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Rain Garden Plants: (*Eutrochium* spp.) - Joe-Pye Weed

Sarah A. White, Clemson University and Amy Scaroni, Clemson Extension
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Rain gardens are becoming an increasingly popular option for gardeners who want to create an aesthetically pleasing garden that manages runoff, improves water quality, and provides wildlife habitat. Rain gardens are "depression gardens" – designed and located to receive runoff from a roof, driveway, or lawn, these features work with nature to collect, filter, and infiltrate runoff, while showing off a variety of vibrant, colorful, and low-maintenance plants.

Eutrochium spp. (formerly *Eupatorium* spp. and *Eupatoriadelphus* spp.), is from the daisy (*Asteraceae*) family. These native plants are well-suited for rain gardens and provide multi-season interest, with large pink to purple flowers that can be up to 18 inches across (Figure 1). Plants bloom throughout summer and flowers fade to striking dried flower heads in fall. Their common names include Joe-Pye weed, sweet Joe-Pye, hollow-stemmed Joe-Pye, spotted Joe-Pye, and queen of the meadow. Don't let the common name fool you: this plant looks far from weedy, and could turn out to be the star of your garden.



Figure 1. Large flowered Joe-Pye weed in the garden.

History and Traditions

Joe-Pye weed was reclassified into the *Eutrochium* genus in 2004; prior to that, its genus was *Eupatorium*. Thus, much of the history associated with the name was based on leaf and flower characteristics of *Eupatorium*. The genus *Eupatorium* was named after Eupator Dionysius, King Mithridates VI of Pontus (c. 120-63 BC), who is said to have ingested small amounts of many types of poisonous plants (including species of *Eupatorium*) in order to build an immunity to poisons.

Plants within the *Eutrochium* genus are said to be named after Joe-Pye, a Native American of the Algonquin tribe who lived near the Massachusetts Bay Colony, who used decoctions (extract resulting from boiling tissues down to concentrate desired compounds) made from *E. purpureum* to cure fevers (e.g. Typhoid fever).³ Another common name for *Eutrochium* spp. is gravel root, which refers to the use of a root decoction to prevent the formation of kidney stones or to reduce the size of existing ones.⁴ It is a mainstay of A Modern-Herbal (M. Grieve) and is used in Appalachian regions to cure urinary disorders. Often, the descriptor in front of Joe-Pye refers to a specific species of *Eutrochium*; for instance, hollow-stemmed Joe-Pye refers to *E. fistulosum*, while sweet Joe-Pye weed refers to *E. purpureum*.

Table 1. Mature sizing and flower interest for *Eutrochium* spp.

Genus and species ¹	Growth Habit	Leaf Number & Arrangement	Flower Color
<i>Eutrochium dubium</i> 'Little Joe'			
<i>Eutrochium fistulosum</i>			
<i>Eutrochium maculatum</i> var. <i>maculatum</i>	2-7(9)' h x 3' w	Whorls of 4-5, purple speckled stem, flat topped flowers	Pinkish-purple
<i>Eutrochium purpureum</i>	4-7' h x 3' w	Whorls of 3-5, green stems, purplish at nodes	Purplish-pink

Benefits

Joe-Pye weed are excellent middle (i.e. dwarf cultivars – see recommended cultivar list below) to back of the border plants, that tolerate the dry conditions of rain gardens, growing to an average height of 3 to 5 (occasionally 6) feet under dried soil conditions. Joe-Pye weed planted in a garden with soil that remains moist throughout the growing season really thrive, becoming the garden show-stoppers in late summer, reaching 7 to 10 (sometimes 12)' in height and topped by large panicles of showy pink flowers for nearly 3 months (Figure 2).

The leaves of Joe-Pye weed (*E. purpureum*) have a faint vanilla scent when crushed. During spring and early summer, the foliage ranges from a mid-tone green to dark green and is rugged, yet lush in appearance. The flowers are the true feature of this plant and emerge in several layers of densely packed rounded panicles that range from 5 inches (dwarf cultivars) to 18 inches (species) in height and width. These flowers are invariably covered with pollinators and nectar sippers from July through September (Figure 3). The flowers of Joe-Pye weed attract nectar feeders including zebra swallowtail (*Protographium marcellus*), variegated fritillary (*Euptoieta claudia*), tiger swallowtail (*Papilio glaucas*), black swallowtail (*Papilio polyxenes*), skippers (family *Hesperiidae*), hummingbirds, honeybees (*Apis mellifera*), native bees, long-tongued bees, and wasps. Various parts of the plant attract caterpillars (e.g., three-lined flower moth (*Schinia trifascia*), Eupatorium borer moth (*Papaipema eupatorii*), and Clymene moth (*Haploa clymene*)).^{5,6} The mature seeds from the flower panicles are eaten by the swamp sparrow (*Melospiza georgiana*).⁶ Joe-Pye weed is relatively rabbit and deer-resistant.

Planting and Care

The native habitat of species of Joe-Pye weed range from wet meadows, moist thickets, low moist ground and wooded slopes, to drier roadside conditions.^{6,7} In typical urban landscapes, *Eutrochium* plants perform best when placed in locations with consistent moisture regimes. If planted in sites that remain dry for too long, some leaf scorch can occur. Powdery mildew, rust, and *Cercospora* or *Septoria* leaf spot are common pests of this plant, but generally aren't harmful.^{6,7}

Unless using a small cultivar, site plants near the rear of the border, along a fence line, or mix with other tall perennials or shrub species to meld the desired vegetative form and floral display with the constraints of the garden space (Figure 4). The most impressive visual displays of Joe-Pye weed are accomplished with mass plantings in naturalized or informal gardens. Joe-Pye weed has been a staple plant in European gardens for some time, and its popularity is spreading as it becomes more common in US gardens.

Joe-Pye weed benefits from being pruned to a height of around 6 to 8 inches annually, preferably in late winter or early spring before the new growth flush occurs (Figure 5). If you desire a more compact appearance in the landscape, the plants can be pruned back to between 1.5 feet and 2 feet in height in early summer (mid-May to early-June). Figure 6 shows plants that were pruned on June 1 and the image was taken on August 9. The pruned plants are blooming, and flower clusters are emerging from the leaf axils, but the flowers have not yet reached mature "show." We noticed that after pruning, to control height, the flowers on the pruned plant were smaller than those of the unpruned plant. So if a smaller height is desired, we recommend selecting a short cultivar – so you can enjoy the maximum flower display (see Table 3 for cultivar list). If the clump of Joe-Pye weed becomes too large, divide the clump in fall or early spring.

Garden Design

The season-long floral display is the main attraction of this star of the garden. Clusters of flowers are sometimes up to 18 inches tall and wide on sturdy stems that tend to remain upright in the garden, even after heavy rain events. The dark green foliage of the plant is not the main attraction for this plant, though it remains appealing throughout the growing season. Clumps or specimens of this genus work well in the landscape because of their showy flowers. Joe-Pye weed plants provide the autumn garden with upright, yet layered structure, color, and life from the variety of butterflies, moths, and pollinators that use the plant as a nectar source and habitat.⁷



Figure 2. Joe-Pye weed sizes in the garden. (A) *Eutrochium dubium* 'Little Joe' compact habit reaching 2.5 to 3 feet in height. (B) *Eutrochium maculatum* habit reaches 7 to 9 feet in height at Clemson's Sustainable Landscape Demonstration Garden (<http://www.clemson.edu/cafls/demo/about.html>)

Taller species/cultivars should be placed in the back of the border to provide vertical interest and color. Only smaller cultivars should be mixed in the middle regions of any garden. The Joe-Pye weed family is an excellent plant choice for use in rain gardens, cottage gardens, meadows, or native plant gardens, but really put on their full, magnificent display when provided with adequate moisture throughout the season in wild/naturalized areas or in marginal marshy areas. Visit the Sustainable Landscape Demonstration Garden (<http://www.clemson.edu/cafls/demo/>) at Clemson University for a great example!



Figure 3. Joe-pye weed attracts and provides habitat for multiple species of pollinators including this painted lady butterfly (*Vanessa cardui*).

The height and verticality of most Joe-Pye weed species add structure and a vibrant presence to the garden, especially in late summer/early fall when many other perennial and shrubby species are less showy. Tall *Eutrochium* spp. are ideally suited to serve as a neutral backdrop for other showy plants early in the spring and summer, while the more compact *Eutrochium* spp. can serve to integrate color throughout the landscape planting. Consider pairing Joe-Pye weed with some of the companion plants listed below.

Table 2. General information for *Eutrochium* spp.

Preferred site conditions	Design considerations - growth habit and plant interest
Light: Full sun to part shade	Growth rate: Moderate - Fast
Zones: 3 – 9	Type: Herbaceous perennial
Origin: Southeastern United States	Habit: Multi-stemmed, mounding – spreading/open clump
Moisture: Moderate	Foliage: Serrated, dark-green lanceolate leaves in whorls around stems. Purple petioles
Moisture timing: Tolerates dry soil conditions (produces smaller plants), but prefers consistently moist soils	Flower: Clusters of flowers (white, pink, purple) 6 – 18" across and tall (species dependent) from (June) July to September
Soil: Tolerates a variety of soils from acidic to calcareous dry and wet soils	Fall – winter interest: Little, dried seed-heads provide interest until plants are cut back

Companion Plants

Small trees:

- River birch (*Betula nigra*): textured, exfoliating bark, delicate appearance, sun
- Sweetbay magnolia (*Magnolia virginiana*): fragrant creamy-white flowers in late spring-early summer, red berries later summer, full sun to part shade

Shrubs:

- Glossy abelia (*Abelia x grandiflora*): evergreen, showy white or pink flowers in summer, sun
- Yaupon holly (*Ilex vomitoria*): evergreen, red berries late fall, full sun

Perennials:

- Blue mistflower (*Conoclinium coelestinum*): purplish-blue flowers held atop foliage in late summer to fall, full sun to part shade
- Ironweed (*Vernonia noveboracensis*): purple flowers in late summer, full sun
- Eastern bluestar (*Amsonia tabernaemontana*): pale blue flowers rise above medium textured foliage in spring, foliage turns yellow in fall, full sun to part shade
- Siberian iris (*Iris sibirica*): white, yellow, purple, and blue flowers in spring, full sun
- Redhot poker lily (*Kniphofia uvaria*): red, orange, or yellow flowers in late spring/early summer, full sun)
- Columbine (*Aquilegia canadensis*): yellow or red flowers in early to mid-spring, full sun to shade



Figure 4. Mixed border garden with Joe-Pye weed effectively mixed with other companion plants.

Ornamental grasses:

- Prairie Sky switchgrass (*Panicum virgatum* 'Prairie Sky'): fall flowering, full sun
- Sweetgrass or muhlygrass (*Muhlenbergia capillaris*): white or pink blooms provide fall and winter interest, full sun to part shade

Table 3. Recommended Joe-Pye (*Eurochium*) cultivars²

Species	Cultivar	Size	Color
<i>E. dubium</i>	'Baby Joe'	2-3' H x 1-2' W	Lavender to fuschia
	'Little Joe'	2-4 H x 2-4' W	Pinkish-lavender flowers, July to September. Leaf scorch if dry too long
<i>E. fistulosum</i>	'Early Riser'	7' H x 3' W	Lavender-pink flowers, June flowering
<i>E. maculatum</i>	'Atropurpureum'	7-9' H x 3' W	Purple spotted/mottled stems, leaf petioles dark purple, flowers purplish-pink
	'Gateway'	4-5' H x 2-3' W	Smoky-rose pink flowers from July to September
	'Red Dwarf'	3' H x 2' W	Purple-black stems, frilly lavender flowers beginning in July
<i>E. purpureum</i>	'Little Red'	4' H x 2.5- 3' W	Dense clusters pinkish-wine-red flowers, midsummer

‡Clemson University Extension does not promote the use of any herb or medicine without your doctor's knowledge and supervision.

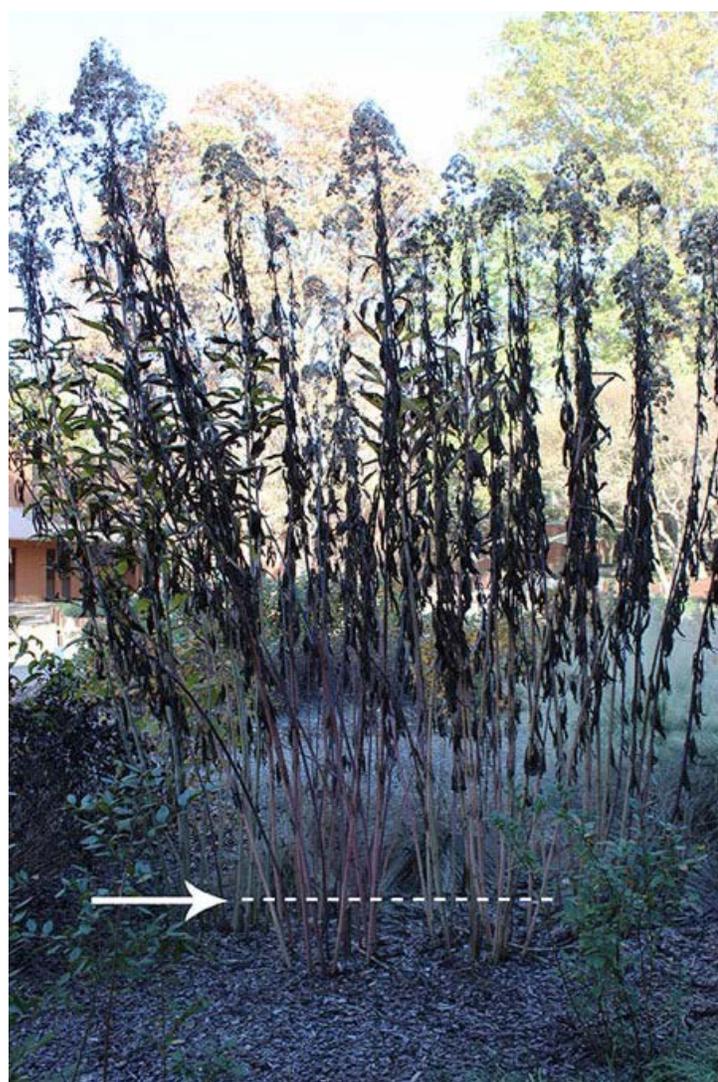


Figure 5. Joe-Pye weed stems should be cut off between 6 and 8 inches (white arrow and line indicate approximate height) from the ground in late winter, prior to emergence of new growth in spring.



Figure 6. Pruning non-dwarf cultivars of Joe-Pye weed in early to mid-June can create a more compact appearance in the landscape, but flowers may be smaller and mature later.

References

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- ⁷ Floridata. 2013. #773 *Eupatorium fistulosum*. Accessed: 9 August 2013 http://www.floridata.com/ref/e/eupa_fis.cfm

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