



Figure 1.
 Gardeners love purple fountain grass for its beauty and easy maintenance.

Cultivating Purple Fountain Grass

This perennial, which thrives in warm temperatures, dazzles in the garden. Check out these production tips for growing this grass.

by **SHI-YING WANG, WILL CARLSON, HONGWEN GAO, ARTHUR CAMERON, and ROYAL D. HEINS**

THE genus *Pennisetum*, or fountain grass, includes more than 120 species of annual and perennial grasses. *Pennisetum* comes from the Latin *penna* (feather) and *seta* (bristle). Purple fountain grass, also known as

purple-leaved or red fountain grass, is a horticultural selection from *Pennisetum setaceum*. It's a warm-season perennial grass and dies at 20°F (-7°C), making it an annual north of Zone 9.

The three purple fountain grass cultivars that are commercially available are 'Rubrum,' 'Cupreum,' and 'Atrosanguineum.' We have studied 'Rubrum' (Figure 1) and 'Atrosanguineum' and found most responses

are similar for the two cultivars.

The bronze-purple leaves and reddish pink flower spikes are striking in almost any garden setting (Figure 2), and the plant makes a stunning centerpiece in a container (Figure 3). In the garden, its glossy foliage grows in upright, arching clumps 3-4 feet tall and just as wide. Leaves are 1/4 - 1/2 inch wide and 8-12 inches long. Its small flowers are grouped as arching

17(5)



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spikes about 8-12 inches long and $\frac{3}{4}$ - 1 inch wide. The spikes change colors during development (Figure 4), adding to their attractiveness and value.

Propagation

Purple fountain grass doesn't produce viable seeds and must be propagated from cuttings or by division. Cutting propagation is generally not recommended for a number of reasons, including slow root and shoot development and complex propagation methods.

Commercial propagators can make divisions from garden plants as early as fall. Divisions can then be placed into a 50-cell tray and grown in a warm greenhouse. When plugs have 5-6 leaves, they can be shipped or transplanted into larger

containers for forcing. After 8-9 weeks, plants grown in 6-inch pots at 70°F (21°C) will produce more than 30 tillers (Figure 5), each capable of starting a new plant if it's divided carefully and has at least one healthy root. Divisions made from actively growing plants will die if cut back too soon after transplanting.

Photoperiod, Cold Treatment, And Light

Purple fountain grass is a quantitative long-day plant (Figure 6) and doesn't require a cold treatment for flowering. When forced at 68°F (20°C), plants under a 14-hour or longer photoperiod flowered 4 weeks earlier than those with a photoperiod less than 13 hours.

Purple fountain grass prefers full sun. Plants grown under greenhouse

conditions typically develop green to light purple leaves that turn bronze-purple after moving outdoors. Supplemental lighting from high-pressure sodium lamps at 400-500 footcandles for 8-14 hours each day can considerably improve plant quality in the greenhouse, especially

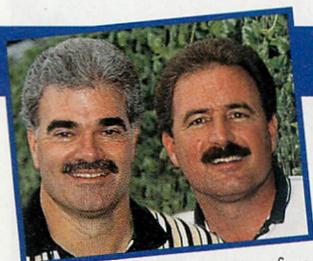
during the winter months.

Media, Fertilization, And Irrigation

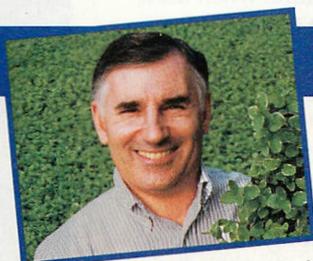
In the garden, purple fountain grass prefers a well-drained, moist, fertile loam, but grows well in average soil. It tolerates heavy, rocky, or sandy soil if water is available regular-



Figure 2. Foliage and flower spikes of purple fountain grass are striking in almost any gardening setting.



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ly. Avoid fertilizing if it is planted in well-prepared soil.

Overfertilizing, especially with too much nitrogen, results in soft growth and causes floppy plants.

In the greenhouse, plants grow well with 100-150 ppm N, 10-20 ppm P₂O₅, and 100-150 ppm K₂O at each irrigation. Plants grown in a soil mixture of 5 parts loam, 2 parts peat, and 3 parts sand tolerated drought more than those grown with a commercial soil-less medium composed of horticultural sphagnum peat and perlite. But as long as the plant is well-watered, it grows well in peat-lite mixes.

Container Size

Purple fountain grass grows and



Figure 3. Purple fountain grass makes a stunning centerpiece in a container. Photo courtesy of White Flower Farm.



Figure 4. The spikes change colors in different development stages. It takes about 2 weeks from the spike tip appearance (No. 2) to its full emergence (No. 3).

Table 1.

Sizing Up Purple Fountain Grass

Pot size	Plant height	Shoot No.	Spike No.	Spike length	Root dry weight	Shoot dry weight
4½ inch	37.0 inches	35	7	8.7 inches	13 grams	29 grams
6 inch	35.8 inches	53	8	9.4 inches	15 grams	34 grams
1 gallon	40.6 inches	92	19	9.8 inches	35 grams	79 grams

Table 1. Plant size of purple fountain grass is affected by its container size. Data shown here were collected after growing 16 weeks in a glass greenhouse at 70°F (21°C) and a 14-hour photoperiod with supplemental lighting from high-pressure sodium lamps at 400-500 footcandles.

forms tillers continuously when growing conditions are favorable. Plant size, especially shoot and spike number, can be limited by the container size (Table 1). To limit root competition with other species in a combination container, plant purple fountain grass in a smaller pot before making the combination planting.

Plant Height Control

Purple fountain grass is a naturally tall plant and is beautiful when used in the landscape. But in pots, short plants have the advantage. Cutting back after stem elongation decreases plant height, but this isn't an economical method for growers.

Treating with plant growth retardants such as Bonzi or A-Rest sprays of 50 ppm, Cycocel sprays of 6000 ppm, or Sumagic sprays of 40 ppm just before stem elongation reduces plant height effectively. Keep in mind these treatments may delay flowering.

Temperatures And Crop Scheduling

Although purple fountain grass grows fastest at temperatures between 80°-90°F (26°-32°C), plants can be successfully forced at lower temperatures. It takes about 10-12 weeks at 68°F (20°C) and a 14-hour photoperiod from the onset of forcing to the first appearance of an inflorescence (spike tip stage), and an additional 2 weeks from inflorescence appearance to its full emergence.

Using higher temperatures for plug production and lower temperatures for forcing will produce a compact finished plant with more tillers

(Figure 7). Growing plugs at 74°F (23°C) with a 14-hour photoperiod for 5-6 weeks followed by forcing at 68°F (20°C) with natural photoperiod for

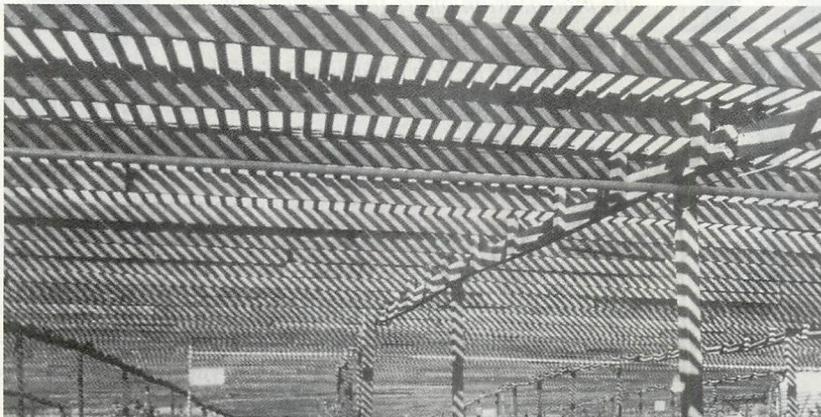


Figure 5. Plants grow fast in warm temperatures. Starting from a single tiller, a plant grown 8-9 weeks in a 6-inch pot at 70°F (21°C) with supplemental lights produces more than 30 tillers.



Figure 6. Influence of photoperiod on flowering of purple fountain grass. NI means night interruption.

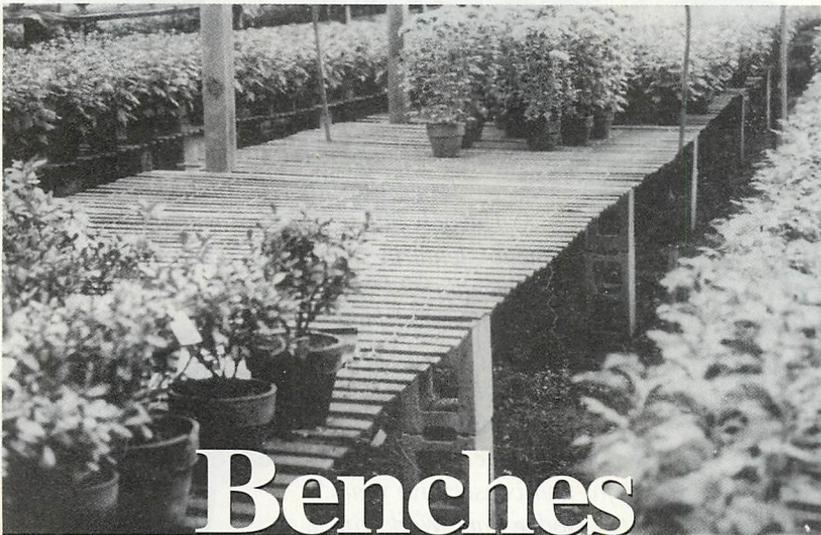
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Figure 7. Using higher temperatures for plug production and lower temperatures for forcing will produce a compact finished plant with more tillers.

8-9 weeks will produce high-quality flowering plants.

Diseases And Insects

We have not observed any serious pests or problems with purple fountain grass. One symptom to look for is severe water stress, which causes lower leaf necrosis.

Postharvest Concerns

With warm conditions, new spikes continue to emerge from young shoots. But the spikelets (individual grass flowers) in old spikes will eventually detach and fall away. The plant's aesthetic appearance benefits from prompt removal of old spikes, which also can be harvested for dried flower arrangements.

Invasiveness Concerns

In northern zones 3-6, purple fountain grass is an annual and is killed if temperatures drop below 20°F. It won't survive winter unless kept in containers and taken inside during cold months. In zone 7 and above, purple fountain grass is not a running grass and won't spread by means of above-ground or underground stems.

Its inability to produce viable seeds also prevents purple fountain grass from becoming invasive. But keep in mind, it is a warm-season perennial grass and should be used with caution in these zones. **GG**

About the authors: Shi-Ying Wang is a horticulturist at PanAmerican Seed Co., West Chicago, IL 60185. Will Carlson, Arthur Cameron, and Royal D. Heins are professors, and HongWen Gao is a research associate, Department of Horticulture, Michigan State University, East Lansing, MI 48824.