

Echinacea

Echinacea, also known as coneflowers, are perennial flowering plants that are hardy in Zones 3 to 9, depending on the species. *Echinacea* species are native to the eastern and central regions of the United States. The genus is named after the Greek word for hedgehog, *echinos*, because of the prickly center of the flower. Of the eight to nine species of *Echinacea*, *E. purpurea*, the purple coneflower, is most readily available.

Echinacea species have dark green lower leaves that are lance to oval shaped measuring 4- to 8- inches long, becoming smaller and narrower toward the top of the stems. They bloom in mid-summer and continue to flower sporadically until frost. The flowers measure 2 to 4 inches in diameter with a mounded, brown, central cone of disk flowers, surrounded by pink, purple, yellow or white petals or ray flowers, depending on the species. The ray flowers extend straight out from the center or tend to slightly reflex downward.



Echinacea purpurea in landscape bed
Karen Russ, ©2009 HGIC, Clemson Extension

Culture

Echinacea species have a moderate growth rate and will perform best in an area with full sun to part shade. Coneflowers prefer evenly moist, well-drained soils; however, they are drought and heat tolerant once established. They will grow well throughout South Carolina, except for the coast, due to their poor salt tolerance.

Echinacea has an upright habit and coarse texture. Coneflowers will reach up to 4 feet tall and 20 to 28 inches wide depending on species and growing conditions. Proper spacing between plants will increase air circulation between plants to keep leaves dry and help prevent the spread of diseases.

Coneflowers are not heavy feeders. In the absence of a soil test, they can be maintained with an application of 12-6-6 slow release fertilizer at a rate of 1 pound per 100 square feet in late March or early April, just before new leaves emerge.

Fall is the best time for planting *Echinacea*; for more information on planting, see fact sheet [HGIC 1153, Growing Perennials](#). Once *Echinacea* is established in the landscape, dead foliage and stems can be removed each year in the fall, winter or early spring.

Landscape Uses

Echinacea's upright, coarse texture lends itself nicely to mass plantings in naturalized areas or the rear of perennial beds. Butterflies use *Echinacea* as a nectar source, and birds enjoy the seeds. So deadheading should be delayed as seed heads are very attractive to goldfinches in the winter.

Echinacea species have strong, sturdy stems that require no staking making them popular as low maintenance perennials in the flower garden, as well as specialty cut flowers. Coneflowers have a high degree of drought resistance once established, making them a great addition to a water-wise landscape. They are also deer resistant, meaning that deer do not prefer to eat them.

Propagation & Division

It is best to propagate *Echinacea* by division or seed.

Seed: *Echinacea purpurea* is commonly started by seed, in fact, it will typically self-sow seed in the landscape. Sow seed indoors in an area with an air temperature of 65 to 70 °F. Cover seeds lightly with potting soil to prevent light from inhibiting germination. Keep the seed bed misted until germination occurs 10 to 20 days later. Seedlings should be ready to transplant 20 to 28 days after sowing. Seeds can also be started outdoors in the spring or summer, up to 2 months before frost. Keep in mind that *Echinacea* started from seed can take 2 or more years to develop into a sizable plant.

Division: *Echinacea* can be divided every 3 to 4 years to prevent overcrowding. It is best to divide perennials in the spring or fall months. For more specific information on how to divide *Echinacea* properly, see fact sheet [HGIC 1150, *Dividing Perennials*](#).

Problems

Echinacea are subject to several disease and insect pest problems such as stem rots (caused by *Rhizoctonia* spp. or *Sclerotium rolfsii*), powdery mildew, anthracnose, and aster yellows as well as damage from aphids, Japanese beetles, and eriophyid mites, but the resulting symptoms are usually mild. Cultural practices, such as proper plant spacing and well-drained soils, and proper sanitation by removing plant debris will help reduce disease problems.

Powdery mildew can be prevented by maintaining optimum plant health and not overcrowding at planting. For information on controlling powdery mildew see fact sheet [HGIC 2049, *Powdery Mildew*](#). Aster Yellows is transmitted to the plant as leafhoppers feed on the plant. Aster yellows disease

causes a witches broom in the flower head, occasional greening of the petals, stunting and possible death of the plant. Infected plants should be removed and destroyed to prevent the further spread of the disease.



Echinacea with early symptoms of Aster yellows infection
Whitney Cranshaw, Colorado State University, Bugwood.org



Echinacea with severe symptoms of Aster yellows infection
Whitney Cranshaw, Colorado State University, Bugwood.org

Aphids can be treated with insecticidal soap sprays, applied 3 times at a 5- to 7- day interval. For information on applying insecticidal soap, see fact sheet [HGIC 2771, *Insecticidal Soaps for Garden Pest Control*](#). For Japanese beetle control see fact sheet [EHS/TO-5, *Japanese Beetles*](#). Eriophyid mites are microscopic in size and live inside the flower buds where they suck nutrients from the flowers. Damage results in tufts of stunted and distorted flower parts sprouting from the coneflower. Plants that are affected by eriophyid mites should be cut back to the ground in the fall and all plant debris should be removed and destroyed.

Rabbits can also be a major problem by eating the foliage down to ground level. Hot pepper wax sprays can be used to reduce damage by making leaves less appealing to the rabbits.



Normal coneflower on left with two coneflowers on right infested with Eriophyid mites
Joe Boggs, Ohio State University Extension

Species & Cultivars

Echinacea purpurea, purple coneflower, grows up to 2 to 3½ feet tall and 1½ feet wide. Flowers reach up to 3 inches wide with drooping (reflexed) petals. In contrast, the cultivars of *E. purpurea* tend to have more horizontal flower petals. The purple coneflower is native to the central region of the United States, North Carolina, Georgia, Mississippi, Tennessee and Kentucky.

E. purpurea cultivars:

- ‘Magnus’ reaches 30 to 36 inches tall. It has a rose-pink flower measuring 4½ inches wide. It can be propagated reliably from seed.
- ‘Ruby Star’ reaches 30 to 36 inches tall, and has crimson-rose colored flowers.

- ‘White Swan’ reaches 24 to 36 inches tall, and has white petals. It can be propagated reliably by seed and makes an excellent cut flower.
- ‘Kim’s Knee High’ is a short and compact variety reaching 12 to 18 inches tall with purple-rose colored flowers.
- ‘Bravado’ produces rosy red flowers measuring 4 to 5 inches wide on a 24 to 30 inch tall plant.
- ‘Bright Star’ has rose-red flowers measuring 4 to 5 inches wide. It grows up to 36 inches tall and 24 to 36 inches wide. For reliable, consistent flower color, reproduce by division or stem cuttings.
- ‘Merlot’ has a rose-pink flower with burgundy stems.



Echinacea ‘White Swan’
Karen Russ, ©2009 HGIC, Clemson Extension

There are numerous cultivars of *Echinacea* hybrids available, each with a unique flower form or color. Many are currently under evaluation at the University of Georgia. The ‘Big Sky’ series is available in many colors. They are hybrids between *E. purpurea* and *E. paradoxa*, and may not be reliably hardy in poorly drained soils.

- ‘Big Sky™ Sunrise’ has yellow flowers.
- ‘Big Sky™ Summer Sky’ has soft peach flowers with a rose halo.
- ‘Confections™ Pink Double Delight’ has a short habit with more consistently double flowers.
- ‘Tiki Torch’ has orange petals.



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Echinacea Big Sky™ 'Summer Sky'

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Other Related Species:

Echinacea angustifolia, narrow-leaf purple coneflower, reaches 12 to 16 inches tall. It is native to the prairies of Saskatchewan and Minnesota, south to Nebraska and Texas, and is hardy from Zones 2 to 8. The flowers consist of a center disk surrounded by very narrow, strap-like ray flowers in shades of pink. The narrow-leaf purple coneflower prefers a dry soil and will not tolerate wet, poorly drained soils. It may not overwinter reliably in South Carolina.

Echinacea laevigata, smooth coneflower, was originally reported in eight states. Its current range includes Virginia, North Carolina, South Carolina and Georgia. The smooth coneflower is recognized as a federally endangered species in South Carolina. The South Carolina Botanical Garden and the USDA are currently working on a research project involving this endangered species.

Echinacea pallida, pale coneflower, is native to the prairies of Oklahoma, Kansas and Missouri, south to Louisiana, Alabama, North Carolina and Georgia and is hardy from Zones 4 to 8. The pale coneflower reaches 2 to 3 feet tall and 18 inches wide, depending on growing conditions. They produce narrow, pendulous, 3 inch long ray flowers in early to mid summer. The pale coneflower is relatively short lived, lasting only 2 to 3 years in the garden. It is listed as a threatened species in Tennessee.

Echinacea paradoxa, yellow coneflower, reaches 2½ to 3 feet tall. The name *paradoxa* comes from the fact that this purple coneflower species has yellow flowers. It is native to the prairies of the Ozark region and central and southwestern Arkansas, and is hardy in Zones 4 to 7. The yellow coneflower has drooping ray flowers that reach 3 to 6 inches wide. It is drought tolerant and does not tolerate wet soil. Due to its poor tolerance for wet soil, it may not reliably overwinter in South Carolina. Goldfinches often visit this species late in the season looking for seed. *E. paradoxa* is listed as a threatened species in Arkansas.

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