

WOOLLY MILKWEED

Asclepias vestita Hook. & Arn.

Plant Symbol = ASVE2

Alternate Names

Two subspecies have been recognized:

Asclepias vestita ssp. *vestita*

Asclepias vestita ssp. *parishii* (Jeps.) Woodson.

Description

General: Woolly milkweed is a herbaceous perennial in the *Asclepiadaceae* (Milkweed) family (Rosetti and Hoffman, 2012). Stems are clustered from the root stalk and ascending or decumbent up to 2 feet long. Leaves are persistent, opposite, elliptic or ovate, 2 to 6 inches long, and have short petioles. The leaves are a grayish-green color and hairy. Woolly milkweed is named for its dense hair cover on stems and leaves, although the plant can become glabrous and less hairy with age (Borders, 2012). The inflorescence is terminal and sessile with no peduncle. The flowers are radial with 5 petals and 5 sepals that are reflexed, and either yellow, cream, or purple in color. The filaments are fused together in a column with appendages called hoods. The hood serves as a reservoir of nectar, which flows from nectaries located in the stigmatic chambers (Wyatt and Broyles, 1994). The hoods are yellow-white with a vertical brown stripe and are generally elevated above the corolla base. An elongate projection called a horn attaches to the hood and curves back toward the filament column. Pollen is contained within sacs called pollinia. Milkweed plants are largely self-incompatible and must be cross-pollinated to produce seed. Pollination occurs when pollinia hook onto the leg of a pollinator such as a bee, when the pollinator visits another flower, the pollinia is inserted into the stigmatic chamber where pollination occurs via the stigmatic slit. Woolly milkweed flowers from approximately April to July. The fruits are 3 inch long yellowish-green pods called follicles that contain seeds approximately three-eighths of an inch in length that darken when mature. Woolly milkweed has the largest seeds of any milkweed species in California. Plants in the *Asclepiadaceae* (Milkweed) family produce a milky sap that is exuded from damaged stems or leaves. The sticky sap serves as an inducible mechanical and chemical defense against herbivory. The sap contains chemicals including alkaloids and cardenolides that can be toxic when consumed by most potential herbivores.

Distribution: Woolly milkweed is endemic to California and distributed across sunny, arid environments. The plant is adapted to dry summers and moist winter conditions. Its range extends from the Central Valley, eastward into the Mojave Desert and southward along the Transverse Ranges family (Rosetti and Hoffman, 2012). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Habitat: Woolly Milkweed is found in valley grassland, chaparral, and foothill woodland habitats frequently found in association with Valley Oak, *Quercus lobata*.

Adaptation

Woolly milkweed is adapted to sunny areas along dry plains, brushy flats, hillsides, and desert canyons at elevations from 164 to 4430 feet in areas with 7 to 31 inches of annual precipitation (Calflora, 2012). Milkweed plants tend to do well in disturbed or open areas.

Uses

The seed floss from milkweed seedpods was used in life jackets for the U.S. Navy during World War II and as a substitute for down in pillows and comforters (Knudsen and Sayler, 1992).



Figure 1: Woolly milkweed flower and leaves. Photo ©Neal Kramer, 2010@Calphotos

Wildlife: The plant is closely associated with Monarch butterflies (*Danaus plexippus*) as the larvae have an obligate feeding relationship with milkweed (Borders and Mader, 2011). Monarch butterflies only lay their eggs on the underside of milkweed leaves and no other plant species. Caterpillar larvae mature and emerge from eggs after three to five days. The caterpillars feed on milkweed leaves, which provide them with a chemical defense. The larvae ingest and sequester toxins from milkweeds including cardenolides and alkaloids exuded from stems and leaves. These toxins protect Monarch butterflies from predation as the caterpillar becomes toxic to potential predators.

Milkweed bugs, beetles, and aphids also use the plant and feed on leaves, flowers, and seeds.

Pollinators: Many species of bees and wasps, flies, butterflies and moths, and are attracted to the floral resources in milkweed flowers (Mader et al., 2011). The plant is promoted in gardens to attract pollinators.

Ethnobotany

Milkweed is used as a food and fiber source. Wappo and Sierra Miwok tribes consumed the leaves and roots of milkweed gathered in the spring by repeatedly boiling the plant in water and changing the water until it ran clear. Chumash women used sap from the stems to produce a chewing gum (Anderson, 2005). Milkweed is an important fiber source for cordage. Tribes including the Chumash, Miwok, Washoe, and Northern Paiute collected milkweed stalks once the plant died back in the fall or winter. Milkweed fiber strands are twisted together to form the cordage rope (Anderson 2005, Timbrook, 2007). This twined fiber is used to produce nets, netting bags, feather capes, deer nets, bow strings, and other items.

Warning: Milkweed may be toxic when taken internally, without sufficient preparation.

Status

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).

Management

Milkweed plants do not require much maintenance once established. The stalks naturally die back in winter. California Indians managed milkweed for use and would either harvest or burn the stalks to stimulate new growth in the plant (Anderson, 2005). Stems grow in taller and straighter after burning, which also stimulates flower and seed production.

Pests and Potential Problems

Potential pests of milkweed plants include seed bugs, milkweed longhorn beetles, and aphids.

Environmental Concerns

Milkweed contains cardenolides that can be toxic to humans and livestock alike. Of seven California milkweed species tested, woolly milkweed was found to have one of the highest mean plant cardenolide concentrations, with an average of 750 µg/0.1g dry weight (Malcolm and Brower, 1989). Animals tend to avoid eating the plant but may consume milkweeds when concentrated in overgrazed areas. See USDA Agricultural Research Service 2006 for more details. Toxic dosages can range from 0.2 to 2% body weight depending on the species of milkweed and the type of livestock. Forero et al., (2011) have summarized common signs of poisoning. Potential symptoms of milkweed poisoning for cattle and sheep include depression, diarrhea, colic, and irregular respiration. Potential symptoms of milkweed poisoning for horses include depression, trembling, and seizures. Potential symptoms for goats include depression, weakness, staggering, labored respiration, elevated temperatures, dilation of pupils, and seizures.

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

Seeds are contained within pods called follicles. Ripe follicles are darker in color and should be collected before they have split open. Seeds darken and harden when mature. Each seed of this wind-dispersed plant has fluffy hairs attached that are often called "floss." Follicles should therefore be collected carefully to avoid losing seeds. Seeds can either be planted in the ground in fall or planted in pots for the winter, although milkweeds tend to do better when planted directly in the ground.

Whole Plant Collection: Milkweed species can be propagated from cuttings. One option involves cuttings from the stems. Cut stems treated with rooting hormone should be kept continually moist after planting in either vermiculite, sand, or potting soil. Cuttings can then be transplanted 2 to 3 months later. Milkweed can also be propagated from rhizome cuttings once the plant has died back. Each cut rhizome should have a bud. Propagation generally should happen in the fall and plants should

be put in the ground early enough to allow for sufficient root growth before winter. Survival rates improve when cuttings and young plants are watered during the first year of growth.

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

Woodson (1954) recognized two subspecies. *Asclepias vestita* ssp. *vestita* with a cream corolla and distributed in dry plains and low hills of the Central Valley and central western California. *Asclepias vestita* ssp. *parishii* subspecies with a purple corolla and distributed in brushy flatlands, hillsides, and desert canyons of central western California, the Transverse Ranges, and the Mojave Desert. Woodson noted that the two populations were not quite as well defined as other subspecies with considerable intergradation that may be environmental rather than genetic. Based upon this the infraspecific taxa are not currently recognized (Rosetti and Hoffman, 2012).

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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