



National Ornamental Grass Trials



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Abstract:

Many ornamental grasses require low water and fertilizer inputs and minimal maintenance, making them complementary plants in landscape settings. The National Ornamental Grass Trial, coordinated through the University of Minnesota, began in 2012. Collaborators are conducting trials on cultivars of native ornamental grasses evaluating landscape characteristics and sustainability features in varied growing conditions throughout the United States. Sixteen regional sites in 10 states including Vermont, North Carolina, Florida (4 sites), Minnesota, Pennsylvania, Ohio, Nebraska, Texas (4 sites), Colorado, and Oregon are evaluating 22 cultivars of *Panicum amarum*, *Panicum virgatum*, and *Schizachyrium scoparium*. Four plants of each cultivar were established in Summer 2012 at all collaborator sites. Data collection includes plant size, overall growth habit rating, floral impact, foliage color, fall color, self-seeding, winter survivability, and pest problems. Reports from collaborators indicate that variations in survival existed across sites and hardiness zones. Cultivar quality and performance including which plants were top performers also differed between trial sites. The trial collaborators will continue to post information and data on a national website (www.grasstrials.com) for the next two years (2014 and 2015). This pertinent and timely information will enable growers, retailers and consumers to make more informed decisions when choosing grasses for sustainable landscape settings.

Materials and Methods

In 2012, four plants of each of the 22 cultivars (Table A) were planted at 17 collaborator sites (Table B). Cultivars were lined out or placed at random three to four feet apart in full sun. Study parameters dictate no fertilizer and minimal supplemental inputs of water, enough to maintain acceptable plant appearance. Mulches and/or herbicides are used to control weeds. In early spring, plants are cutback to ground. In 2013, 2014 and 2015, collaborators will measure specific seasonal growth parameters (winter survival, date of first spring growth, self-seeding) as well as size measurements (Table C) at end of growing season. Trial information will be posted on National Ornamental Grass Trials blog, www.grasstrials.com

Table A: Trial cultivars:

Panicum amarum - Bitter Switchgrass
 'Dewey Blue'
Panicum virgatum - Switchgrass
 'Badlands'
 'Cheyenne Sky'
 'Cloud 9'
 'Dallas Blues'
 'Dust Devil'
 'Heavy Metal'
 'Hot Rod'
 'Northwind'
 'Prairie Fire'
 'Prairie Sky'
 'Rehbraun'
 'Rotstrahlbusch'
 'Ruby Ribbons'
 'Shenandoah'
 'ThunderCloud'
 'Warrior'
Schizachyrium scoparium - Little Bluestem
 'Carousel'
 'Jazz'
 'Blue Heaven'[™]
 'Prairie Blues'
 'The Blues'

Table B: Collaborator sites

Colorado State University
 University of Florida-Balm (Tampa)
 University of Florida-Ft. Lauderdale
 University of Florida- Ft. Pierce
 University of Florida-Quincy
 Longwood Gardens
 University of Minnesota
 University of Nebraska
 North Carolina State University
 Ohio State University
 Oregon State University
 Steven F. Austin State University
 Texas A&M University
 Texas State University
 Texas Tech University
 University of Vermont



North Carolina State University



Texas Tech University



University of Minnesota



Longwood Gardens



Panicum virgatum 'Northwind'

Table C: Data Collection

Seasonally, during growing seasons of 2013-2015

Measurements taken:

- Height
- Width
- Date of first spring growth
- Flower date and color
- Leaf color/fall color,
- Growth habit-uniformity and lodging
- Pests
- Self-seeding tendencies
- Winter survival
- Plant form
- Floral Impact
- Landscape Impact Rating (LIR)



University of Florida - Quincy



Colorado State University



Panicum virgatum 'Thundercloud'

Results

Variations in survival and quality were seen across sites and hardiness zones. Cold, snowy weather caused winter injury or death of cultivars in Vermont; wind, hail and floods damaged or destroyed most of the trial plants at Texas Tech. Cultivar quality and performance differed between trial sites (Table D). Best Performers were selected by high ratings in Plant Form and Landscape Impact Ratings (Table E).



Panicum virgatum 'Cheyenne Sky'

Table D: Survival %, Plant Form and Landscape Impact Rating in 2013 for all sites

2013	Survival, %			Plant Form			Landscape Impact Rating		
	<i>P. amarum</i>	<i>P. virgatum</i>	<i>S. scoparium</i>	<i>P. amarum</i>	<i>P. virgatum</i>	<i>S. scoparium</i>	<i>P. amarum</i>	<i>P. virgatum</i>	<i>S. scoparium</i>
Colorado State	75	96.9	90	4	4.2	3.7	3.5	4.1	3.9
Florida-Balm	*	*	*						
Florida-Ft. Lauderdale	*	*	*	2	3.3	3.1	1.5	2.3	3.2
Florida-Ft. Pierce	*	*	*	*	3.7	2.9	*	3.9	5
Florida-Quincy	*	*	*	4	4.7	4.8	1	3.5	4.3
Longwood	75	75	40	3.5	3.5	2.3	3	3.2	1.9
Minnesota	100	93.8	0.9	3.5	3.7	3.5	4	3.7	3.5
Nebraska	100	100	100	4	3.75	3.4	4	3.75	3.6
North Carolina				4	3.7	3.6	5	4.4	3.4
Ohio State	100	100	100	5	4.6	4.8	*	4.5	4.6
Oregon State	100	88	100	5	4.9	5	*	*	*
Texas A&M	*	*	*	*	*	*	*	*	*
Texas State	75	40#	8#	4.3	3.4	4	3	2.1	4
Texas Tech	*	*	*	*	*	*	*	*	*
Vermont	100	48.8	93.8	*	*	*	*	*	*

* no data; # partial data

Plant Form - 1 (low) to 5 (high)

Landscape Impact Rating - 1 (low) to 5 (high)



Panicum virgatum 'Shenandoah'



Panicum virgatum 'Rotstrahlbusch'

Plant form rating:

- 1= >80% prostrate
- 2= >66% prostrate or lodged
- 3= 50% lodging or prostrate
- 4= >80% upright, uniform, little lodging
- 5= 95% upright, uniform, attractive, very ornamental, no lodging

Landscape Impact Rating Scale

- 1 = Very little or no ornamental value in the landscape.
- 2 = Below average landscape appearance and value.
- 3 = Average landscape appearance and value.
- 4 = Above average landscape appearance
- 5 = Outstanding landscape appearance



Schizachyrium scoparium 'Blue Heaven'[™]



Schizachyrium scoparium 'Blue Heaven'[™] fall color

Table E: Best Performers at each site.

	<i>P. amarum</i>			<i>P. virgatum</i>										<i>S. scoparium</i>			
	Dewey Blue	Badlands	Cheyenne Sky	Cloud 9	Dallas Blues	Heavy Metal	Northwind	Prairie Fire	Prairie Sky	Rehbraun	Rotstrahlbusch	Shenandoah	Thundercloud	Warrior	Carousel	Blue Heaven [™]	The Blues
P Indicates Best Performer																	
Colorado State																	
Florida-Balm			P	P													
Florida-Ft. Lauderdale																	
Florida-Ft. Pierce																	
Florida-Quincy																	
Longwood																	
Minnesota																	
Nebraska																	
North Carolina	P																
Ohio State																	
Oregon State*																	
Texas A&M*																	
Texas State																	
Texas Tech*																	
Vermont*																	

* no data

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Visit www.grasstrials.com for trial updates

National Grass Trials

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