Trichostema lanceolatum Benth.

Vinegarweed

Family: Lamiaceae
Range: Washington, Oregon, and throughout California, except the Great Basin and desert regions.
Habitat: Grasslands, oak woodlands, and disturbed sites such as roadsides and newly planted vineyards and orchards.
Origin: Native to California, Oregon and Washington.
Impacts: Vinegarweed is often considered a rangeland weed because it is unpalatable to livestock and populations may increase with grazing pressure. It contains aromatic volatile oils that make it unpalatable to grazing and foraging animals. It is, however, an important component of native grassland communities, particularly as a pollen source for bees and other insects.

Vinegarweed is a highly aromatic native summer annual that typically inhabits dry open disturbed places and overgrazed grasslands. Vinegarweed has soft-hairy foliage with a strong vinegar-like scent and lanceolate leaves, 0.8 to 3 inches long, with 3 veins from the base.

The bilateral purple flowers are in racemes and do not appear whorled. Flowers have a corolla tube that bends upward, 4 stamens, and a style that is much longer than the corolla and curved downward. Plants reproduce only by seed that are primarily dispersed by falling to the ground below the parent plant. Seeds probably survive for several years in the soil.

NON-CHEMICAL CONTROL

Mechanical (pulling, cutting, disking)	Hand pulling is very effective on small populations. Pulling is most effective before flowering in late spring when plants are elongated and soil is still moist. Gloves should be worn, as the plants contain a resin with a strong odor.
Cultural	Grazing is not considered an effective control option. The leaves contain volatile oils that make the plant unpalatable to grazing and foraging animals. Vinegarweed is a late season plant and does not form dense enough stands to allow for burning as a management tool.
Biological	No biological control programs have been developed for vinegarweed, as it is a desirable native species in most situations.

CHEMICAL CONTROL

The following specific use information is based on reports by researchers and land managers. Other trade names may be available, and other compounds also are labeled for this weed. Directions for use may vary between brands; see label before use. Herbicides are listed by mode of action and then alphabetically. The order of herbicide listing is not reflective of the order of efficacy or preference.

GROWTH REGULATORS	
2,4-D Several names	**Rate:** Broadcast treatment: 2 to 4 pt product/acre (0.95 to 1.9 lb a.e./acre) **Timing:** Postemergence, when plants are growing rapidly. Applications in spring provide best control. **Remarks:** This rate has been shown to give good control of other broadleaf weeds in rangeland. Good coverage is necessary. The ester formulations of 2,4-D generally are more effective than the amines for vinegarweed control.

Picloram *Tordon 22K*	**Rate:** Broadcast treatment: 1 to 2 pt product/acre (4 to 8 oz a.e./acre) plus 0.25 to 0.5% v/v surfactant. **Timing:** Postemergence, when plants are growing rapidly. Applications in spring provide best control. **Remarks:** High levels of picloram can give long-term soil activity for broadleaves. *Tordon 22K* is a federally restricted use pesticide. It is not registered for use in California.
Triclopyr *Garlon 3A, Garlon 4 Ultra, Remedy Ultra*	**Rate:** Broadcast treatment: 1 to 2 qt product/acre (1 to 2 lb a.e./acre). Spot treatment: 1 to 1.5% v/v solution *Garlon 4 Ultra* or *Remedy Ultra* and water, applied to thoroughly wet all leaves. **Timing:** Postemergence when plants are growing rapidly. Applications in spring provide best control. **Remarks:** Triclopyr is a selective herbicide for broadleaf species and will not damage desirable grasses growing nearby.
AROMATIC AMINO ACID INHIBITORS	
Glyphosate *Roundup, Accord XRT II*, and others	**Rate:** Broadcast treatment: 1 to 2 qt product (*Roundup ProMax*)/acre (1.1 to 2.25 lb a.e./acre). Spot treatment: 1.5 to 2% v/v solution *Roundup* (or other trade name) and water, applied to thoroughly wet all leaves. **Timing:** Postemergence when plants are growing rapidly. Applications in early spring provide best control. **Remarks:** Glyphosate is a nonselective systemic herbicide with no soil activity.

RECOMMENDED CITATION: DiTomaso, J.M., G.B. Kyser et al. 2013. *Weed Control in Natural Areas in the Western United States*. Weed Research and Information Center, University of California. 544 pp.