‘Princess’ and ‘Prince’ Napiergrass

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‘Princess’ and ‘Prince’ are dwarf and semi-dwarf, respectively, purple-foliaged napiergrasses [Pennisetum purpureum (L.) Schum.] being jointly released by the U.S. Dept. of Agriculture and University of Georgia College of Agricultural and Environmental Sciences. These grasses are perennial in USDA hardiness zones 8 to 10. However, they can be grown as vigorous annuals in more northern zones. These plants flower under short days, therefore, these cultivars will not produce seed where winter temperatures reach freezing (0 °C) or below.

Origin

Seeds of two napiergrass accessions, designated Anae Roxo CNPGL, were received from CENARGEN–EMBRAPA in Brazil in April 1996. Seedlings were grown under quarantine in the greenhouse during the winter of 1996–97. The plants segregated for a wide variety of green and various shades of purple plants with a range of vigor. The most vigorous purple pigmented plant in each accession, given the Tifton numbers N240 and N241, were selfed. Seeds of these plants were planted in the field in 1997. The progenies from these selfed plants again segregated for color and vigor in the field. Three vigorous plants, from each accession, with different colors and vigor in the field were propagated for further evaluation as vigorous annuals in more northern zones. These plants flower under short days, therefore, these cultivars will not produce seed where winter temperatures reach freezing (0 °C) or below.

Table 1. Plant characteristics of purple napiergrass planted in 2000 in Savannah, Ga. Measurements taken 28 Nov. 2001 and 11 July 2002.

| Entry   | Ht (cm) | Base circumference (cm) | Top canopy spread (cm) | Tillers (no.) |
|---------|---------|-------------------------|------------------------|--------------|
|         | 2001    | 2002                    | 2001                   | 2002         | 2001       | 2002       |
| Princess | 123     | 142                     | 161                    | 352          | 141        | 154        | 82          | 83          |
| Prince  | 179     | 218                     | 137                    | 371          | 218        | 338        | 70          | 168         |
| Rubrum  | 120     | 108                     | 47                     | 40           | 100        | 70         | 46          | 37          |
| LSDat   | 14      | 15                      | 43                     | 75           | 30         | 116        | 24          | 41          |

Table 2. Plant characteristics of purple napiergrass planted in Tifton, Ga. 28 Nov. 2001 and 11 July 2002.

| Entry   | Ht (cm) | Base circumference (cm) | Top canopy spread (cm) | Tillers (no.) |
|---------|---------|-------------------------|------------------------|--------------|
|         | 2001    | 2002                    | 2001                   | 2002         | 2001       | 2002       |
| Princess | 73      | 102                     | 114                    | 204          | 115        | 125        | 42          | 76          |
| Rubrum  | 103     | *                       | 34                     | 71           | 9          | 9           |
| LSDat   | 7       | 9                       |                        |              |            |            |

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as well as nodal cuttings from the stem. Well rooted liners of ‘Prince’ shifted from 8.3-cm pots to #5 (19.0-L) containers in mid-April produced salable plants at a commercial nursery in 40 days. After cutting back, plants were again salable after 57 d. In 19-L containers using a pine bark-based substrate, paclobutrazol drenches were not economically feasible for reducing plant growth. Hard pruning to control plant size results in good regrowth.

Helminthosporium leaf spot has been noted on the foliage in the field and under overhead sprinklers in container nurseries, but control has not been necessary. Two-lined spittlebug (Prosapia bicinta (Say)) has also been noted to feed on the bases of field and container-grown plants. In the field, plants should be cut back in the late winter to remove debris that harbors spittlebugs.

Plants are not recommend for landscape use in areas where a hard freeze does not regularly occur by 1 Dec. (USDA 9-11) since reseeding may be an issue, particularly in humid, subtropical environments. Napiergrass is considered an exotic pest plant in Florida (Langeland and Burks, 1998) and plants can not be shipped to or grown in California (Liz Johnson, personal communication). According to the USDA (Natural Resources Conservation Service, 2003), napiergrass is also naturalized in Texas, Hawaii, Puerto Rico, and the Virgin Islands. Thus, ‘Prince’ and ‘Princess’ selections of ornamental napiergrass are not recommend for frost-free subtropical areas but can be used as cold-hardy perennials in USDA 8a or as summer annuals further north.

Table 3. Plant characteristics of purple napiergrass planted in 2001 adjacent to the Natural Products Laboratory in Tifton, Ga. Measurements taken 28 Nov. 2001, 11 July 2002, and 27 Aug. 2003.

| Entry     | Ht (cm) | Base circumference (cm) | Top canopy spread (cm) | Tillers (no.) |
|-----------|---------|-------------------------|------------------------|---------------|
| Princess  | 95      | 126                     | 353                    | 79            |
| Prince    | 182     | 200                     | 359                    | 91            |
| LSD_unt   | 21      | 13                      | 58                     | 40            |

Table 4. 2003 plant characteristics of purple napiergrass planted in 2003 in the RDC Field at Tifton, Ga. Measurements taken 27 Aug. 2003.

| Entry     | Ht (cm) | Base circumference (cm) | Top canopy spread (cm) | Tillers (no.) |
|-----------|---------|-------------------------|------------------------|---------------|
| Princess  | 95      | 126                     | 353                    | 79            |
| Prince    | 182     | 200                     | 359                    | 91            |
| LSD_unt   | 21      | 13                      | 58                     | 40            |

Table 5. Leaf characteristics of purple napiergrass planted in 2001 and 2003 in Tifton, Ga.

| Entry     | Leaf length (cm) | Leaf width (mm) |
|-----------|------------------|-----------------|
| Princess  | 58.6             | 55.2            |
| Prince    | 85.5             | 84.3            |
| Rubrum    | 30.5             | 8.1             |
| LSD_unt   | 1.9              | 7.6             |

Table 6. Propagation response of ‘Prince’ and ‘Princess’ purple napiergrasses in the greenhouse. Planted 31 Oct. 2002 and rated 20 Nov. 2002.

| Entry     | Treatment                      | Shoots (no.) | Ht (cm) |
|-----------|--------------------------------|--------------|---------|
| Princess  | Uncut stems(no sheath)         | 22.8         | 10.9    |
| Prince    | Uncut stems(sheath)            | 14.5         | 9.6     |
|           | One node stems(no sheath)      | 18.0         | 3.1     |
|           | Two node stems(no sheath)      | 40.3         | 5.0     |
| Mean      |                                | 30.6         | 7.1     |
|           | Uncut stems(no sheath)         | 19.2         | 10.7    |
|           | Uncut stems(sheath)            | 11.0         | 10.0    |
|           | One node stems(no sheath)      | 33.3         | 5.8     |
|           | Two node stems(no sheath)      | 30.3         | 9.1     |
| Mean      |                                | 23.4         | 8.9     |
| LSD_unt   |                                | 7.9          | 0.5     |
| LSD_unt   |                                | 6.5          | 0.4     |

A U.S. Plant Patent for ‘Princess’ and ‘Prince’ has been applied for on behalf of the U.S. Department of Agriculture, Agricultural Research Service. Contact the authors for more information. Field plantings of ‘Princess’ and ‘Prince’, respectively, are maintained in the breeder nursery at Tifton, Ga. As protected cultivars, ‘Prince’ and ‘Princess’ can only be produced by nurseries licensed by the Georgia Seed Development Commission (GSDC) under guidelines established in conjunction with the University of Georgia Research Foundation (UGARF). Contact the GSDC (http://www.gsdc.com) for information on availability.

Table 7. Literature Cited

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