

SPINELESS HORSEBRUSH

Tetradymia canescens DC.
Plant Symbol = TECA2

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Spineless horsebrush. J.S. Peterson @ USDA-NRCS PLANTS Database.

Alternate Names

Common Alternate Names: grey horsebrush, grey horsebrush

Scientific Alternate Names: *Tetradymia canescens* DC.
var. *inermis* (Rydb.) Payson

Uses

Spineless horsebrush is generally considered worthless for livestock browse and provides poor to fair cover for wildlife. Feral horses and cattle utilize it to some extent during winter after other winter feed is unavailable (Krysl et al., 1984). Palatability is rated low; however mule deer browse it moderately in winter and lightly in spring. Pronghorn antelope browse the shrub sparingly. Palatability of the plant increases during the bud stage in spring when young plant tissues are frequently browsed by sheep, domestic goats, pronghorn antelope, and cattle (Scher, 2001). It is toxic to sheep especially during the bud stage (Panter et al., 2011). Spineless horsebrush has been considered for dry landscaping because the spring flower bloom is attractive (Machado et al., 2006). Moths, bees, flies, beetles and other insects visit spineless horsebrush when it is flowering. Flowering occurs early in the growing season compared to other plants found growing in association with spineless horsebrush (Scher, 2001).

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).

Weediness

Spineless horsebrush is tolerant to fire and can invade recently burned rangeland. Resprouting and seedling establishment of spineless horsebrush after fire should be considered when planning prescribed fires on sagebrush dominated landscapes (Scher, 2001).

This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, state natural resource, or state agriculture department regarding its status and use. Weed information is also available from the PLANTS Web site at <http://plants.usda.gov/>. Please consult the Related Web Sites on the Plant Profile for this species for further information.

Ethnobotany

The Hopi of Northern Arizona used a decoction of the leaf and root of spineless horsebrush as a gynecological aid to shrink the uterus and stop discharge after birth and as an herbal tonic. The Navajo used the plant to cause onset of menstruation, as an analgesic for various aches and pains, a cold remedy to treat coughs and fever, an herbal steam in sweat bath medicine, to relieve stomach

ache, as a yellow dye for wool and in various religious ceremonies (Native American Ethnobotany Database).

Description

General: Sunflower Family (Asteraceae). Spineless horsebrush is a native, deciduous, taprooted, much-branched shrub, 2-8 dm (7.9-31.5 in) tall and usually as wide as it is tall. Leaves and flower bracts are white-tomentose (dense, white wooliness) and the plants have a gray-white color. Leaves are linear or oblanceolate 1-3 cm (0.39-1.17 in) long and 1-4mm (0.04-0.16 in) wide with a prominent midrib. Flowers are in terminal clusters and are yellow to cream-colored. The flower heads usually have 4 bracts. Stems are short, stout and silvery canescent until maturity then become glabrous. Achenes are 3-4 mm (0.12-0.16 in) long, usually densely silky with a well developed pappus. Chromosome number is $2n = 60$, seldom 90. (Whitson et al. 1996; Cronquist et al. 1994). Spineless horsebrush is commonly confused with various sagebrush and rabbitbrush species before flowering.

Distribution: Spineless horsebrush is found from Montana south into New Mexico and west to the Pacific coast and north into British Columbia, Canada (PLANTS Database). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Spineless horsebrush begins growth in mid-April, flower buds form in early to mid-June and begins flowering in mid-July in the Upper Snake River Plains of Idaho. Seeds are ripe in mid-August and leaf drop occurs in early October. Blooming occurs in late July or early August in southern California and northern Arizona (Scher, 2001).

Habitat: Spineless horsebrush is found in sagebrush (*Artemisia*), pinyon-juniper (*Pinus-Juniperus* spp.), ponderosa pine (*Pinus ponderosa*), mountain brush, mixed conifer, and quaking aspen (*Populus tremuloides*) plant communities (Scher, 2001). In Idaho, Utah, Montana and Nevada it is commonly associated with green rabbitbrush (*Chrysothamnus viscidiflorus*) and big sagebrush (*A. tridentata*). Threetip sagebrush (*A. tripartita*), rubber rabbitbrush (*Chrysothamnus nauseosus*) and Idaho fescue (*Festuca idahoensis*) are also associated with spineless horsebrush in Idaho and Montana. Needleandthread (*Hesperostipa comata*) and indian ricegrass (*Achnatherum hymenoides*) are associated species in Montana and Nevada). Other common associates include antelope bitterbrush (*Purshia tridentata*), mountain snowberry (*Symphoricarpos oreophilus*), black sagebrush (*A. nova*), bluebunch wheatgrass (*Pseudoroegneria spicata*), bottlebrush squirreltail (*Elymus elymoides*), desert peach (*Prunus andersonii*), Mormon tea (*Ephedra viridis*) and Thurber needlegrass (*Achnatherum thurberianum*). Spineless

horsebrush is considered primarily a weedy, early seral species (Scher, 2001).

Adaptation

Spineless horsebrush is adapted to dry, open places on plains, ridges and hills ranging in elevation from 1,300-9,700 feet (396-2956m). In the southern part of its range, it is found at higher elevations and in the northern areas at lower elevations. It is adapted to medium to coarse textured soils with a pH of 7 to 8 and found most commonly in gravelly or sandy loam soils with 5-12 inches (127-305mm) annual precipitation (Scher, 2001). It is not tolerant of saline conditions (PLANTS database).

Establishment

Information on the establishment of horsebrush in scientific literature is limited. The PLANTS database reports there are 120,000 seeds per pound. Some germination will occur without pretreatment but germination is greatly enhanced by pre-chilling for 4 to 6 weeks (Young and Young, 1992). Attempts using plant tissue culture to develop plants for hard-rock mine land reclamation have been unsuccessful (King et al., 2009). It is a fire resistant shrub. After a fire, the plant responds by rapid sprouting from adventitious buds on the root crown. It also reproduces abundantly from seed following fire. These responses following fire often result in dense stands of spineless horsebrush, and can result in its dominance of sagebrush-grass plant communities that are burned with a frequency of 20 to 25 years (Scher, 2001).

Management

All species of *Tetradymia* should be considered toxic. Sheep that feed on spineless horsebrush following or in conjunction with consumption of black sagebrush (*A. nova*) and then exposed to bright sunlight may develop a characteristic swelling of the lips, ears, and face, commonly referred to as "bighead". Sheep grazing spineless horsebrush in the absence of black sagebrush may still die without developing bighead but suffer from swollen, engorged liver with severe fatty changes and low grade nephritis (inflammation of nephrons) of the kidney along with hemorrhaging of the sub-skin and organ linings. Sheep may also experience abortions from consuming spineless horsebrush (Panter et al., 2011).

Most sheep losses occur during stormy periods when sheep change their grazing habits as they are trailed through areas with heavy infestations of spineless horsebrush and desirable forage is lacking. Hungry/thirsty sheep may also eat toxic amounts of spineless horsebrush after they are watered. The plant is especially dangerous during the bud stage (Panter et al., 2011). Poisoning has resulted in losses of as many as 1,000 sheep at a time (Scher, 2001). The best management advice is to avoid these conditions or situations as much as possible.

Fire exclusion on desert rangelands has tended to favor sagebrush over fire-tolerant shrubs such as spineless horsebrush. Increased wildfire frequencies due to invasion of annual grasses may favor spineless horsebrush. If management objectives are to reduce spineless horsebrush, fire treatment is not generally recommended as it may result in the species becoming dominant (Scher, 2001).

Pests and Potential Problems

There are no known pests of spineless horsebrush.

Environmental Concerns

Spineless horsebrush is a native species that can increase on areas subject to frequent wildfire. An economical method for the control of spineless horsebrush has not been developed (Panter et al., 2011; Evans and Young, 1978).

Control

Mechanical treatments must kill roots 4-6 inches deep for effective control. 2,4-D LV ester is recommended only for spot treatment to control spineless horsebrush. The recommended rate is 2.5 lb acid equivalent per acre, applied early in spring when plants are actively growing. Chemical re-treatment each year may be necessary to control this plant (Pacific Northwest Weed Management Handbook). Be sure to read and follow herbicide label directions.

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method. Trade names and control measures appear in this document only to provide specific information. USDA NRCS does not guarantee or warranty the products and control methods named, and other products may be equally effective.

Seed and Plant Production

Information on the successful establishment of spineless horsebrush is not available. Poor value for grazing, the potential for spread following fire, and its toxic properties to sheep make it undesirable in the plant production industry.

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

There are currently no commercial releases of spineless horsebrush. Wildland collections are typically not available from commercial sources. Contract collection for small quantities is possible with costs exceeding \$100 per pound.

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