

BWSR FEATURED PLANT

NARROW-LEAF CONEFLOWER

Echinacea angustifolia

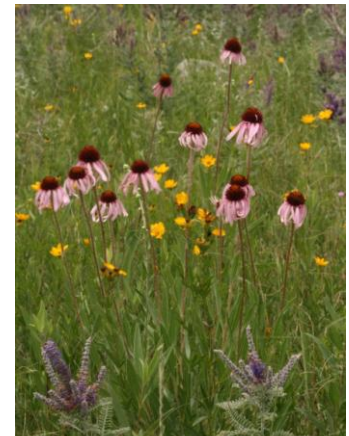


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Echinacea angustifolia is a wildflower native to the prairies of western Minnesota. Narrow-leaf coneflower has a long history of medicinal uses by Native Americans of the plains and early settlers, and is widely available as a medicinal herb today. It also provides many ecological functions in native plant communities. Factors including habitat loss, landscape fragmentation, and overharvesting have led to a significant decline in numbers of the species and renewed efforts to protect existing populations and establish the species in new restoration projects.

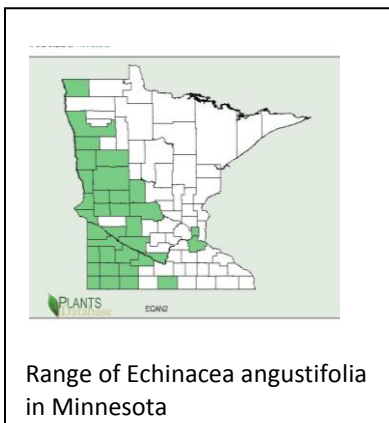
Identification

Narrow-leaf coneflower is a perennial species in the aster family that grows to 25-inches tall. It has rough, hairy stems with little branching. As the name implies, the leaves are narrow and lance shaped. They are without teeth (entire), and the leaves are alternately assembled. The flowers are lavender in color and have both ray and disk flowers (consistent with aster species). The disk flowers are in a head about 1.5-3 inches wide, encircled by drooping ray flowers. The flowers bloom from June to July. The plant has a deep woody taproot extending to 6.5 feet deep (Bare 1979), adding to its ability to withstand dry conditions and build soil organic matter.



Coneflower growing with other prairie flowers and grasses
Photo: Gretel Kiefer

Range



Range of *Echinacea angustifolia* in Minnesota

The species grows in sandy prairies in western Minnesota where it grows with other prairie species such as little bluestem, big bluestem, indiangrass, sideoats grama, blue grama, flowering spurge, compassplant, white prairie clover, rosinweed, dotted blazingstar, heath aster, and yarrow. Minnesota is on the eastern end of narrow-leaf coneflower's range. It grows west to the Rocky Mountains, south to Texas, and north to Montana and Saskatchewan. The species is planted in flower gardens and for medicinal production in several states outside of its native range. Other *Echinacea* species,



Flower head with ray and disk flowers
Photo by Gretel Kiefer

Narrow-leaf coneflower was the most widely used medicinal plant by plains Indians (Kinscher 1992).

including Pale purple coneflower (*E. pallida*) and Eastern purple coneflower (*E. purpurea*) are planted in Minnesota but are not native, with origins from states that are south and east including Wisconsin, Illinois, and Iowa.

Uses

Echinacea angustifolia has been used for a wide range of medicinal uses including as a painkiller, analgesic, antidote for poisonous bites, dressing for burns (as a wash), anticonvulsive, gastro-intestinal aid, cough and sore throats (chewed), headaches (smoke), and eyewash. The most common contemporary use of the species is as an immune-stimulant. The species also has mild antibiotic activity (Stroll et al. 1950) and has been investigated as a treatment for leukemia.

With its showy flowers the species is used in native prairie gardens. The deep taproot of the species can increase the infiltration capacity of stormwater plantings such as raingardens. The species is also important for pollinators. One study found that it was used by over 26 species of native bees (Wagenius 2010).



A western Minnesota prairie
Photo: Gretel Kiefer

Planting Recommendations

Plants can be propagated by seed or by dividing roots. Seedlings tend to grow slowly and are susceptible to drying, mold, and overwatering, so propagation and planting by division is often more predictable. Some native plant nurseries can supply the species as bare-root plants in early spring. Bare-root plants should be planted as soon as possible after delivery, it is important to prevent the drying of roots. Planting holes should be dug large enough to accommodate the entire taproot and plants should be well watered upon installation.

Echinacea angustifolia is available as seed from vendors in Minnesota and is included in restoration seed mixes. The seed requires a twelve week period of cold conditioning or cold stratification, so it is common to plant seed in the fall to promote spring germination (Cech 1995). The seed is very small (8,000 seeds/oz.) so it is important that it is planted at the soil surface or under a dusting of soil.

The species has been shown to be susceptible to inbreeding depression with decreased fitness of remnant populations due to habitat fragmentation (Wagenius et.al 2010). As a result, efforts to minimize fragmentation and create landscape connectivity are important for the long-term protection of the species.

Narrow-leaf coneflower seedlings are susceptible to environmental conditions as they slowly develop their woody taproot.

Seed can be collected from existing populations though permits may be required for harvesting on public land. Seeds are harvested when the seedheads start turning dark brown in the fall. When conditions are sufficiently dry seedheads are clipped and collected in bags. They can be placed on screens or tables in well ventilated areas until completely dry. Hammermills or compost choppers are used to break up seed heads, followed by the use of different sized screens and flannel sheets to separate the seed from the chaff. Seed must be stored in airtight plastic containers in cool, dry, and dark conditions.

Citations

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- Stoll, A.,J. Renz, &A. Brack 1950. *Antibacterial substances II. Isolation and constitution of echinacoside, glycoside from the roots of Echinacea angustifolia*. Helvetical Chim. Acta 33:1877-93
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