

## CHICKASAW PLUM

*Prunus angustifolia* Marsh.

Plant Symbol = PRAN3

Contributed by: USDA NRCS Manhattan Plant Materials Center, Manhattan, Kansas & Kansas State University, Forestry Research



Figure 1. Chisholm Germplasm Chickasaw plum in fruit.  
Photo by John M. Row

### Alternate Names

Sand plum, sandhill plum, sand hill plum, mountain cherry

### Uses

Chickasaw plum was first cultivated in 1874 (Schopmeyer, 1974).

**Ornamental:** Its white flowers are attractive and fragrant in the spring, producing a beautiful flower show. It should be part of any native landscape planting. They are maintenance free and attract wildlife (source).

**Wildlife:** Chickasaw plum is a popular plant for use in developing wildlife habitat on sandy soils. The thorny thicket is valuable for songbird and game bird nesting, loafing and roosting. Various other animals also use it for loafing, bedding and escape cover. The fruit is consumed by numerous birds and other animals (Kansas Forest Service, 2010). Northern bobwhites (*Colinus virginianus*) nest in mixed shrub communities composed predominantly of Chickasaw plum in Texas (Guthery et al., 2005). There are anecdotal reports of plum providing nesting cover for northern bobwhites, brown thrashers (*Toxostoma rufum*), northern mockingbirds (*Mimus polyglottos*) and gray catbirds (*Dumetella carolinensis*) in the southeastern U S (Dunkin and Guthery, 2010). Field sparrow (*Spizella pusilla*), Bell's vireo (*Vireo bellii*), and loggerhead shrike (*Lanius ludovicianus*) also require woody plants including Chickasaw plum for nesting

(Sauer et al., 2008) as well as painted bunting (*Passerina ciris*) (Dunkin et al., 2008). Plum is important to lesser prairie-chickens (*Tympanuchus pallidicinctus*) for resting, escape and thermal cover (Donaldson, 1969).

**Livestock:** Cattle use plum thickets to escape the summer sun and actually gain weight faster when the thickets form a usable part of their range (Gardenguides.com, 2010).

**Windbreaks:** May be used in outside row for ground level protection.

**Erosion control:** It is very effective in stabilizing blowing soil. It is also used to stabilize stream banks and gullies (Kansas Forest Service, 2010).

**Food items:** The fruit is used for making wine, jam, and jelly. The search for agricultural diversification has rekindled an interest in the domestication and utilization of native plums as a high value, specialty crop (Reid and Gast, 1993).

**Ethnobotanic:** Native Americans regularly consumed the fruit fresh or dried it for winter (Nature Hills.com, 2010).

### 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:** Chickasaw plum is a short, thickly branched shrub 1 to 3 m (3.3 to 9.8 ft) tall, often forming extensive thickets or colonies due to extensive suckering; or small tree, height at maturity 4.3 to 7.6 m (14 to 25 ft). Leaves are lanceolate to oblong lanceolate, 0.3 to 6.1 cm (0.8-2.4 in), 0.16 to 0.3 cm (0.4-0.8 in) wide, acute or short acuminate, cuneate or rounded at the base, slender, lustrous and glabrous above, strongly trough shaped with stalks that bear 2 red glands near the apex with leaf teeth finely serrate, tipped with glands or scars of these. Its numerous zigzag twigs are smooth, reddish brown and slender. Younger branches have smooth reddish brown bark with large, horizontal lenticels. Older trees have rough, scaly trunk bark. There are short, side twigs that bear flowers and end in sharp points. Open-pollinated and early blooming, March-April, the numerous off-white or yellowish white flowers with little fragrance appear before the leaves and are less than 20 mm (½ in) across; sepals green, no glands on the calyx lobes. The ripe fruits small, 10-20 mm (¼ to 1/2 in) in size, thin-skinned, red, orange-red, or yellow, not glaucous but with a slight bloom; stone small, rough, yellowish, and turgid, almost

spherical; fruiting in June-August. Some trees bear edible fruits; others have very bitter fruits. (Bailey, 1939; Barkley, 1986; Gleason, 1952; Schopmeyer, 1974)



**Figure 2.** Towards the base of a Chickasaw plum, the smooth reddish brown bark is becoming rough with age; with large, horizontal lenticels. Note side twigs that end in sharp points.  
Photo by John M. Row

#### *Distribution:*

The range of *Prunus angustifolia* is Missouri, west to Kansas, southern Nebraska, and extreme southeastern Colorado, south to extreme eastern New Mexico, to Texas and Louisiana. It is naturalized east to central Florida, north to New Jersey, western Virginia, southern Ohio, and Illinois. It was extensively naturalized and spread by Indians in prehistoric times (Little, 1979). According to Sargent (1965), the original native range was thought to be central Texas and Oklahoma. In William Bartram's travels through the southeastern U S in the late 18th Century, he wrote that "he never saw the Chickasaw plum wild in the forests but always in old deserted Indian plantations". He hypothesized that the Chickasaw Indians brought it from the Southwest beyond the Mississippi River (Bartram, 1791). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

#### *Habitat:*

Chickasaw plum is found in uplands and bottomlands in open and wooded-open edge situations (Noble Foundation, 2010). It is a major woody component of grasslands in north-central Oklahoma (Dunkin and Guthery, 2010). A shrub native to much of Kansas and Oklahoma, it is found growing naturally on sandy prairies where it is very effective in stopping blowing sand (Kansas Forest Service, 2010). It is often found growing along fence rows, roadsides, prairie streams, open areas or

thickets, woodlands, and often old home sites (Floridata.com, 2010; Stephens, 1973; Steyermark, 1963).

#### **Adaptation**

Chickasaw plum is adapted wherever sandy soils are found and performs well when planted on heavier clay-loam soils (Kansas Forest Service, 2010).

#### **Establishment**

Chickasaw plum is easy to grow in almost any soil, except strongly alkaline (Christman, 2008). It grows naturally on sandy soils, but will perform well when planted on heavier clay-loam soils (Kansas Forest Service, 2010). It does best in full sun, but grows in partial shade (Dunkin et al., 2008). One-year-old, bare-root seedlings, 18 to 24 inches tall, are used in plantings. Chickasaw plum seedlings are not as vigorous as American plum seedlings. Control of weed and grass competition during the first and second years is important in survival and early growth (Kansas Forest Service, 2010). The plums are drought tolerant once established.

#### **Management**

Protection of older stands during prescribed burns or other brush management programs would favor shrub nesting birds on grasslands (Dunkin and Guthery, 2010). Fire can set back the above ground growth of Chickasaw plum, but does not kill the plants. Protect the thickets from prescribed burning with disk strips. An advantage of the disk strips is that it stimulates the production of forbs and legumes as food sources near the thickets, and can cut the spreading roots of the sand plums to promote sprout ups thereby increasing the diameter of the thicket. Should fire run through the thicket, if it has bare ground, minimal damage occurs, otherwise expect 3-5 years of recovery time for the over story structure to be recreated. Cattle can also trample the thickets, especially newly planted ones. Rotational grazing and/or fences around the thickets should be considered (Quail Unlimited, 2007).

#### **Pests and Potential Problems**

Insects and disease may occasionally attack this species, but are not a serious problem in conservation plantings. Rabbits may chew on the bark, but new sprouts will form to replace injured stems (Kansas Forest Service, 2010). Plum curculio (*Conotrachelus nenuphar* Herbst) is the primary insect pest of Chickasaw plum. Fruit drop and fruit damage caused by this insect must be controlled if commercial plantings of plum are to be successful. Major disease problems include brown rot [*Monilinia fructicola* (Wint.) Honey] of the fruit and bacterial leaf spot [*Xanthomonas campestris* pv. *pruni* (Smith) Dye]. Reid and Gast (1993) observed that severity of the disease increased with fruit yield due to the negative influence of fruit production on vegetative growth. Little natural resistance to these diseases is reported. Chemical controls for the major pests of plum are widely available (Reid and Gast, 1993). Consult your local agricultural extension specialist for recommended products and application rates.

## Environmental Concerns

None known

## Seeds and Plant Production

Seed yield is 3.6 to 13.6 kg (8 to 30 lbs) per 45.4 kg (100 lbs) of fruit. Clean seeds per pound ranges from 770 to 1,530 with an average of 1,030. Seed should receive a 60-120 day moist cold treatment prior to spring sowing. Stratify in a sand-peat mixture with seeds thoroughly mixed with 1 to 3 times the volume of stratification medium between 2.2 and 5°C (36 and 41°F). Stratified seed should be monitored as it can germinate during the stratification period. Plant as early as possible in the spring, it is best if a high proportion of the seed has cracked stones but the seeds should not have begun radical elongation as elongated radicals can be damaged in planting. A pretreatment is not needed for fall sowing. Plant seeds 15-20 per 0.3 m<sup>2</sup> (sq. ft.) 2.5 cm (1 inch) deep. Seedlings can be outplanted as 1-0 stock (Schopmeyer, 1974).

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

Chisholm Germplasm, a Selected Class plant material, was released by USDA NRCS, Manhattan Plant Materials Center, Manhattan, KS for conservation use; Rainbow Germplasm, a native wild plum chiefly *angustifolia* derived, released by USDA NRCS, James E. Bud Plant Materials Center, Knox City, TX. Pomological varieties include Caddo Chief, found in the wild in Caddo Parish, LA., and introduced by G. W. Stoner, Shreveport, LA. (Wight, 1915).

## References

- Bailey L. H. 1939. Native American plums. The Standard Cyclopedia of Horticulture Vol. III p2717-2721.
- Barkley, T. ed. 1986. Flora of the Great Plains. 1986. Univ. Press of Kansas. Lawrence. 1392p.
- Bartram, W. 1791. Travels through North and South Carolina, Georgia, East and West Florida. In Little, E. L. Checklist of United States Trees. USDA FS Washington, D.C.
- Christman, S. 2008. *Prunus angustifolia* [http://www.floridata.com/ref/P/prun\\_ang.cfm](http://www.floridata.com/ref/P/prun_ang.cfm) [online: cited 17 August 2010]
- Donaldson, D. D. 1969. Effects on lesser prairie chickens of brush control in western Oklahoma. Dissertation, Ohio State Univ., Columbus. 73p. In Dunkin, S. W. and F. S. Guthery. Bird Nesting in Chickasaw Plum Related to Age of Plum in Oklahoma. Am. Midl. Nat. 164: 151-156.
- Dunkin, S. W. and F. S. Guthery. 2010. Bird Nesting in Chickasaw Plum Related to Age of Plum in Oklahoma. Am. Midl. Nat. 164: 151-156.
- Dunkin, S. W., F. S. Guthery, and R. E. Will. 2008. Growth of Chickasaw Plum in Oklahoma. Rangeland Ecol. Manage 61:661-665.
- Floridata.com. 2010. *Prunus angustifolia*. [http://www.floridata.com/ref/p/prun\\_ang.cfm](http://www.floridata.com/ref/p/prun_ang.cfm) [online: cited 2 July 2010]
- Gardenguides.com, 2010. About Sand Plum Trees. <http://www.gardenguides.com/79700-sand-plum-trees.html> [online: cited 2 July 2010]
- Gleason, H. A. 1952. The New Briton and Brown Illustrated Flora of the Northeastern United States and Adjacent Canada. The New York Botanical Garden. Vol. 2. Lancaster Press, Inc., Lancaster, PA.
- Guthery, F. S., A. R. Rybak, S. D. Fuhlendorf, T. L. Hiller, S. G. Smith, W. H. Puckett, Jr., and R. A. Baker. 2005. Aspects of the thermal ecology of bobwhites in north Texas. Wildlife Monographs 159:1-36.
- Kansas Forest Service. 2010. Sand Hill plum. <http://www.kansasforests.org/conservation/shrubs/sandhillplum.shtml> [online: cited 28 June 2010]
- Little, E. L. 1979. Checklist of United States Trees. USDA FS Washington, D.C.
- Nature Hills.com. 2010. Chickasaw Plum [http://www.naturehills.com/product/chickasaw\\_plum.aspx](http://www.naturehills.com/product/chickasaw_plum.aspx) [online: cited 28 June 2010]
- Noble Foundation. 2010. White-tailed deer: their foods and management in the Cross Timbers. <https://www.noble.org/Ag/Wildlife/DeerFoods/CDVersion.pdf> [online: cited 28 June 2010]
- Quail Unlimited. 2007. Sand Plum Thickets. Arbuckle Mountain Area Chapter. <http://www.arbucklequ.com/Habitat/Cover/SandPlums.asp> [online: cited 25 August 2010]
- Reid, W. and K. L. B. Gast. 1993. The potential for domestication and utilization of native plums in Kansas. P. 520-523. In J. Janick and J. E. Simon (eds.), Proc. Sec. Natl. Symp. New Crops. J. Wiley & Sons, Inc. New York.
- Sargent, C. S. 1965. Manual of the trees of North America. 2nd Ed. Vol. II. Dover Pub., Inc. New York. 934p.
- Sauer, J. R., J. E. Hines and J. Fallon. 2008. The North American Breeding Bird Survey, Results and Analysis 1966-2007. Version 5.15.2008. USGS Patuxent Wildlife Research Center, Laurel, MD.
- Schopmeyer, C.S., tech. coord. 1974. Seeds of woody plants in the United States. USDA Handbook 450. Washington D.C. 883p.
- Stephens, H. A. 1973. *Prunus angustifolia*. Woody Plants of the North Central Plains. Univ. Press of Kansas, Lawrence. 530p.
- Steyermark, J. 1963. *Flora of Missouri*. Iowa State University Press, Ames, Iowa. 1728p.
- Wight, W. F. 1915. The varieties of plums derived from Native American species. United States Department of Agriculture Bull. No. 172. Washington, D. C.

**Prepared By**

*John M. Row*, Plant Materials Specialist  
Manhattan Plant Materials Center, Manhattan, Kansas

*Wayne A. Geyer*, Professor  
Forestry Division, Kansas State University  
Manhattan, KS 66056

**Citation**

Row, J. M. and W. A. Geyer. 2010. Plant Guide for Chickasaw plum (*Prunus angustifolia*). USDA-Natural Resources Conservation Service, Manhattan Plant Materials Center, Manhattan, KS 66502.

Published October 2009

Edited:

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

PLANTS is not responsible for the content or availability of other Web sites.