hawaii, such as 'Hilo Bay', have been selected for more of a clumping form that is less invasive in tropical parts of the world. 'Heart of the Jungle' aggressively formed runners, but these are not a problem in a northern garden.

Both *Cyperus* 'King Tut' and 'Little Tut' are great for garden texture. The straight species of each of these selections have long been a staple in southern gardens, and it's great to see these more widely distributed to northern gardeners. 'King Tut' was easily 8 feet tall by the end of the season and there were no noticeable effects of short periods of drought stress.

All the *ipomoea* we grew this year performed very well. It's really more a matter of personal taste choosing among the heart-shaped purple, dissected lime, or round, copper leaves! They all grew well in the full sun with limited water. The two **Bright Ideas** introductions from Oro Farms were quite impressive, as was 'Chillin' Blackberry Heart'. I've been wondering when someone will breed one that we can harvest and eat at the end of the season — added value for the gardener!

Speaking of edible, we found that 'Aristotle' basil, a Greek-style, small-leafed form from Floranova,

Basil 'Aristotle'


performed well the entire summer. Home gardeners can repeatedly harvest the small leaves for spicing up their meals, and the plant will grow back quickly. Perhaps a bit more bitter than a Genovese cultivar, this is a nice edible selection from Floranova's Vegetalis program.

Coleus is back! But it's returned with a name change: *Solenostemon scutellarioides*. (What ever happened to *Coleus blumei*? I'm sure someone has a reason for changing the name, but I doubt I'll ever completely understand.) Regardless of the Latin name, the new cultivars are bold, vigorous and sun tolerant! Many have been selected to withstand the full elements of heat and humidity. Several cultivars made it to the top of our list this year: 'Henna', 'Trusty Rusty', 'Red Head', 'ColorBlaze Kingswood Torch' and 'ColorBlaze Royal Glissade' were essentially perfect all season. They were all at least 4 feet tall by September, and with absolutely no detectable faults. Most all the other coleus varieties we trialed fell into the "Best of the Rest" category, including several seed-propagated selections.

One other new plant that provided interesting foliage color and tough character was *coprosma* 'Taupat Gold'. Noticeably more vigorous than some of the other new *coprosma* cultivars, it was definitely eye catching in the ground and in containers last season.

Coleus combination

Coprosma 'Taupat Gold'

Where's the Color?

It was hard to find tough plants with bright splashy color displays from late Juen through the entire season. Many more would have made the grade if we had started rating in mid-July. With the longer season, the best of the best for our trials included *euphorbia* 'Diamond Frost' and 'Breathless White'. 'Diamond Frost' was released in 2005 and has received any number of accolades since then. This plant really deserves the praise. It can survive heat and drought and requires only low fertility. It epitomizes a tough flowering plant. 'Breathless Blush' is a relative newcomer but seems to possess much of the positive features of 'Diamond Frost'. It filled in fast and provided nonstop color and texture all season long.

One somewhat surprising addition to our best and tough annual list is *zinnia* 'Profusion Yellow'. This remarkable little *zinnia* produced nonstop from beginning

Ipomoea 'Chillin' Blackberry Heart'

Coleus 'Henna'

Coleus 'Trusty Rusty'


(Photo: Ashley Whalon)

Zinnia 'Profusion Yellow'


(Photo: Ashley Whalon)

research

to end. It had a great habit that complements its showy flowers. It never collapsed or showed signs of mildew in our trials (all the other

zinnias in adjacent beds were completely covered with mildew by the end of the season). 'Profusion Yellow' held up through it all.

Great Petunias in Ground Beds

Cultivar	Company	Rating					
		6/25	7/8	7/27	8/12	8/27	9/15
'Suncatcher Red'	Ball FloraPlant	3	3	5	4	5	4
'Supertunia Vista Bubblegum'	Proven Winners	4	5	5	5	5	4
'Supertunia Vista Silverberry'	Proven Winners	5	5	5	5	5	5
'Suncatcher Burgundy'	Ball FloraPlant	3	3	5	4	4	5
'Ray Purple'	Danziger	3	3	5	4	4	5

Euphorbia 'Hip Hop' (PPAF)

In addition to a very low royalty rate, the Euphorbia 'Hip Hop' has non-stop blooming of pure white flowers atop dark green foliage, which makes 'Hip Hop' a perfect accent to any poinsettia variety, particularly GroLink's own Velocity™ series.

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Petunias

We tested more than 50 petunia varieties in the ground in our 2009 trials. Many were excellent in containers, only two made it to the top of our list when grown in the ground. As the season progressed, several petunias in our trials began to deteriorate in our beds. Unfortunately, after testing, our plant diagnostic center identified Thielaviopsis (black root rot) in these beds. While we were disappointed to find this pathogen, we noticed that two petunias, 'Vista Silverberry' and 'Vista Bubblegum', held up the entire season even while petunias on each side of them succumbed to disease. While we have no specific evidence that black root rot caused all of the disease problems we observed — or whether the Vista cultivars are truly resistant — it seemed a noteworthy observation and may be of value for future testing and breeding.

'Supertunia Vista Silverberry'



(Photo: Ashley Whalon)

'Supertunia Vista Bubblegum'



Environmental Benefits

Many landscape managers and gardeners are looking for more environmentally friendly plants to

Other surprises in the garden



grow in their garden. All would love to use less fertilizer, water and pesticides. When this is the objective, tough annuals fit the bill, especially when combined with tough herbaceous perennials and ornamental grasses. We hope to continue our quest to identify and select annuals that can survive and thrive under tough conditions.

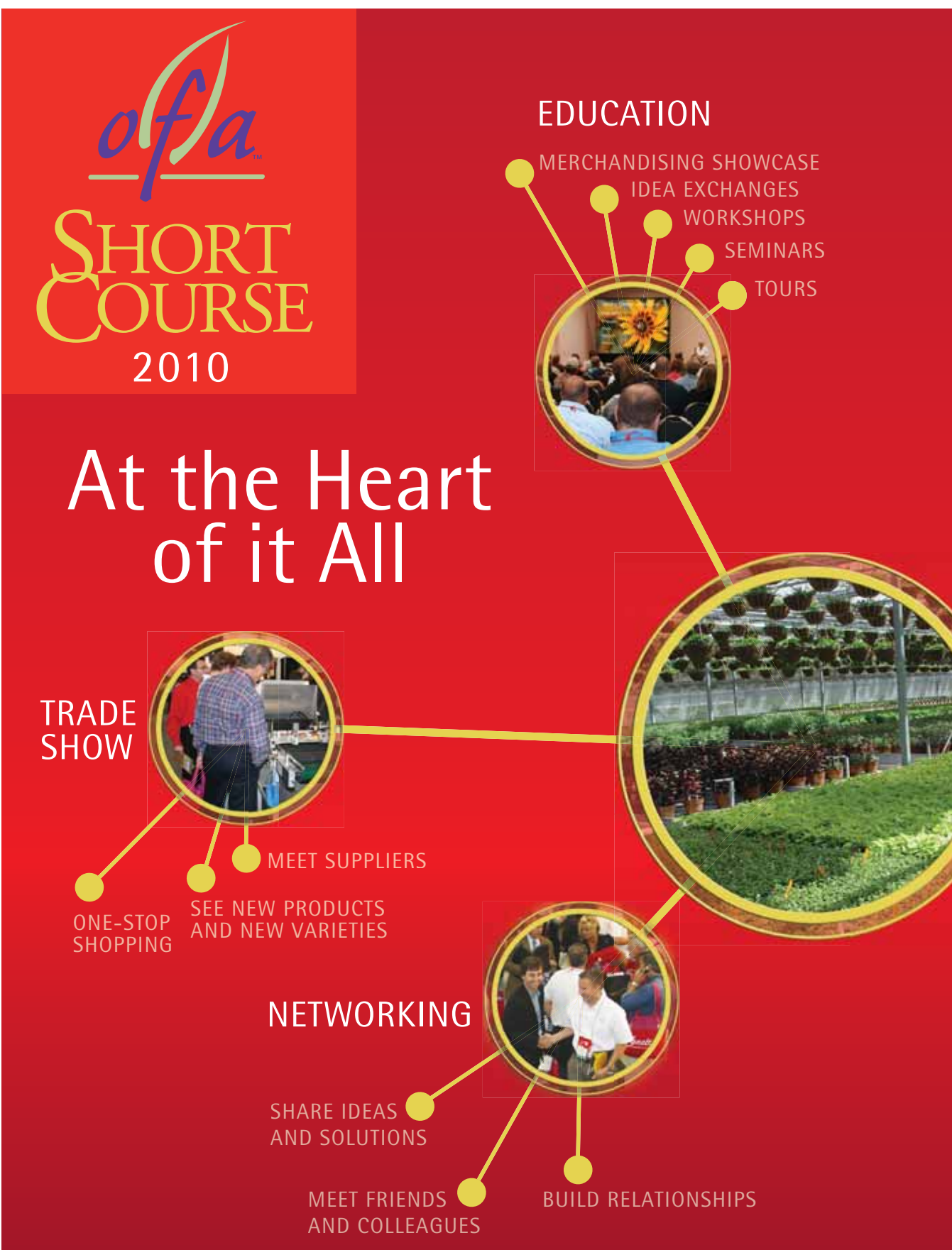
Tough annuals can be used in marketing programs: At the 2010 California Spring Trials, EuroAmerican had a section of plants under a program named "Ecovation." These plants were marketed as drought tolerant and tough, though the program focused largely on the California climate. It will be great to see this extended to rest of the country. The move toward more sustainable landscaping could provide an impetus to expand breeding priorities.

I'd like to encourage breeders will to take a closer look at tough annuals such as *Verbena bonariensis* or *Datura* spp. that grow in gardens with such little care! **GPN**

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