

COMMON WOOLLY SUNFLOWER

Eriophyllum lanatum (Pursh)

Forbes

Plant Symbol = ERLA6

Contributed by: NRCS Plant Materials Center,
Pullman, WA



Eriophyllum lanatum. Ben Legler, University of Washington Burke Herbarium

Alternate Names

Oregon sunshine, golden yarrow, yarrow leaved eriophyllum, dwarf woolly sunflower, Pursh's woolleaf

Uses

Pollinator habitat: *Eriophyllum lanatum* attracts beetles, syrphid flies, bees, moths and butterflies (Mooring 1975). Butterflies that are known to visit this plant include: orange sulfur, red admiral, comma, and skipper (Lady Bird Johnson Wildflower Center 2011). An endangered butterfly in Oregon,

Fender's Blue (*Icaricia icarioides fenderi*) relies on *E. lanatum* for a source of nectar (Schultz 2001).

Ornamental: This plant is hardy to Zone 3 and can be used in perennial borders, along pathways, and in rock gardens and embankments (Rugged Country Plants 2011). The Lady Bird Wildflower Center (2011) recommends selecting a local ecotype, planting several plants in a group, and pruning the dead branches.

Rangeland vegetation: This plant is quick to establish and can be used for revegetation and diversification of rangeland in a variety of habitats.

Ethnobotanical: People of the Miwok tribe made a poultice of the leaves of this plant and bound them to aching parts of the body; the Skagit rubbed the leaves on skin to prevent chapping; and the Chehalis used the dried flowers as a love charm (Native American Ethnobotany Database 2011).

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: Sunflower family (Asteraceae).

Eriophyllum lanatum is a native forb or subshrub, and may be an annual, biennial, or short- or long-lived perennial depending on site conditions. It has a multi-branched, erect to spreading form and grows to 10 to 60 cm (4 to 24 in) tall. Stems and leaves are covered with white hairs. Leaves are 2.5 to 7.5 cm (1 to 3 in) long and irregularly divided into narrow lobes. Flowers are solitary, on long peduncles and bloom May through July. The flower head is 4 to 6.5 cm (1.5 to 2.5 in) wide with golden yellow disk flowers and 8 to 12 yellow ray flowers, each 1.5 to 2 cm (0.6 to 0.8 in) long. Flower bracts are broad, erect and keeled. Seed is narrow, smooth, has four angles and a crown of scales or short pappus. (Burke Museum of Natural History and Culture 2011; Hitchcock and Cronquist 1973; Knopf 2001; Lady Bird Johnson Wildflower Center 2011; Mooring 2001).

This plant was first collected by Lewis and Clark along the Clearwater River near Kamiah, Idaho, on June 6, 1806 (Lewis and Clark Herbarium 2011). It was named *Actinella lanata* by Pursh and renamed *Eriophyllum lanatum* by Forbes. The genus name

Eriophyllum is from Greek “erion” which means wool and “phyllon” which means leaf. The species name *lanatum* translated from Latin is “covered with long woolly hair” (Charters 2011).

Distribution: *Eriophyllum lanatum* is common on both sides of the Cascade Mountains from British Columbia south to Washington, Oregon and California. Its range extends east to Nevada, Idaho, northwestern Utah, western Wyoming, and western Montana. The species is currently divided into 12 varieties, and among and within varieties there is a great deal of genetic and phenotypic variation (Mooring 1975).

A factor contributing to the variation is the presence of polyploids. Mooring (1975) found the *Eriophyllum lanatum* complex contains diploid, tetraploid, hexaploid and octoploid populations. Diploid populations occupy the geographical and environmental extremes of the complex, and polyploid populations occur where the ranges of the varieties overlap (Mooring 2001). Polyploidy has enabled intervarietal hybridization, and many polyploids are intermediate populations that cannot be assigned to one particular variety. California is the geographic center of *Eriophyllum lanatum*, with the largest amount of genetic diversity, and where 10 out of the 12 varieties occur (Mooring 2001). For current distribution of this species, please consult the Plant Profile page on the PLANTS Web site.

Habitat: This plant is often found growing in rocky areas along roadsides throughout its range. It is also found on coulees, bluffs, and canyons, and in dry grassland, thickets and forests (Knopf 2001; Lyons and Merilees 1995).

Adaptation

Eriophyllum lanatum is adapted to areas with dry, rocky or sandy soil which receive a minimum of 25 cm (10 in) annual precipitation at elevations from sea level to 3,050 m (10,000ft). The plant has a high drought tolerance due to its white hairs that conserve water by reflecting heat and reducing air movement across the leaf surfaces (Knopf 2001).

Establishment

Plants can be established by seed or seedlings. Seeds should be drilled into a weed-free seed bed in the fall at a rate of 3.4 kg PLS per ha (3 lbs PLS per acre) and at a depth of 0.6 to 1.25 cm (0.25 to 0.5 in). When planted in a mix, the seeding rate should be adjusted according to the proportion of the mix. The seed requires a cold and moist period of about 90 days for optimal germination (Skinner 2007).

To transplant seedlings, the seed should be planted in containers in October or November, stratified in cold and moist conditions for a period of 90 days, and

moved inside to a greenhouse. The plants should be hardened off in a cold frame for 2 to 4 weeks prior to transplanting to a prepared field site (Skinner 2007). Plants should be spaced 15 to 45 cm (6 to 18 in) apart (Rugged Country Plants 2011).

Management

Eriophyllum lanatum is a prolific seed producer and will rapidly spread to any surrounding open ground. If plant spread is not desired, flower heads should be removed prior to seed ripening.

The Forest Service J. Herbert Stone Nursery in Medford, OR, reports the biggest challenge to production of *E. lanatum* seed is weed control. They employ a variety of weed control techniques, including fumigating the soil prior to planting, cultivation, mowing, herbicides and hand weeding (Archibald 2006).

Pests and Potential Problems

Insects may significantly damage the foliage and seed (Mooring 2001).

Environmental Concerns

None.



***Eriophyllum lanatum* seeds. Bend Seed Extractory, Seeds of Success**

Seeds and Plant Production

E. lanatum is self-incompatible and therefore requires an insect or other vector for pollination (Mooring 1975). Cane (2011b) has discovered *E. lanatum* is visited and pollinated by the cavity-nesting solitary bees *Osmia montanum* and *O. californica*. These species are readily managed in standard nesting substrates for *Osmia* bees, and have been studied for decades, most recently as pollinators of balsamroot. (Cane 2005, Cane 2011a).

Most *Eriophyllum lanatum* plants will flower and produce seed in their first year of growth. Seeds ripen in July, but ripening date may vary depending on elevation. The seed pappus is reduced to short

scales, therefore the seed is not wind-borne. Seed is retained on the flower head longer than many other Asteraceae species but will shatter within a week after ripening (Skinner 2007). A brush machine or hammer mill can be used to process the seed prior to cleaning with air screen equipment (Skinner 2007; Barner 2009). A gravity table may also be used to remove the remaining unfilled seed and inert material (Barner 2009). There are about 1,782,000 seeds per kg (810,000 seeds per lb) (Lambert 2005).

Experiments at the Pullman Plant Materials Center demonstrated an extended cold moist stratification period is needed to break seed dormancy. Skinner (2007) had 0% germination with no stratification, 10% germination with 45 days stratification, and 75% germination with 90 days stratification. Seed stratified longer than 90 days in the fluctuating spring temperatures achieved 82% germination. Some seed germinated during stratification, indicating germination will occur at low temperatures. Seed stored for 1 year in controlled conditions (5C and 40% humidity) and sown without pretreatment failed to emerge (Skinner 2007). Mooring (2001) found seed viability decreased rapidly after 2 years of storage at room temperature, but some seed remained viable after 8 years.

To produce seed of *Eriophyllum lanatum*, the Forest Service J. Herbert Stone Nursery sows seedbeds in the fall at a rate necessary to achieve 130 plants per square meter (12 plants per square foot) (Archibald 2006). The seed is sown in bands 1.9 cm (0.75 in) deep, 3 cm (1.25 in) wide and 30 cm (12 in) apart with a modified Love/Oyjord® drill. Packing wheels are used to press the seed into the soil, and the seed is covered with 6 to 8 mm (0.25 to 0.33 in) of sawdust which is kept moist with irrigation until fall rains begin. Seed is harvested the following summer with a small plot combine, and the remaining plant residue is removed with a silage chopper. Seed yields have varied considerably depending on seedlot, growing season and age of the crop. A plot is typically harvested for a maximum of 5 years (Archibald 2006).

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

None, although seed and seedlings are available from several vendors.

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