

DOUGLAS' SAGEWORT

Artemisia douglasiana Bess.

Plant Symbol = ARDO3

Common Names: mugwort, western mugwort, California mugwort, Douglas' mugwort

Scientific Names: *Artemisia campestris* L. var. *douglasiana* (Besser) B. Boivin, *Artemisia vulgaris* L. subsp. *heterophylla* (Nutt.) H.M. Hall & Clem., *Artemisia vulgaris* L. var. *douglasiana* (Besser) H. St. John.

Description

General: Douglas' sagewort is an aromatic perennial forb in the sunflower family (Asteraceae) that is native to the western United States. It is rhizomatous and has many slender, 3-5 ft. tall stems. The leaf blades are 3-6 in. long, and can be as wide as 2 in. across. In color, they are green to grey-green, silvery-white underneath. In shape, they are narrowly elliptic to widely oblanceolate with 3-5 lateral lobes (Shultz, 2006,2014). The upper-surface is sparsely hairy, while the lower surface is densely hairy. The grey flowering heads are leafy-bracted panicles with short matted hairs. The disciform heads are 0.1 – 0.2 in. diameter, inconspicuous in clusters, with pistillate flowers (5-9) and disk flowers (6-25). Bloom is from mid-spring through late fall. The fruits 0.05 x 0.1in.) are grey brown.

Distribution: Douglas' sagewort is native to western North America from Washington and Idaho, through Oregon, in Nevada, through California and the Baja Peninsular of Mexico. It is found along the Pacific coast and in riparian corridors from sea level to 7,200 feet in elevation (USDA). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Habitat: Douglas' sagewort is found primarily in drainages and riparian corridors (Shultz 2006). It grows well in dry or moist shaded sites and is tolerant of a range of soil types. It may be found in meadows at higher elevations.

Adaptation

Douglas' sagewort grows on a variety of soil types in riparian habitats. It dies back over the winter and also with summer drought, the rhizomes sprout with moisture and warmer temperatures in the spring.

Uses

Wildlife: Ecological benefits of Douglas' sagewort to wildlife include seed forage, perching spots, and vegetative cover for birds, as well as nesting material for bees once the plant has senesced.

Warning

Douglas' sagewort extracts have been shown to be cytotoxic to human cells (Giordano et al., 1990). Pregnant women should not ingest mugwort, as it is an abortifacient. Douglas' sagewort contains the monoterpene thujone, a neurotoxin which in high doses causes convulsions, seizures, and even death. Because thujone is extracted by alcohols, it is strongly advised not to make mugwort tinctures (Somaweera et al. 2013). Aqueous solutions of thujone are in minute concentrations and so are probably safe for use (Adams and Garcia, 2006).



Douglas' sagewort (Mugwort) growing at the Lockeford PMC. Photo by Michal Tutka, Lockeford PMC June 2015.

Ethnobotany

Medicinal: Douglas' sagewort is highly esteemed by many California tribes for its many medicinal applications. The Miwok use the leaves to prepare a tea that is sipped to reduce swelling in any part of the body, and use it to relieve prostate problems. (McCarthy et al 2012). Leaves are rubbed on the forehead to relieve headaches (Personal observation and Train et al, 1957). It is commonly used as a remedy for poison oak rash (Duncan, 1961; McCarthy et al., 2012; Timbrook, 1990; 2007). In Argentina, the chewed leaves are used to treat peptic ulcers and external sores and studies have been conducted on other medicinal uses (Giordano et al., 1990).

Reports in the literature from the Costanoans, Pomo, and Maidu document its use as an analgesic to treat colds, fevers, and respiratory problems such as bronchitis and asthma (Bocek, 1982; Chestnut, 1902; Duncan, 1961); and for headaches and earaches (Barrett and Gifford, 1933; Bocek, 1982). Douglas' sagewort was also used as a compress for wounds, to treat sores and peptic ulcers (Heinrich et al., 1998, Timbrook, 2007) and urinary problems (Bocek, 1982). It was used regularly for women's health issues, such as treating premenstrual syndrome and dysmenorrhea (Adams and Garcia, 2006), to improve circulation after childbirth (Chestnut, 1902) and to terminate difficult pregnancies (Somaweera et al., 2013). Tongva girls bathed in tea in preparation for puberty (Incayawar, 2010).

Ceremonial: Douglas' sagewort (mugwort) is revered by indigenous tribes in California. It is used during ceremonies and for other purposes, such as to ward off spirits and ghosts, especially after the death of a family member and for repatriation ceremonies (Duncan, 1961; MacCarthy, 2012). It is often placed in several locations in the home for protection (McCarthy et al., 2012). The Paiute people used Douglas' sagewort ceremoniously as a wash when coming out of ritual dances (Reid et al., 2009). Mourning Miwok would plug their nostrils with its leaves, using the aroma to clear their heads (Barrett and Gifford, 1933).

Other uses: Douglas' sagewort has insect repellent properties. Leaves were placed in baskets and food storage containers to keep pests away. (Reid et al., 2009.). A Chumash myth indicates that leaves were used to line babies cradles (Timbrook, 2007). Leaves would be burned to stave off mosquitos (Bocek, 1982; Duncan, 1961). The Costanoans burned its branches to smoke bees from nests (Bocek, 1982).

Status

This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. It is not considered a weed in natural areas, but can occasionally become weedy in such areas as drainage ditches and low places in pastures (DiTomaso and Healy, (2007).

Please consult the PLANTS Web site (<http://plants.usda.gov/>) and your state's Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Planting Guidelines

Douglas' sagewort seeds germinate at relatively cool temperatures to coincide with fall precipitation. Direct seeding can be done throughout the late fall and winter on prepared sites at a seeding rate of 2.2 lb/acre drilled at a depth of ¼ inch, or 3 lb/acre broadcast. At Elkhorn Slough on the central California Coast field plantings were generally most successful in the early spring (ESNERR, 2001). If seeding must be done later in the spring, stratification may be of benefit (Deitschman, 1974). Establishment from transplants is also successful as one- and 2-year-old seedlings can be field-planted early in the spring, as fall transplanting is generally not successful (Deitschman 1974). Irrigation will assist with establishment for the first year or two depending upon the location. It would be essential for drier sites. Douglas' sagewort can also be effectively propagated from rhizomes, using a protocol developed for *Artemisia vulgaris*, which showed that ~75% of 2-cm long rhizome sections produced roots and shoots (Klingeman et al. 2004). Once established, Douglas' sagewort spreads easily from rhizomes and because of this, a few established plants can effectively populate a suitable site.



Left: Inflorescence of Douglas' sagewort, ©Avis Boutell

Right: Lower leaves and those of younger plants tend to be toothed or lobed. Photo by Tutka.CAPMC

Bottom: Fruit, 1.4x2.0 mm in size, ©John Macdonald

Control

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.

Seeds and Plant Production

Collection and storage: Determination of fruit ripeness can be difficult because of the small fruit size. Douglas' sagewort is ready to harvest when fruits can be easily removed from the heads by shaking and are too hard to be easily crushed with a thumbnail. Because the fruit matures so late in the season, it often has to be harvested quickly after maturity to avoid losses and storm damage. The heads are clipped, placed in paper bags to dry, then rubbed over screens to remove the chaff and stored in a dry cooler (ESNERR, 2001). For propagation, fruits are sown into plug trays filled with potting mix then lightly covered with more potting mix. The trays are misted with an automatic irrigation system. Fifteen days after germination, seedlings are transplanted into larger containers, then moved into a lath house, keeping them moist. Transplant survival averages 85% and one or two year old plants can be used for planting out (Young 2001).

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

Cultivars should be selected based on the local climate, resistance to local pests, and intended use. Consult with your local land grant university, local extension or local USDA NRCS office for recommendations on adapted cultivars for use in your area.

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