'Tift 15', 'Tift 26', 'Tift 114', 'Tift 118', and 'Tift 125' Ornamental Pennisetums

Wayne W. Hanna¹

Department of Crop and Soil Sciences, Tifton Campus, University of Georgia, 2360 Rainwater Road, Tifton, GA 31793

S. Kristine Braman

Department of Entomology, Griffin Campus, University of Georgia, 1109 Experiment Street, Griffin, GA 30223

Brian M. Schwartz

Department of Crop and Soil Sciences, Tifton Campus, University of Georgia, 2360 Rainwater Road, Tifton, GA 31793

Additional index words. trispecific hybrid, drought tolerant, ornamental grass, grass breeding

'Tift 15' (PP25,517), 'Tift 26' (PP25,513), 'Tift 114', 'Tift 118' (PP25,516), and 'Tift 125' are trispecific ornamental *Pennisetum* hybrids approved for release by the University of Georgia College of Agricultural and Environmental Sciences in 2012. They were selected from crosses between *Pennisetum purpureum* Schumacher, *Pennisetum squamulatum* Fresen, and *Pennisetum glaucum* (L.) R. Br. These trispecific hybrids are both pollen and seed sterile, although a few inflorescences are produced in the greenhouse when day-lengths become less than 11 h. However, no pollen is dehiscence from shriveled anthers and no seed has been observed on inflorescences. 'Tift 15' and 'Tift 26' were evaluated in three environments in Georgia: Tifton (coastal plain), Griffin (Piedmont), and Blairsville (mountain) from 2006 to 2011, but only the 2009, 2010, and 2011 data are reported. 'Tift 114', 'Tift 118', and 'Tift 125' were evaluated in two environments in Georgia: Tifton (coastal plain) and Blairsville (mountain) from 2006 to 2013, but only the 2009, 2010, 2011, 2012, and 2013 data are reported. All tests were planted in a randomized complete block design with six, four, and three single plant replications at Tifton, Griffin, and Blairsville, respectively. Each test included a number of other experimental hybrids. Plants in all tests were spaced on 1.8-m centers. Genotypes were evaluated for plant height, plant canopy diameter, leaf length and width, and culm-leaf angle and rated for plant color, and helminthosporium leaf spot. All data in the tables are from plants established as single stem propagules in mid-May and rated in September or October, except the 2010 and 2011 data at

Received for publication 11 Jan. 2016. Accepted for publication 5 Feb. 2016.

We express appreciation to the University of Georgia Research Foundation and the Georgia Seed Development Commission for financial support.

We appreciate the cooperation and assistance of Larry Baldree, Leanna Leach, Jacob Kalina, Jim Quick, Herman Garrett, Joe Garner, Steven Mullis, and Ray Covington.

¹Corresponding author. E-mail: whanna@uga.edu.

hardiness zones 8b to 10. 'Tift 15' and 'Tift 26' are perennial up to USDA hardiness zone 8a. However, they can be grown as vigorous annuals in more northern zones. Data for each variable were statistically analyzed by analyses of variance. Least significance differences (LSD) were used for mean separation.

Origin

The Tifton, GA, grass breeding program has produced pollen- and seed-sterile interspecific bermudagrass (*Cynodon* sp.) hybrids for over 50 years for golf courses, athletic fields, and landscapes. These hybrids have been widely used around the world. In 2003, a research program was initiated at Tifton to use the genetic stocks and wild species in our germplasm collection to produce pollen- and seed-sterile ornamental grasses. The *Pennisetum* genus contains more than 140 diverse species (Hanna et al., 2004), many with drought tolerance.

'Tift 15' (Supplemental Fig. 1), 'Tift 26' (Supplemental Fig. 2), 'Tift 114' (Supplemental Fig. 3), 'Tift 118' (Supplemental Fig. 4), and 'Tift 125' (Supplemental Fig. 5) are trispecific hybrids that originated from a cross between red (Hanna and Burton, 1992) tetraploid pearl millet (*P. glaucum*, 04-94) and SC 1125-2 [*P. purpureum* 'Merkeron' napiergrass × PS 262 (*P. squamulatum*)] in 2003. A single vigorous

Table 1. Plant heights of four ornamental *Pennisetum* cultivars planted at three locations for 2 to 3 years in Georgia.

Entry	Plant ht (cm) ^z							
	Tifton ^y			Blairsville ^x			Griffin ^w	
	2009	2010	2011	2009	2010	2011	2009	2010
Princess	82	96	64	— ^v	94	103	184	—
Tift 10	117	126	103	156	129	139	153	136
Tift 15	63	80	61	—	85	90	110	—
Tift 26	98	97	85	137	128	120	151	124
LSD ^u	7	15	14	NS	15	25	21	NS
Days of growth	153	150	183	144	145	160	138	124

^zPlant height measured from ground level to top of plant canopy.

^yTests planted on 9 May 2009, 9 May 2010, and 12 May 2011 and measurements taken on 12 Oct. 2009, 29 Sept. 2010, and 18 Oct. 2011, respectively.

^xPlanted on 14 May 2009, 11 May 2010, and 1 May 2011 and measurements taken on 8 Oct. 2009 and 6 Oct. 2010, and 10 Oct. 2011, respectively.

^wPlanted on 14 May 2009 and 14 May 2010 and measurements taken on 2 Oct. 2009 and 10 Sept. 2010, respectively.

^vData not recorded in respective years until there was licensing interest.

^uLeast significant difference at $P \leq 0.05$; NS = nonsignificant.

Table 2. Plant heights of four ornamental *Pennisetum* cultivars planted at two locations for 2 to 3 years in Georgia.

Entry	Plant ht (cm) ^z					
	Tifton ^y			Blairsville ^x		
	2009	2010	2011	2013	2011	2012
Vertigo [®]	115	116	95	114	136	128
Tift 114	164	— ^w	—	142	177	188
Tift 118	120	129	135	—	173	164
Tift 125	241	183	220	—	267	232
LSD ^y	7	15	14	9	25	14
Days of growth	153	150	183	125	160	158

^zPlant height measured from ground level to top of plant canopy.

^yTests planted on 9 May 2009, 9 May 2010, 12 May 2011, and 10 May 2013 and measurements taken on 12 Oct. 2009, 29 Sept. 2010, 18 Oct. 2011, and 11 Sept. 2013, respectively.

^xPlanted on 1 May 2011 and 4 Apr. 2012 and measurements taken on 10 Oct. 2011 and 8 Sept. 2012, respectively.

^wData not recorded in respective years until there was licensing interest.

^yLeast significant difference at $P \leq 0.05$; NS = nonsignificant.

Table 3. Plant canopy diameter of individual plants (spaced on 1.8-m centers) of four ornamental *Pennisetum* cultivars planted at three locations for 2 to 3 years in Georgia.

Entry	Plant canopy diam (cm) ^z					
	Tifton ^y			Blairsville ^x		
	2009	2010	2011	2009	2010	2011
Princess	120	120	135	— ^v	138	130
Tift 10	139	131	106	156	147	141
Tift 15	138	123	133	—	150	151
Tift 26	177	124	122	159	157	145
LSD ^u	7	NS	10	NS	15	12
Days of growth	153	150	183	144	145	160

^zPlant canopy diameter is the average diameter of the widest and narrowest diameters of a single plant canopy.

^yTests planted on 9 May 2009, 9 May 2010, and 12 May 2011 and measurements taken on 12 Oct. 2009, 29 Sept. 2010, and 18 Oct. 2011, respectively.

^xPlanted on 14 May 2009, 11 May 2010, and 1 May 2011 and measurements taken on 8 Oct. 2009 and 6 Oct. 2010, and 10 Oct. 2011, respectively.

^vPlanted on 14 May 2009 and 14 May 2010 and measurements taken on 2 Oct. 2009 and 10 Sept. 2010, respectively.

^uData not recorded in respective years until there was licensing interest.

^uLeast significant difference at $P \leq 0.05$; NS = nonsignificant.

Table 4. Plant canopy diameter of individual plants (spaced on 1.8-m centers) of four ornamental *Pennisetum* cultivars planted at two locations for 2 to 4 years in Georgia.

Entry	Plant canopy diameter (cm) ^z					
	Tifton ^y				Blairsville ^x	
	2009	2010	2011	2013	2011	2012
Vertigo [®]	155	130	120	130	159	151
Tift 114	182	— ^w	—	162	175	210
Tift 118	156	155	154	—	177	173
Tift 125	193	176	111	—	210	227
LSD ^v	7	13	10	8	17	18
Days of growth	153	150	183	125	160	158

^zPlant canopy diameter is the average diameter of the widest and narrowest diameters of a single plant canopy.

^yTests planted on 9 May 2009, 9 May 2010, 12 May 2011, and 10 May 2013 and measurements taken on 12 Oct. 2009, 29 Sept. 2010, 18 Oct. 2011, and 11 Sept. 2013, respectively.

^xPlanted on 1 May 2011 and 4 Apr. 2012 and measurements taken on 10 Oct. 2011 and 8 Sept. 2012, respectively.

^vData not recorded in respective years until there was licensing interest.

^uLeast significant difference at $P \leq 0.05$; NS = nonsignificant.

Table 5. Plant color ratings on individual plants (spaced on 1.8-m centers) of four ornamental *Pennisetum* cultivars planted at three locations for 2 to 3 years in Georgia.

Entry	Plant color ratings ^z					
	Tifton ^y			Blairsville ^x		
	2009	2010	2011	2009	2010	2011
Princess	7.0	3.1	6.0	— ^v	5.6	5.3
Tift 10	9.0	9.0	8.3	9.0	8.0	9.0
Tift 15	7.0	7.0	7.0	—	7.0	7.0
Tift 26	8.6	7.8	8.1	8.0	8.0	8.6
LSD ^u	0.2	0.5	0.6	0.7	0.8	0.6
Days of growth	153	150	183	144	145	160

^zPlant color ratings are 1 = green, 9 = dark purple/red.

^yTests planted on 9 May 2009, 9 May 2010, and 12 May 2011 and measurements taken on 12 Oct. 2009, 29 Sept. 2010, and 18 Oct. 2011, respectively.

^xPlanted on 14 May 2009, 11 May 2010, and 1 May 2011 and measurements taken on 8 Oct. 2009, 6 Oct. 2010, and 10 Oct. 2011, respectively.

^vPlanted on 14 May 2009 and 14 May 2010 and measurements taken on 2 Oct. 2009 and 10 Sept. 2010, respectively.

^uData not recorded in respective years until there was licensing interest.

^uLeast significant difference at $P \leq 0.05$; NS = nonsignificant.

plant (04-26-1) was selected from the cross in 2004. In 2004, 'Princess' napiergrass (Hanna and Ruter, 2005) was pollinated with 04-26-1. 'Tift 15', 'Tift 26', 'Tift 114', 'Tift 118', and 'Tift 125' were selected in 2005 from the 2004 cross. 'Princess' (PP 17,728) (Hanna and Ruter, 2005) and 'Tift 10' (PP 25,515) (Hanna et al.,

2015; licensed and marketed as 'First Knight') were used as controls for 'Tift 15' and 'Tift 26', because of their respective similarities. 'Vertigo[®]' ('Tift 8') (Hanna et al., 2011) was used as the morphological control for 'Tift 114', 'Tift 118', and 'Tift 125' and 'Princess' (Hanna and Ruter, 2005) was used as the

Table 6. Plant color ratings on individual plants (spaced on 1.8-m centers) of four ornamental *Pennisetum* cultivars planted at two locations for 2 to 3 years in Georgia.

Entry	Plant color ratings ^z				
	Tifton ^y			Blairsville ^x	
	2009	2010	2011	2011	2012
Vertigo [®]	9.0	8.1	8.1	8.0	8.0
Tift 114	8.0	— ^w	8.0	8.3	8.6
Tift 118	7.0	7.0	7.0	8.0	8.0
Tift 125	9.0	8.0	9.0	9.0	8.6
LSD ^v	0.2	0.9	0.6	0.6	NS
Days of growth	153	150	183	160	158

^zPlant color ratings are: 1 = green, 9 = dark purple/red.

^yTests planted on 9 May 2009, 9 May 2010, and 12 May 2011 and measurements taken on 12 Oct. 2009, 29 Sept. 2010, and 18 Oct. 2011, respectively.

^xPlanted on 1 May 2011 and 4 Apr. 2012 and measurements taken on 10 Oct. 2011 and 8 Sept. 2012, respectively.

^vData not recorded until there was licensing interest.

^uLeast significant difference at $P \leq 0.05$; NS = nonsignificant.

susceptible helminthosporium leaf spot control for 'Tift 15', 'Tift 26', 'Tift 114', 'Tift 118', and 'Tift 125'.

Description and Performance

'Tift 15' and 'Tift 26' were evaluated under field conditions in full sun at three locations in Georgia [Blairsville (Mountain), Griffin (Piedmont), and Tifton (Coastal Plain)] from 2006 to 2011, but only the 2009 to 2011 data are reported. 'Tift 114', 'Tift 118', and 'Tift 125' were evaluated under field conditions at Tifton and Blairsville from 2006 to 2013, but only the 2009 to 2013 data are reported. Soil types were Transylvania fine loam, Cecil clay loam, and Tifton loamy sand with soil pH values of 6.0, 5.4, and 5.8 at Blairsville, Griffin, and Tifton, respectively. Weeds were mechanically controlled at the three locations. Plots were watered after transplanting in the spring and only as needed to prevent extreme drought stress during the year. A granular complete fertilizer (10N-4.4P-8.3K) was applied per plant or to established plots in the spring as growth emerged at the rate of 224 kg·ha⁻¹.

'Tift 15' and 'Tift 26' are perennial at Griffin, GA (USDA zone 8a). 'Tift 114', 'Tift 118', and 'Tift 125' are perennials at Tifton, GA (USDA zone 8b). 'Tift 15' tended to be shorter than 'Princess' at most locations but the differences were significant in only three of the six tests (Table 1). 'Tift 26' tended to be shorter than 'Tift 10', but the differences were significant only in the three Tifton tests. 'Tift 114', 'Tift 118', and 'Tift 125' are the tallest hybrids in the trispecific *Pennisetum* series that have been released from the University of Georgia, beginning with 'Tift 17' (Hanna et al., 2010). They were significantly taller than 'Vertigo[®]' in most tests at Tifton and Blairsville, GA (Table 2). Only 'Tift 118' was not significantly taller at Tifton in 2009 and 2010.

Plant canopy diameter (Table 3) for 'Tift 15' was greater than 'Princess' in only two of

Table 7. Ratings for helminthosporium leaf spot on four ornamental *Pennisetum* cultivars planted at three locations for 1 to 3 years in Georgia.

Entry	Helminthosporium leaf spot ^z				
	Tifton ^y			Blairsville ^x	
	2009	2010	2011	2010	2011
Princess	5.2	6.6	8.0	5.0	7.6
Tift 10	1.0	1.0	1.0	1.0	1.0
Tift 15	1.0	1.0	1.0	1.0	1.0
Tift 26	1.0	1.0	1.0	1.0	1.0
LSD ^y	0.4	0.1	0.0	1.2	0.2
Days of growth	153	150	183	145	160

^zHelminthosporium leaf spot ratings: 1 = no disease, 2 = 1% to 20%, 3 = 21% to 30%, 4 = 31% to 40%, 5 = 41% to 50%, 6 = 51% to 60%, 7 = 61% to 70%, 8 = 71% to 80%, and 9 = >80% leaves infected. Symptoms occur in the field during late August and September.

^yTests planted on 9 May 2009, 9 May 2010, and 12 May 2010 and measurements taken on 12 Oct. 2009, 29 Sept. 2010, and 18 Oct. 2011, respectively.

^xPlanted on 14 May 2009, 11 May 2010, and 1 May 2011 and measurements taken 8 Oct. 2009 and 6 Oct. 2010, and 10 Oct. 2011, respectively.

^wPlanted on 14 May 2009 and measurements taken on 2 Oct. 2009.

^vLeast significant difference at $P \leq 0.05$; NS = nonsignificant.

Table 8. Ratings for helminthosporium leaf spot on five ornamental *Pennisetum* cultivars planted at two locations for 2 to 3 years in Georgia.

Entry	Helminthosporium leaf spot ^z				
	Tifton ^y			Blairsville ^x	
	2009	2010	2011	2011	2012
Princess	5.2	6.6	8.0	5.0	7.6
Vertigo [®]	1.0	1.0	1.0	1.0	1.0
Tift 114	1.0	1.0	1.0	1.0	1.0
Tift 118	1.0	1.0	1.0	1.0	1.0
Tift 125	1.0	1.0	1.0	1.0	1.0
LSD ^w	0.4	0.1	0.0	1.2	0.2
Days of growth	153	150	183	150	158

^zHelminthosporium leaf spot ratings: 1 = no disease, 2 = 1% to 20%, 3 = 21% to 30%, 4 = 31% to 40%, 5 = 41% to 50%, 6 = 51% to 60%, 7 = 61% to 70%, 8 = 71% to 80%, and 9 = >80% leaves infected. Symptoms occur in the field during late August and September.

^yTests planted on 9 May 2009, 9 May 2010, and 12 May 2011 and measurements taken on 12 Oct. 2009, 29 Sept. 2010, and 18 Oct. 2011, respectively.

^xPlanted on 1 May 2011 and 4 Apr. 2012 and measurements taken on 10 Oct. 2011 and 8 Sept. 2012, respectively.

^vLeast significant difference at $P \leq 0.05$; NS = nonsignificant.

Table 9. Leaf characteristics of individual plants (spaced on 1.8-m centers) of four ornamental *Pennisetum* cultivars planted at Tifton, GA, in 2009^z.

Entry	Leaf length ^y (cm)	Leaf width ^x (mm)	Leaf area ^w (cm ²)	Leaf angle stem:leaf ^v (degrees)
Princess	49	37	132	13
Tift 10	73	46	230	25
Tift 15	64	34	158	13
Tift 26	72	40	206	33
LSD ^u	6	4	33	8

^zTests planted on 9 May 2009 and measurements taken on 12 Sept. 2011.

^yLeaf length measured from the leaf collar to the leaf tip of the latest fully extended leaf.

^xLeaf width measured in the center of the latest fully extended leaf.

^wLeaf area is the mean of three leaves per replication measured with a LI-COR area meter.

^vAngle between adaxial leaf surface and culm at the leaf collar measured on last fully extended leaf.

^uLeast significant difference at $P \leq 0.05$; NS = nonsignificant.

six tests. ‘Tift 26’ had a wider plant canopy diameter in only two of eight tests. In general, canopy width was similar for ‘Tift 10’, ‘Tift 15’, ‘Tift 26’, and ‘Princess’. Plant canopy diameter (Table 4) was significantly greater for cultivars Tift 114, Tift 118, and Tift 125 than for ‘Vertigo[®]’ in most tests at Tifton and Blairsville. ‘Tift 125’ tended to have the largest plant canopy diameter of the three experimental cultivars. The plant canopy diameter of ‘Tift 114’ has a “mushroom” appearance toward the end of the growing season.

Plant color ratings (1 = green and 9 = dark) of ‘Tift 15’ were significantly better than for ‘Princess’ in four of six tests (Table 5). Plant color ratings of ‘Tift 26’ were significantly lower than ‘Tift 10’ in five of the eight tests. However, ‘Tift 26’ still had a very desirable plant color rating (we consider a rating of 7.0 or above as being acceptable). Mature leaf color of both ‘Tift 15’ and ‘Tift 26’ was “greyed purple” (187B). Plant color ratings for ‘Tift 114’, ‘Tift 118’, and ‘Tift 125’ were as good or

better than ‘Vertigo[®]’ at all locations except ‘Tift 118’ at Tifton which had a significantly lower (but acceptable) plant color rating of 7.0 (Table 6). Culms of ‘Tift 125’ have a white waxy coating with provides desirable contrast with the reddish purple plant color. Mature leaf colors of these cultivars were Tift 114, greyed purple (187B); Tift 118, greyed purple (187A); and Tift 125, greyed purple (187A).

Helminthosporium leaf spot is known to affect some genotypes in this species, but this disease was not observed at Tifton, Griffin, or Blairsville, GA, on ‘Tift 15’, ‘Tift 26’, ‘Tift 114’, ‘Tift 118’, and ‘Tift 125’ (Tables 7 and 8), whereas ‘Princess’ had significantly high levels of disease.

‘Tift 15’ has longer leaves than ‘Princess’ but leaf width was similar for the two cultivars (Table 9). Leaf width was narrower for ‘Tift 26’ compared with ‘Tift 10’ but leaf lengths were similar. ‘Tift 114’, ‘Tift 118’, and ‘Tift 125’ had significantly longer leaves than ‘Vertigo[®]’ (Table 10). However, only ‘Tift 125’ had significantly wider leaves than ‘Vertigo[®]’. Culm-leaf angle of ‘Tift 114’ and ‘Tift 118’ were similar to that of ‘Vertigo[®]’. Only ‘Tift 125’ had a more upright (smaller leaf angle) than ‘Vertigo[®]’.

‘Tift 15’, ‘Tift 26’, ‘Tift 114’, ‘Tift 118’, and ‘Tift 125’ survived a low temperature of -6 °C for one night and 21 nights below 0 °C in the field during the 2009–10 winter at Tifton. ‘Tift 15’ and ‘Tift 26’ have survived the winter temperatures for 60 d below 0 °C and a low temperature of -8 °C during the 2009–10 winter at Griffin. None of the five cultivars have survived in the mountains at Blairsville (low temperatures of -15 °C in 2009–10 and 2010–11 winters). However, because of their vigor they can effectively be used as an annual where they will not survive freezing temperatures in the winter.

In summary, ‘Tift 15’ is morphologically similar to ‘Princess’ but has significantly better helminthosporium leaf spot resistance and plant color rating. ‘Tift 26’ tends to be shorter and has a more drooping leaf (larger culm-leaf angle) than ‘Tift 10’ while maintaining a desirable plant color rating and good resistance to helminthosporium leaf spot. ‘Tift 114’, ‘Tift 118’, and ‘Tift 125’ are taller, have a broader plant canopy diameter, and longer leaves than ‘Vertigo[®]’. Their plant color rating compared favorably with ‘Vertigo[®]’ at both Tifton and Blairsville, GA. Leaf widths of ‘Tift 114’ and ‘Tift 118’ are similar to ‘Vertigo[®]’, whereas ‘Tift 125’ has a wider leaf and smaller culm-leaf angle. ‘Tift 114’, ‘Tift 118’, and ‘Tift 125’ have good resistance to helminthosporium leaf spot like ‘Vertigo[®]’. These cultivars can be used as accent plants or in background or border plantings.

Availability

‘Tift 15’, ‘Tift 26’, and ‘Tift 118’ are patented and ‘Tift 114’ and ‘Tift 125’ will be patented by the University of Georgia. These cultivars have been registered with the

Table 10. Leaf characteristics of individual plants (spaced on 1.8-m centers) of four ornamental *Pennisetum* cultivars planted at Tifton, GA, in 2009 and 2013^z.

Entry	Leaf length ^y (cm)		Leaf width ^x (mm)		Leaf area ^w (cm ²)		Leaf angle stem:leaf ^v (degrees)	
	2011	2013	2011	2013	2011	2013	2011	2013
Vertigo®	82	78	42	34	245	185	19	19
Tift114	— ^u	110	—	35	—	219	—	22
Tift118	91	—	46	—	305	—	19	—
Tift125	—	115	—	42	—	330	—	13
LSD [†]	6	2	4	5	33	45	8	4

^zTests planted on 9 May 2009 and measurements taken on 12 Sept. 2011; test planted on 10 May 2013 and measurements taken on 11 Sept. 2013.

^yLeaf length measured from the leaf collar to the leaf tip of the latest fully extended leaf.

^xLeaf width measured in the center of the latest fully extended leaf.

^wLeaf area is the mean of three leaves per replication measured with a LI-COR area meter.

^vAngle between adaxial leaf surface and culm at the leaf collar measured on last fully extended leaf.

^uData not recorded in respective years until there was licensing interest.

[†]Least significant difference at $P \leq 0.05$; NS = nonsignificant.

National Plant Germplasm System but are available only through the University of Georgia. Field plantings of breeders' material for 'Tift 15', 'Tift 26', 'Tift 114', 'Tift 118', and 'Tift 125' are maintained at the University of Georgia, Tifton Campus. As protected cultivars, Tift 15, Tift 26, Tift 114, Tift 118,

and Tift 125 can only be produced by nurseries licensed by the Georgia Research Foundation. 'Tift 15', 'Tift 26', 'Tift 114', 'Tift 118', and 'Tift 125' have a number of licensees and will be marketed as 'Regal Princess', 'Grand Dutchess', 'Noble', 'Royal Prince', and 'Black Stockings', respectively.

Literature Cited

- Hanna, W.W. and G.W. Burton. 1992. Genetics of red and purple plant color in pearl millet. *J. Hered.* 83(5):386–388.
- Hanna, W.W., D.D. Baltensperger, and A. Seetharam. 2004. Pearl millet and other millets, p. 537–560. In: L.E. Moser, B.L. Burson, and L.E. Sollenberger (eds.). *Warm-season (C4) grasses*. Agron. Monogr. 45. ASA, CSSA, and SSSA, Madison, WI.
- Hanna, W.W. and J.M. Ruter. 2005. 'Princess' and 'Prince' napiergrass. *HortScience* 40:494–495.
- Hanna, W.W., S.K. Braman, and B.M. Schwartz. 2010. 'Tift 17' and Tift '23' hybrid ornamental *Pennisetums*. *HortScience* 45:135–138.
- Hanna, W.W., S.K. Braman, and B.M. Schwartz. 2011. Registration of 'Tift 8' trispecific ornamental *Pennisetum*. *J. Plant Regist* 5:1–5.
- Hanna, W.W., S.K. Braman, and B.M. Schwartz. 2015. Registration of 'Tift 10', 'Tift 11', and 'Tift 40' trispecific ornamental *Pennisetum*. *J. Plant Regist* 10:1–4.
- Royal Horticultural Society (RHS). 2007. RHS colour charts. 5th ed. Royal Hort. Soc., London, UK.

Supplemental Fig. 1. First-year plant (116 d after planting) of 'Tift 15' ornamental *Pennisetum* growing in a research plot.

Supplemental Fig. 2. First-year plant (116 d after planting) of 'Tift 26' ornamental *Pennisetum* growing in a research plot.

Supplemental Fig. 3. First-year plant (116 d after planting) of 'Tift 114' ornamental *Pennisetum* growing in a research plot.

Supplemental Fig. 4. First-year plant (116 d after planting) of 'Tift 118' ornamental *Pennisetum* growing in research plots.

Supplemental Fig. 5. First-year plant (116 d after planting) of 'Tift 125' ornamental *Pennisetum* growing in research plots.