Poa bulbosa L.

Bulbous bluegrass

Family: Poaceae
Range: Most prevalent in northeastern California, but found in all other western states and nearly all states in the U.S.
Habitat: Disturbed sites, roadsides, abandoned fields, alfalfa and grass hay fields, and rangelands. Sometimes found in pastures and grain fields. Tolerates a wide range of environmental conditions but best adapted to disturbed shallow soils that are moist during winter and early spring. Typically found in areas with 12 to 40 inches annual precipitation. It is well adapted to shallow soils that only receive rain in winter and early spring, but not to continually moist areas.
Origin: Native to Asia, Europe, and northern Africa.
Impact: Bulbous bluegrass produces little biomass for grazing and competes with more desirable vegetation in range sites. It can also invade crop and hay fields.

Bulbous bluegrass is a densely tufted cool-season perennial from 6 inches to 2 ft tall. Because it grows new roots each season and has a relatively short life span, it has been described as an annual with "perennial tendencies". Stems and culms are erect. The lower stems are flattened, while the upper stems are wiry and round in cross-section. The stems are thickened and bulblike at the base, a distinguishing characteristic. Leaves are narrow (1 to 3 mm wide) and 2 to 6 inches long. The leaf blades are flat or loosely rolled and have membranous ligules about 3 mm long without auricles. The leaves are also keeled, most conspicuously near the base.

Bulbous bluegrass produces 2- to 5-inch long panicles. The flowers typically develop into leafy bulblets with a dark purple-colored base. There are 4 to 6 bulblets per spikelet. The panicle is usually dense, with a plume-like appearance. The plant senesces soon after bulblets mature, typically around early May. The bulblets develop asexually and germinate immediately without a period of dormancy. Thus, the bulblets likely do not survive long in the soil. Bulbous bluegrass reproduces primarily through asexual means in the United States, but in its native Europe it reproduces sexually by seed.

NON-CHEMICAL CONTROL

Mechanical (pulling, cutting, disking)	Hand-pulling can control bulbous bluegrass but it is difficult to remove all of the bulbs. Mowing is not considered an effective control method. Bulbous bluegrass can be effectively controlled with early-season cultivation or tillage.
Cultural	Intensive grazing for several growing seasons can reduce bulbous bluegrass infestations. Bulbous bluegrass is likely killed or top-killed by fire, but little information is available. Survival of basal bulbs and bulblets depends on fire intensity. Buried bulblets may survive fire. Effects of fire are not well known, but bulbous bluegrass is often present on burned sites. Bulbous bluegrass is not competitive in dense stands of perennial crops like alfalfa or pasture.
Biological	No biological controls are currently available for the management of bulbous bluegrass.

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.

LIPID SYNTHESIS INHIBITORS	
Clethodim *Select*, *Envoy*	**Rate:** Broadcast foliar treatment: 6 to 8 oz product (*Select*)/acre (1.5 to 2 oz a.i./acre) for seedlings. Spot treatment: 0.25% to 0.5% v/v solution **Timing:** Postemergence. Best when applications are made before plants are 6 inches tall. It is less effective if applied after a mowing. **Remarks:** Clethodim is grass-selective and safe on broadleaf species. To select for perennial grasses, apply before perennials emerge. It has no soil activity. Use a crop oil surfactant. Registered for fallow and non-crop areas, not generally for rangeland/natural areas, but has specific-use supplemental labels. Note that *Envoy* formulation is 1 lb a.i./gallon, *Select* is 2 lb a.i./gallon.
Aromatic amino acid inhibitors	
Glyphosate *Roundup*, *Accord XRT II*, and others	**Rate:** 0.33 to 1 qt product (*Roundup ProMax*)/acre (0.37 to 1.1 lb a.e./acre) **Timing:** Postemergence in early spring, to rapidly growing, non-stressed plants after most seedlings have emerged. If possible, apply before desirable perennials emerge. **Remarks:** Glyphosate is a nonselective herbicide. It has no soil activity.
BRANCHED-CHAIN AMINO ACID INHIBITORS	
Imazapic *Plateau*	**Rate:** 4 to 12 oz product/acre (1 to 3 oz a.e./acre) **Timing:** Preemergence to early postemergence from fall to early spring. **Remarks:** Long soil residual activity, mixed selectivity. Tends to favor members of the Asteraceae and some grasses. Use a spray adjuvant for postemergence applications. Effects vary depending on soil texture and organic matter. Heavy soils and high organic matter may require higher rates. Can tie up in litter; efficacy is reduced in situations where there is thick thatch on the soil surface. Not registered for use in California.
Imazapyr *Arsenal*, *Habitat*, *Chopper*, *Stalker*, *Polaris*	**Rate:** 2 to 3 pt product/acre (8 to 12 oz a.e./acre) **Timing:** Preemergence or postemergence. **Remarks:** Imazapyr has long soil residual activity. It is a nonselective herbicide.
Rimsulfuron *Matrix*	**Rate:** 2 to 4 oz product/acre (0.5 to 1 oz a.i./acre) **Timing:** Preemergence in fall to early postemergence in early spring. **Remarks:** Controls several annual grasses and broadleaves. Perennial grasses are tolerant to fall applications when established and grown under dryland conditions. Application to rapidly growing or irrigated perennial grasses may result in their injury or death. It provides soil residual control in cool climates but degrades rapidly under warm conditions. Will not control summer annual weeds when applied in fall or spring. Add a surfactant when applying postemergence.
Sulfometuron *Oust* and others	**Rate:** 1 oz product/acre (0.75 oz a.i./acre) **Timing:** Preemergence or early postemergence from fall to early spring. Most effective control is with early postemergence treatment after bluegrass seedlings have emerged. **Remarks:** Mixed selectivity, fairly safe on native perennial grasses. Good for revegetation use. Use lower rates in arid environments and higher rates in wetter areas (> 20" rainfall) and on high organic matter soils. Fairly long soil residual activity. At higher rates, this treatment will generally result in bare ground.
Sulfometuron + chlorsulfuron *Landmark XP*	**Rate:** 0.75 oz product/acre **Timing:** Preemergence in fall or after soil thaws in spring. **Remarks:** See sulfometuron.
Sulfosulfuron *Outrider*	**Rate:** 0.75 to 2 oz product/acre (0.56 to 1.5 oz a.i./acre) **Timing:** Early postemergence, fall to early spring, when desirable perennials are dormant and target plants are growing rapidly. **Remarks:** Mixed selectivity; fairly safe on perennial grasses, especially wheatgrasses. Fairly long soil residual. Treatments should include non-ionic surfactant. Sequential applications can be made (minimum of 21 days between applications) as long as the total rate does not exceed 2.66 oz product/acre per year.

PHOTOSYNTHETIC INHIBITORS	
Hexazinone *Velpar L*	**Rate:** 2 to 6 pt product/acre (0.5 to 1.5 lb a.i./acre) **Timing:** Preemergence to early postemergence. **Remarks:** Both foliar and soil activity. In soil applications, rates will vary with soil texture and soil organic matter. Best results when applied to moist soils. Hardwood trees can absorb this chemical through the roots and may be injured or killed. Do not spray near the root zone of desirable hardwood trees or shrubs. High rates of hexazinone can create bare ground, so only use high rates in spot treatments.

ECOMMENDED 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.