

# *Pennisetum setaceum* (Forssk.) Chiov.



**Common Name:** Fountain grass, green fountain grass, crimson fountain grass

**Synonymy:** *P. ruppellii* Steud.

**Origin:** North Africa and Middle East

**Botanical Description:** Mound forming, perennial grass to 1.3 m (5 ft) tall; stems densely tufted, erect. Leaf blades narrow, linear, flat or edges slightly to strongly inrolled, to 0.6 m (2 ft) long and 6 mm (0.2 in) wide, upper surface rough, midrib thickened on upper surface; leaf sheath to 15 cm (6 in) long; ligule a dense row of silky hairs. Inflorescence a dense, terminal panicle, white to dark green to pinkish purple, narrow, cylindrical, nodding, to 35 cm (14 in) long and 7 cm (2.7 in) wide (including bristles). Spikelets in clusters of 1-3, each to 6 mm (0.2 in) long, with conspicuous bristles; first glume 1.6-2.8 mm (0.06-0.1 in) long; bristles plumose towards the base, to 4 cm (1.5 in) long, usually 4 to 5 times as long as spikelets.

**Ecological Significance:** Popular as a landscape plant for its attractive growth pattern and purple flower spikes, fountain grass escapes cultivation and has naturalized on the edges of pine rocklands, scrub margins, and along roadsides in central and south Florida (Bradley 1998). Noted from Yamato Scrub Natural Area, Tigertail Beach Park, and Crocodile Lake National Wildlife Refuge (Gann et al. 2001). A prohibited noxious weed in Hawaii, where it threatens several endangered plants (Cronk and Fuller 1995), replaces native grass communities (Daehler and Carino 1998), inhibits shrub colonization and native seedling growth (Cabin et al. 2000), alters fire regimes (Smith and Tunison 1992), and invades xeric to mesic areas, grasslands, scrub, and open forest (Jacobi and Warshauer 1992). Also may colonize bare lava flows and disrupt primary succession (Tunison 1992). Considered a worldwide seed contaminant (USDA ARS 2002). Naturalized throughout Australia and New Zealand, where it is banned (Blood 2001). Prohibited in South Africa where it is a widespread, competitive weed (Henderson 2001) and invades natural vegetation and stony slopes in the species-rich Fynbos (Milton et al. 1998). A weed of major concern in Oregon, and escaped in Sonoran desert regions of Arizona (Siegel 2002). Grows in rock crevices and pavement cracks; invades undisturbed

coastal dunes, coastal sage scrub, warm desert shrublands, and canyons in California (Healy 2001). The hard leaves are unpalatable to mammals (Milton et al. 1998) and can lower livestock productivity (Cronk and Fuller 1995). Several sterile cultivars exist, such as *P. setaceum* "Rubrum," which can be propagated by stem cuttings (Cunliffe et al. 2001).

**Distribution:** Herbarium specimens documented from Miami-Dade, Monroe, and Palm Beach counties (Wunderlin and Hansen 2002). In the United States, it has also escaped in Arizona, California, Colorado, Louisiana, Tennessee, and Puerto Rico (USDA NRCS 2002). Naturalized in arid and semi-arid regions of Australia, Fiji, South Africa, Zimbabwe (Milton et al. 1998), throughout the Pacific Islands (PIER 2002), and southern Europe (Crespo et al. 1990). Extremely destructive in the Canary Islands (Perez de Paz et al. 1999).

**Life History:** Fast growing, with vigorous vegetative growth, and apomictic (asexually produces seed without pollination) reproduction (Goergen and Daehler 2001). Stimulated by fire (Tunison 1992); recovers quickly from burning and clipping (Goergen and Daehler 2001); extremely drought tolerant; highly adaptable to a variety of climate and rainfall conditions (Milton et al. 1998). Very high phenotypic plasticity allows it to adapt to various soil nutrient levels and a broad range of environmental conditions (Williams and Black 1996). Grows in dry to mesic soils, tolerates windy conditions and a variety of substrates, including sand, fertile shale, granite-derived soils, and sandstone (Milton et al. 1998). Tolerates acidic to alkaline conditions, loam and clay soils, and full sun to partial shade (Gilman 1999e). Dies back in mild winters but resprouts in spring (Gilman 1999e); relatively intolerant of cold (Simpson and Bashaw 1969); reportedly intolerant of saline conditions (Healy 2001). Numerous seeds are dispersed by wind, water, and possibly birds (Tunison 1992), and can also be spread on clothing or vehicles, in garden waste, and from discarded flower arrangements. Seeds germinated rapidly when exposed to moisture, with germination rates of 45% in fresh seed (Goergen and Daehler 2001). Seeds may remain viable for over 6 years (Tunison 1992).