

PRAIRIE ACACIA

Acacia angustissima (P. Mill.)

Kuntze

Plant Symbol = ACAN

Contributed by: USDA NRCS James E. "Bud" Smith
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Alternate Names

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

Uses:

Prairie acacia is recommended for use in range seedings and for wildlife food and ground cover. Prairie acacia is high in protein and readily eaten by all classes of livestock and deer. It decreases under heavy grazing and is a good indicator of range conditions (Ajilvsgi 1991). Its seeds are readily consumed by birds and rodents. It can be used in range revegetation projects and may provide ground cover vegetation for critically eroding areas to reduce soil erosion and improve water quality.

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

General: The Pea family (Fabaceae). Prairie acacia is a perennial, warm season, hardy, deep rooted legume found in dry soils on prairies and savannahs (Samuel Roberts Noble Foundation). This plant is a smooth and small rounded shrub, forming colonies by means of woody rhizomes with aerial stems that are thornless and rarely over three feet tall. The plant is an attractive and delicate fern-like foliage which closes at night and when touched. Stems are thin, usually unbranched, glabrate, and ridged. Leaves alternate, the blade divided into usually 3-12 pairs of segments, these again divided into 6-20 pairs of tiny leaflets (Ajilvsgi 1991). Flowers are small and white to creamy yellow. It has 5 petals and stamens numerous, long, and protruding (Ajilvsgi). Flowers numerous, congested in rounded terminal clusters on long stalks arising from upper leaf axils (Ajilvsgi 1991). Fruit is brownish flat seed pod 1.6 to 2.8 inches long and .25 to .3 inch wide. Plant is similar in appearance to Illinois bundleflower, *Desmanthus illinoensis*, but the fruit and leaf structures are different (Samuel Roberts Noble Foundation).

Distribution: For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site. *Acacia angustissima* is a widely distributed species in the United States. It ranges westward from Missouri to Kansas to Arizona and eastward through New Mexico, Texas, Oklahoma, Arkansas, Louisiana and Florida.

Habitat: Prairie acacia is found on various soil types including those that occur in prairies, grasslands, rocky hillsides and along edges of woodlands.

Adaptation

In Texas natural populations are most often found in Gulf Prairies and Marshes, Post Oak Savannah, Blackland Prairies, Cross Timbers and Prairies, South Texas Plains, Edwards Plateau, Rolling Plains, and Trans-Pecos (Texas Parks and Wildlife Department 2004). This plant is found growing in soil pH from neutral to slightly alkaline (Texas Parks and Wildlife Department 2004). It tolerates on loamy soils, to sandy soils to gravelly or rocky soils, but grows more abundantly in heavy, tight soils (Fort Hays State University 1986). More vigorous and more abundant growth is realized in areas receiving greater than 30 inches of precipitation. Good drought tolerance can

be expected in open communities with reduced levels of competition.

Establishment

Prairie acacia can be direct seeded or grown from transplanted seedlings (Tropical Forages). 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 Natural Resources Conservation Service (NRCS)/James E. "Bud" Smith Plant Materials Center (PMC) near Knox City, Texas, seeds were planted in 40 inch row pattern at a depth of ¾ inch at 5 Pure Live Seed (PLS) pound per acre using a two row cotton planter with a junior planter attachment. Planting prairie acacia in rangeland can be included with grasses and forbs to add diversity to rangeland mixtures. An alternative planting method, if a native grass drill is not available or cannot be used due to undulating terrain, is to track the ground with a bulldozer then broadcasting the seeds into the tracks. 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 198,450-220,500 seeds per pound (Tropical Forages). Mechanical scarification and soaking seed in cold water have shown it to increase germination. Prairie acacia seed mixed with the proper inoculant may be sown alone at a drill depth of .5 to .75 inch deep. Sow with a grass drill equipped with legume box into a prepared and clean seed bed or dead stubble for mulch may help establishment. Additional mulch and irrigation will aid establishment on critical sites, such as land disturbed by mining or road construction. Plantings made in early to mid spring time would provide the seedlings optimum moisture, while late falls or winter planting would pre-chill and stimulate germination of 'hard' legume seed.

If transplanting seedlings in small areas watering and mulching would be necessary during the first growing season for establishment in spring.

Management

Prairie acacia has the ability to spread by seed and vegetatively from underground stems, but can be controlled by disking or using the proper foliar herbicide. As an indicator of range condition, it decreases under misuse or heavy grazing (Fort Hays State University 1986). It starts growth in spring and will remain green until frost. This plant is a highly palatable legume with high crude protein. It also forms a symbiotic association with rhizobial bacteria,

which convert nitrogen, from the air to build up nitrogen in the soil.

Prairie acacia produces round, white flowers from summer to fall which attract bees, butterflies and birds. Prairie acacia has potential for aesthetic landscaping plantings. Plants flourish in full or part shade with several watering in the summer depending on where you live (Wasowski 1997).

Pests and Potential Problems and Environmental Concerns

No pest or potential problems were identified on Plains Germplasm prairie acacia, *Acacia angustissima* growing at the Natural Resources Conservation Service (NRCS)/James E. "Bud" Smith Plant Materials Center (PMC) near Knox City, Texas. There were no environmental concerns expressed on this leguminous, native prairie plant. It is compatible and competitive with perennial grasses and annual weeds.

Seed and Plant Production

The seed of prairie acacia have a very hard coat and are slightly larger than the seed of Illinois bundleflower (Fort Hays State University 1986). It could become an economically important species with a modest plant breeding effort. Seed fields can be harvested by direct combining and run through a hammer mill, if seeds are in pods and then seeds processed by a seed cleaning mill. Seed production records of the Plains Germplasm prairie acacia at the NRCS/James E. "Bud" Smith Plant Materials Center indicate that purity of harvested seed is routinely 99 percent or greater and germination numbers of 76 to 87 percent. In a 3 year harvest Plains Germplasm has demonstrated seed yield of 279.7 pounds per year at the NRCS /James E. "Bud" Smith Plant Materials Center near Knox City, Texas. There are approximately 22,600 seeds per pound for this selected species.

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

Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under "United States Government." The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture."

Plains Germplasm prairie acacia is a selection named and released by the United States Department

of Agriculture (USDA)-NRCS/James E. “Bud” Smith Plant Materials Center, near Knox City, Texas and the Texas AgriLife Research, Stephenville, TX in 2008. It is a composite of seventeen accessions collected from several native stands from north Texas to south Texas and from southeast Texas to west Texas. Plains Germplasm was selected for emergence, drought-hardiness, seedling vigor, persistence and well adapted to a range of soil types. Plains Germplasm prairie acacia has about 22,600 seeds per pound. The plant could be used for range planting mixtures, wildlife food and habitat, and revegetation of land disturbed by mining or road construction.

[Read about Civil Rights at the Natural Resources Conservation Service.](#)

References

Fort Hays State University, 1986, Prairie acacia, *Acacia angustissima*, *Pasture and Range Plants*, pp. 75

Ajilvsgi, Geyata, 1991. *Wildflowers of Texas* pp. 55

Texas Parks and Wildlife Department, 2004. *Texas Plant Information Database*, pp. 1-3

Tropical Forages, *Acacia Angustissima*, Fact Sheet, pp1-7

Wasowski A. and S. Wasowki. 1997, *Native Texas Plants - Landscaping Region By Region*, second edition, pp. 95

The Samuel Roberts Noble Foundation, *Plant Image Gallery, Prairie acacia*, pp.1-2

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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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