

SCREWBEAN***Prosopis pubescens* Benth.**

plant symbol = PRPU

Contributed By: USDA, NRCS, National Plant Data Center & East Bay Regional Parks Botanic Garden



Charles Webber
© California Academy of Sciences
@ CalPhotos

Uses

Ethnobotanic: Various kinds of mesquite trees provided staple foods for indigenous people of southern California, the Great Basin and the Southwest and their seed pods are still highly relished today. Screwbean pods were eaten by the Maricopa, Hualapai, Pima, Cahuilla, Luiseno, Mohave, Panamint and Death Valley Shoshone, the Chemehuevi, Ute, Gosiute, and Southern Paiute groups as far east as the edge of the Colorado Plateau. The pods can be harvested at two different times, in the spring, while still green and consumed raw as snacks or in the late summer when the pods are ripe. If collected in the late summer, traditionally they were placed in bedrock mortars or tree-stump mortars and pounded to fine flour using stone pestles. The meal was set out to dry and then stored in baskets in grass- or bark-lined pits in rock-shelters or caves. Basketfuls of meal were also kept in indigenous homes and added to cooked agave or made into small cakes. Another way to prepare the pods was to cook the screwbeans in pits covered with earth and left to stand three or four days, and then spread to dry. The mass was then pounded in a mortar and the fine meal eaten as pinole.

The plant was also important medicinally. The Pima used the bark of the root of the screwbean as a dressing for wounds. There were two ways to prepare the dressing and then these concoctions were applied at different times. First, the bark was boiled and the liquid applied to the fresh wound. Second,

the bark was ground up in a mortar, dried, and again pounded into a fine meal in a metate and this powder was applied to the wound after a few days. The Pima also used a tea made from the roots of screwbean to regulate a woman's menstrual troubles. A gummy exudate sometimes found on the bark was gathered and soaked in water and the Moapa Paiute used the resulting liquid as eyewash. The large branches were used in construction such as fencing and binding for large granary baskets made by the Pima, and the Cahuilla sometimes used the smaller branches for bows. The mescal cutter, a long pole that was used by the Cahuilla to sever agave leaves was made of screwbean. The root wood is good for firewood for cooking.

Wildlife: Screwbean is an important tree to wildlife. The seeds are eaten by jackrabbits, Gambel quail, songbirds, various small mammals, and domestic livestock. Western chipmunks, ground squirrels, pocket mice, and various species of kangaroo and wood rats consume the foliage. Different birds also nest in the tree's canopy. The early spring growth also furnishes food for domestic livestock.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status, such as, state noxious status and wetland indicator values.

Description

General: Pea Family (Fabaceae). This upright, deciduous shrub or tree reaches up to 10 m in height. It has gnarled, shaggy multiple trunks and forms a round spreading crown. The ascending branches have pairs of spines that are 4-12 mm long. The compound leaves are hairy and measure 2-6 cm long, with as many as eighteen tiny leaflets per leaf. The leaflets are arranged on the two-branched prongs of a Y-shaped leaf stem. The yellow flowers have fused petals and are in a raceme, 4-8 cm. and spikelike. The dark tan fruit is tightly coiled, 3-5 cm and appears in pod clusters of 2 to 15. The pods are persistent and often exit holes can be seen on each pod, evidence that tiny bruchid beetles have deposited their nurseries inside. The tan seeds are very small, about 3 mm. The pollen of screwbean is toxic to honeybees. The plants crown-sprout after injury to the trunk or after cutting.

Distribution

For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site. This plant is uncommon in California, found mainly in the San Bernardino Mountains and the desert. It is more common in the southwestern United States in southern Nevada, southwestern Utah, southern Arizona and New Mexico, western Texas and northern Mexico in Baja California, Sonora, and Chihuahua. It is found in creek and river bottoms, sandy/gravelly washes, or ravines from 100-1300 m.

Establishment

Gather the seed pods and take the seeds out of the pods. Some seed lots may need scarification. Otherwise the seeds require no treatment. Plant the seeds in a well-drained soil in deep pots. Sprinkle soil on top of the seeds and place one-quarter inch gravel on top of the soil. The seeds should be spaced one-half inch apart and the pots placed in partial shade. The seeds germinate best at warm soil and air temperatures. Water the pots right away. Keep the pots moist if the rains are insufficient. As soon as the plants form one true leaf, transplant one plant per pot and water. Keep the pots damp. Plant each plant out in the ground the following winter when dormant in full sun and well-drained soil. Protect the plants from wildlife. Water the plants and keep them damp if the rains are insufficient. Also do some watering in summer. Continue to water throughout the life of the plant once in awhile. Mesquite should be lightly damp all summer long.

Management

Screwbean can tolerate pruning and can be shaped into a small tree with an exposed trunk or let grown naturally with the branches touching the ground.

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

This plant is available through some of the native plant nurseries throughout its range. Please check the Vendor Database, expected to be on-line through the PLANTS Web site in 2001 by clicking on Plant Materials.

References

Bean L.J. & K.S. Saubel. 1972. *Temalpakh: Cahuilla Indian knowledge and usage of plants*. Malki Museum Press, Morongo Indian Reservation, Banning, California.

Castetter, E.F. & W.H. Bell. 1942. *Pima and Papago Indian agriculture*. The University of New Mexico Press, Albuquerque, New Mexico

Dobyns, H.F. 1956. *Pre-conquest Hualapai plant food gathering*. An unpublished report to Marks and Marks, Phoenix, Arizona and Strasser, Spielberg, Fried and Frank, Washington, D.C.

Emery, D.E. 1988. *Seed propagation of native California plants*. Santa Barbara Botanic Garden, Santa Barbara, California

Fowler, C.S. 1986. *Subsistence*. Pages 64-97 IN: Handbook of North American Indians. Volume 11, Great Basin. Smithsonian Institution, Washington, D.C.

McClintock, E. 1993. *Prosopis*. Pages 641-642 IN: The Jepson Manual: Higher Plants of California. J. Hickman (ed.). University of California Press, Berkeley, California.

McMinn, H.E. 1939. *An illustrated manual of California shrubs*. University of California Press, Berkeley, California.

Mielke, J. 1993. *Native plants for southwestern landscapes*. University of Texas Press, Austin, Texas.

Nabhan, G.P. 1985. *Mesquite as mirror, mesquite as a harbor*. Pages 60-74 IN: Gathering the Desert. University of Arizona Press, Tucson, Arizona.

Phillips, J. 1987. *Southwestern landscaping with native plants*. Museum of New Mexico Press, Santa Fe, New Mexico.

Rea, A.M. 1997. *At the desert's green edge: An ethnobotany of the Gila River Pima*. University of Arizona Press, Tucson, Arizona.

Shreve, F. and I.L. Wiggins 1964. *Prosopis*. Pages 602-605 IN: Vegetation and Flora of the Sonoran Desert. Volume I. Stanford University Press, Stanford, California.

Stewart, O. 1942. *Culture element distributions 18 Ute-Southern Paiute*. University of California Anthropological Records 4:3.

Train, P., J.R. Henrichs, & W.A. Archer 1957. *Contributions toward a flora of Nevada No. 45: Medicinal uses of plants by Indian tribes of Nevada*. USDA, ARS, Beltsville, Maryland.

Prepared By & Species Coordinator

M. Kat Anderson

USDA, NRCS, National Plant Data Center
c/o Environmental Horticulture Department,
University of California, Davis, California

Wayne Roderick

Former Director of the East Bay Regional Parks
Botanic Garden, Berkeley, California

Edited: 05dec00 jsp

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

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.