

Reno Germplasm Illinois Bundleflower

Desmanthus illinoensis (Michx.) MacM.

A Conservation Plant Release by USDA NRCS Manhattan Plant Materials Center, Manhattan, KS

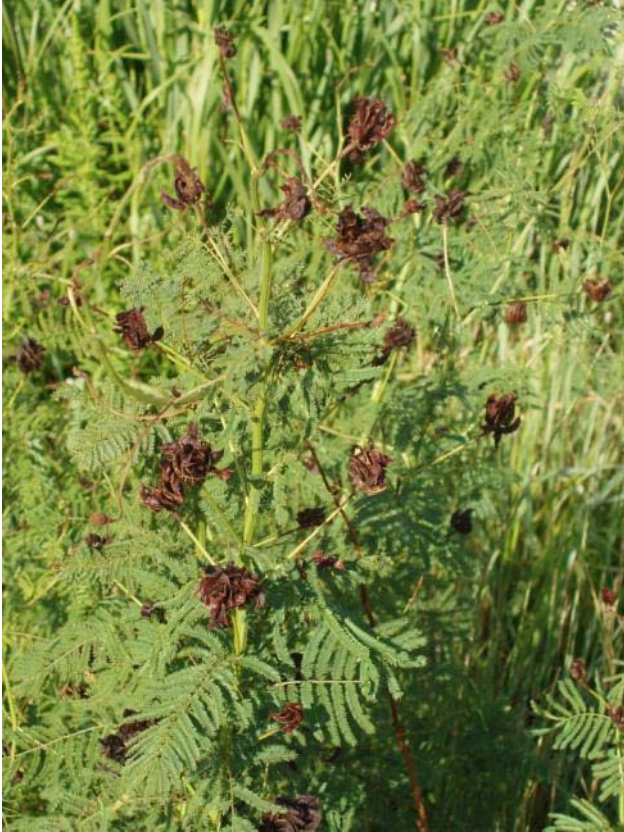


Figure 1. Illinois bundleflower plant with mature seed pods in the fall. Photograph by Alan Shadow, East Texas PMC.

Reno Germplasm Illinois bundleflower (*Desmanthus illinoensis* (Michx.) MacM. is a tested class material released in 1999 for use in rangeland, critical area, and recreational area plantings in the Central Plains Region of the country.

Description

Reno germplasm is a native, warm-season, perennial, self-pollinated legume that reproduces from seed. It is deep rooted, upright, spreading and grows to a mature height of 2 to 4 feet. Somewhat woody in the lower stem, its alternate arrangement of doubly compound leaves produce a finely dissected look that can be mistaken for prairie acacia. Growth begins in late spring with flowering occurring from June through September. The white globose flowers produce clusters of flat scythe-shaped pods which are slightly spirally twisted. The seed pods are grouped into round dark brown bundles with pods 3 to 4 times long as wide. Each pod contains 2 to 6 seeds that may burst open when mature to disperse the seeds. There are approximately 125,000 seeds per pound.

Source

Reno Germplasm Illinois bundleflower originated from seed collected in 1974 by the Kansas Game and Park Commission employees from a native stand near Lake Cheney in Reno County, Kansas. Reno Germplasm was compared to 'Sabine' a cultivar release from the Knox City PMC in Texas. Reno germplasm was evaluated at the Manhattan PMC and compared to Sabine for winter hardiness, plant persistence, and clipping response and recovery. Reno proved superior to Sabine for those particular traits at Manhattan.

Area of Adaptation and Use

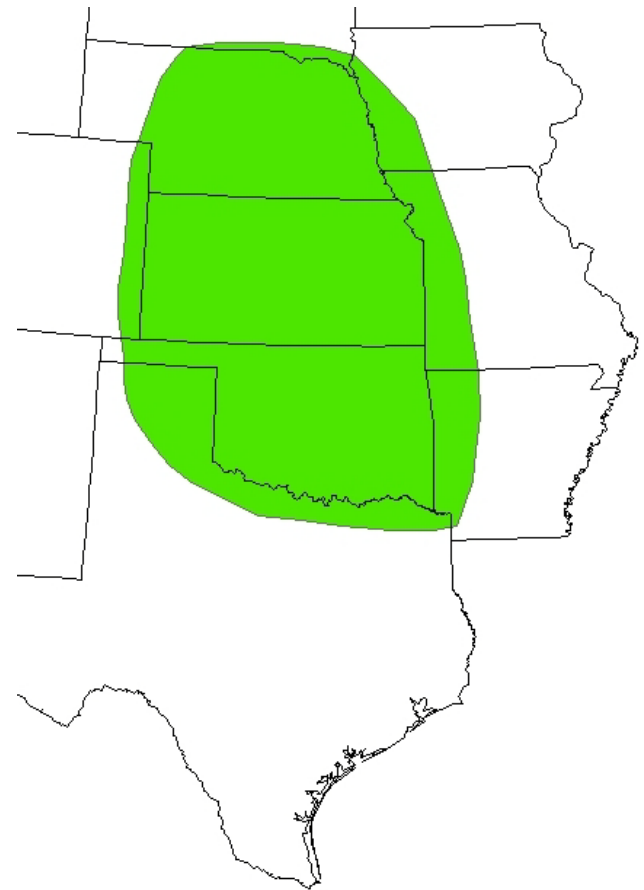


Figure 2. Area of adaptation of Reno Germplasm Illinois bundleflower.

Conservation Use:

Livestock: Illinois bundleflower is a palatable and nutritious plant that is eaten by all classes of livestock,

thus it is susceptible to over grazing in range and pasture situations.

Wildlife: Illinois bundleflower is one of the most important native legumes, because it is eaten by granivorous birds and mammals. Large grazing animals and insects readily eat its foliage.

Landscaping: Readily established along highway right-of-ways and other reclamation projects where its nitrogen fixation enhances the soil and other native plants.

Ethnobotany: Illinois bundleflower was a minor medicinal plant of the Indians. The Pawnee tribe made a wash from the boiled leaves to apply as a remedy for itching.

Establishment and Management for Conservation Plantings

When seeded alone, drill ½ to 1 inch deep depending on soil texture and moisture. A seeding rate of 2.5 pounds per acre for a pure stand and 1 pound per acre used in rangeland mixes with other grasses and forbs. The seed should be inoculated with *Desmanthus* Spec 1 type inoculum. Plantings can be made in the early spring on a weed free planting site. However, late fall or early winter (dormant) plantings may stratify seed and result in better germination and emergence of dormant or hard seed. Scarification is another technique that can improve germination of seed lots with high hard seed content. Non-hard seed usually germinates in 7 to 14 days. Seedling vigor is quite good, but full establishment may take two growing seasons. Do not graze or expect seed production until the second growing season. Once established careful grazing or harvesting with periodic rest periods from defoliation should be observed during the growing season. It is adapted to most soil types, but does not tolerate coarse sands or dense clays. It can tolerate moderate salinity and alkalinity levels and is drought tolerant. It performs best in areas that have at least 16 inches of annual rainfall. Bundleflower is sensitive to phenoxy (2,4-D) herbicides.

Ecological Considerations

Legumes like Illinois bundleflower are eaten by rabbits, rodents, grasshoppers and leafhoppers especially in its juvenile state. The diseases leaf spot and downy mildew have been reported on this plant in South Dakota.

Seed and Plant Production

Seed production of Illinois bundleflower can be accomplished in one to two years. Seed production fields can be established in 30 to 42 inch rows. Cultivation and warm-season annual grass herbicides can be used to control weeds during the establishment year. Once established the production field should be fertilized with potassium and phosphorus at the recommended rate indicated by the soil test. Irrigation water should be

applied as needed to produce a seed crop. Seed fields can be direct harvested with a combine and cleaned using a fanning mill. A five year average of seed production at Manhattan, KS yielded 908 Pure Live Seed (PLS) pounds of seed per acre with 23 percent germination and 64 percent hard seed. The average purity of the seed lots was 99.82 percent with an inert of 0.18 percent.

Availability

For conservation use: Reno germplasm is generally available from commercial seed vendors.

For seed or plant increase: The Manhattan PMC maintains Breeders and Generation 1 class seed.

For more information, contact:
Manhattan Plant Materials Center
3800 South 20th Street
Manhattan, Kansas 66502
(785) 539-8761 FAX (785) 539-2034
<http://www.plant-materials.usda.nrcs.gov>

Citation

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For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office, or Conservation District <<http://www.nrcs.usda.gov/>>, and visit the PLANTS Web site <<http://plants.usda.gov/>> or the Plant Materials Program Web site <<http://www.plant-materials.nrcs.usda.gov/>>

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