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## Native Wildflowers: Container Production of Joe-Pye Weed From Seed<sup>1</sup>

Jeffrey G. Norcini, James H. Aldrich, and Gale Allbritton<sup>2</sup>

### Description

Joe-Pye weed (*Eupatorium fistulosum* Barratt) is an herbaceous perennial native from Maine to Michigan, south to central Florida and Texas (USDA Hardiness Zones 3-9; AHS Heat Zones 2-10). It grows best in moist to slightly moist, well-drained soil under full sun to partial shade (5).

This upright plant grows 3 to 10 ft tall and has dark green whorls of lance-shaped leaves. During the summer, Joe-Pye weed bears showy panicles of dusty rose to lavender flowers (Figure 1). Individual flowers are small (1/2 inch) but the panicles can be up to 18 inches in diameter. The showy panicles attract butterflies, skippers, hummingbirds, bees and wasps (3) (Figure 2).

The height of this species along with its large panicles of flowers make it quite striking in home landscapes as well as fields and pastures, along road shoulders, and at the edges of woods. But the height, which adds to its attractiveness, is of concern for nurseries that want to produce it in containers. Tall



Figure 1. Joe-Pye weed or queen-of-the-meadow.

plants easily blow over during production and can be difficult to ship.

In this publication, we describe a production protocol that results in plants that are only 18 to 24 inches tall when they are ready to ship.

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2. Associate Professor of Environmental Horticulture and Senior Biological Scientist, North Florida Research and Education Center, Quincy, FL 32351, and Assistant Director, Green Industries Institute, Monticello, FL 32344, respectively.

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**Figure 2.** A skipper feeds on the nectar of an open flower of Joe-Pye weed.

### Origin of Propagules

The origin of the plant material (seeds or plants) is a factor that you should consider when growing Joe-Pye weed. By origin, we mean the geographical location from which the plant material was originally derived. For example, stock plants from which all future seeds or cuttings are harvested might have been grown from seeds harvested from a naturally occurring population in Jefferson County, Florida. Some geographic populations are cold hardy only to USDA Hardiness Zone 5, and some populations cannot survive heat stress south of Zone 7 (3). The flowering date of Joe-Pye weed might also be affected as it is for other related wildflower species found over a similar range (1, 2, 4). Any effect on flowering is important because flower initiation is what stops Joe-Pye weed from growing taller.

### Liner Production From Seed

Good germination can be obtained with seed from the current season (Figure 3). Seed should be ready to harvest by late August or early September. Sow freshly harvested seed -- within 2 weeks after harvest -- on a soilless medium designed for seed germination. Lightly cover the seed with the medium. Flats should be watered regularly so that the medium does not dry out. If you are overhead watering, use a fine spray so as not to disturb the medium.

In 4 to 6 weeks, seedlings should be ready to transplant into liner pots or trays, especially if grown in a greenhouse; we use 2-1/4 inch pots. The potting medium should be a well-drained, soilless nursery mix such as pine bark:Canadian sphagnum peat:sand (3:1:1, by vol.) amended with controlled-release fertilizer (low rate) and micronutrients. If seedlings were produced in a greenhouse, acclimatize freshly transplanted liners under 30 to 40% shade for 4 to 7 days before moving them to full sun. After that, liners can remain under full sun.

During the winter, consider providing cold protection if temperatures are expected in the 20s or lower. The effect of subfreezing temperatures on these liners, especially the root systems, is not known but you might want to err on the side of caution.



**Figure 3.** Close up of Joe-Pye weed seeds.

### Container Production

During the second week of May, prune back liners so that they are 7 to 8 inches tall. Transplant the pruned liners into one-gallon pots that contain the same well-drained, soilless nursery medium used for liner production except that the medium should be amended with a rate of controlled-release fertilizer about 40 to 50% greater than what was used for liner production. Be sure to space plants far enough apart to allow good air flow around plants. Plants that are spaced too close together will develop leaf spot (see Pest Control).

About 8 to 10 weeks after liners are potted, at least one panicle of flowers should have fully elongated flower buds that are rosy purple but not fully opened (Figure 4). At this point, Joe-Pye weed is colorful enough to sell or ship.



**Figure 4.** Joe-Pye is marketable when at least one panicle of flowers has rosy purple, elongated flower buds.

### Irrigation

Under North Florida late spring/early summer conditions plants should be irrigated with about 1/3 inch water once per day; additional irrigation will be necessary during hot, dry weather. These irrigation rates are provided as a general guideline. Modify the frequency and amounts of irrigation to suit your particular conditions. However, it is important not to overwater as that could lead to leaf spot diseases (see Pest Control).

### Pest Control

Weeds in the pots will have to be controlled manually and through good sanitation practices. There are no pre- or postemergence herbicides of which Joe-Pye weed is specifically mentioned as being tolerant.

Joe-Pye weed is susceptible to some leaf spot diseases, especially if plants are overwatered or there is poor air circulation around the plants. Leaf spot diseases we have observed are *Cercospora eupatorii* and *Pseudocercospora* spp. Powdery mildew (*Oidium* spp.) can also occur on the leaves. There are no fungicides specifically labeled for control of these diseases on *Eupatorium* species. However, there are "general use" fungicides (see Table 1) that you can use to control these diseases. Before you use a "general use" fungicide on the entire crop, treat a small number of plants with the desired fungicide and check for injury for 2 weeks after treatment. Since this process takes 2 weeks, consider evaluating

the fungicides before you begin production. This way, if you find you need the fungicide during production you will be able to use it immediately rather than waiting 2 weeks for the results of the phytotoxicity test.

We have not observed any significant insect or mite infestations.

### References

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**Table 1.** Broad clearance fungicides to use on Joe-Pye weed. For more information about using these type of fungicides on ornamentals, see IFAS Publication PDMG-V2-03, "Fungicides With Broad Clearances" by Gary Simone (<http://edis.ifas.ufl.edu/PG070>).

Disease	Common name	Trade name
Leaf spot ( <i>Cercospora</i> sp.); Powdery mildew ( <i>Oidium</i> sp.)	thiophanate methyl	Fungo 50 <sup>®</sup> WSB, 46.2 Flo; SysTec 1998 <sup>®</sup> (46.2), 85 WDG; Clearys 3336 <sup>®</sup> (50WP, 46.2F, 2G)
Leaf spot ( <i>Cercospora</i> sp.); Powdery mildew ( <i>Oidium</i> sp.)	propiconazole	Banner <sup>®</sup> Maxx 14.3 EC
Leaf spot ( <i>Cercospora</i> sp.)	azoxystrobin	Heritage <sup>®</sup> 0.5 WG
Leaf spot ( <i>Pseudocercospora</i> sp.)	copper sulfate	Phyton 27 <sup>®</sup>