

PRAIRIE ACACIA

Acacia angustissima (P. Mill.)
Kuntze
Plant Symbol = ACAN

Contributed by: USDA NRCS James E. 'Bud' Smith
Plant Materials Center



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Alternate Names

Fern acacia, white-ball acacia, Texas acacia, prairie guajillo

Uses

Erosion control: Prairie acacia may provide ground cover vegetation for critically eroding areas to reduce soil erosion and improve water quality.

Livestock: Prairie acacia forms a symbiotic association with rhizobial bacteria, and this association fixes atmospheric nitrogen. The measured crude protein percentage of prairie acacia leaves ranges from 16 to 29. Prairie acacia can withstand frequent cutting or defoliation. Prairie acacia has been extensively investigated as a fodder shrub/tree for tropical areas. Reports describe prairie acacia as having low to moderate palatability. The leaves of prairie acacia contain tannins and non-protein amino acids. These compounds are toxic to some animals. Sudden dietary supplementation with prairie acacia fodder at high concentrations caused death in sheep. The signs of toxicity from prairie acacia are similar to those exhibited by sheep fed flat pea (*Lathyrus sylvestris*) hay. Rabbits fed prairie acacia leaves

(20% of the diet) exhibited a progressive reduction of intake and weight reduction. All rabbits consuming prairie acacia showed central nervous system disturbances. Researchers, in Stephenville, Texas, compared 15 native perennial herbaceous legumes for herbage production, crude protein percentage, and laboratory measurements of digestibility. Prairie acacia exhibited high, compared to the other species, herbage yield and crude protein percentage. The laboratory measurements suggested that prairie acacia is more digestible to livestock than other species tested

Restoration: Prairie acacia is a hardy and drought tolerant plant that is useful for revegetation of land disturbed by mining or road construction.

Wildlife: Prairie acacia is browsed by white-tail deer. It is a prolific seed producer. Quail and other birds will utilize the seed for food and the vegetation provides cover for small animals and wild birds.

Alley Cropping: Prairie acacia has potential as a nitrogen fixation tree for alley cropping systems in the Caribbean and other subtropical and tropical areas.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

Pea Family (Fabaceae). Prairie acacia is a native, perennial, warm-season, hardy, deep taproot legume. A smooth and small rounded shrub, forming colonies by means of woody rhizomes with aerial stems and that are thornless and rarely over three feet tall. The plant has an attractive and delicate fern-like foliage which closes at night and when touched. **Stems** are thin, usually unbranched, glabrate, and ridged. **Leaves** are alternate, the blade divided into usually 3-12 pairs of segments, these again divided into 6-20 pairs of tiny leaflets. **Flowers** are small and white to creamy yellow. It has 5 petals and stamens numerous, long, and protruding. Flowers numerous, congested in rounded terminal clusters on long stalks arising from upper leaf axils. **Fruit** is brownish flat seed pod 4-7 cm (1.6-2.8 in) long and 6-8 mm (0.25-0.3) wide. Plant is similar in appearance to Illinois

bundleflower, *Desmanthus illinoensis*, but the fruit and leaf structures are different.

Adaptation

Prairie acacia is native from Columbia and the Caribbean, north to Texas, Oklahoma, Kansas, Arkansas, Missouri, and Florida. Prairie acacia is a tough subshrub found in dry soils on prairie hillsides, savannahs, rock outcrops, grasslands and open shrubby vegetation areas. It grows on well-drained acidic to slightly alkaline soils. This drought tolerant perennial subshrub grows from Zones 6a-10b of the USDA Plant Hardiness Zones Map.

Establishment

A well prepared seedbed that has been plowed, harrowed, and compacted to produce a clean and firm seedbed is required. For seed production at the NRCS/James E. 'Bud' Smith Plant Materials Center near Knox City, Texas, seeds were planted in 40 inch row pattern at a depth of ¾ inch at five 5 Pure Live Seed (PLS) pound per acre. A two row cotton planter, with a junior planter attachment, for slick seeds, was used.

On established pasture a native grass drill equipped with coulters and with a small legume box will do well for planting. Another planting method if a native grass drill is not available or cannot be used due to terrain, is tracking the ground with a bulldozer then broadcasting the seed. Seeds should be inoculated before planting with a general cowpea inoculant. The proper time of planting is from March to April to assure establishment before summer. The seed of prairie acacia are small, about 198450-220500 seeds per pound. Mechanical scarification and soaking seed in cold water have produced increases in the germination percentage.

Management

Plan a grazing management system for prairie acacia growing in pasture or rangeland. Prairie acacia can decrease under misuse or heavy grazing. For an aesthetic landscape use, these plants with their round white flowers that appear in the summer into fall, are attractive to bees, butterflies, and birds.

Pests and Potential Problems

No Pest or potential problems were found on prairie acacia while growing at the NRCS/James E. 'Bud' Smith Plant Materials Center near Knox City, Texas.

Cultivars, Improved, and Selected Materials (and area of origin)

There are currently no cultivars of prairie acacia in the commercial seed or plant production.

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

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