

This WEED REPORT does not constitute a formal recommendation. When using herbicides always read the label, and when in doubt consult your farm advisor or county agent.

This WEED REPORT is an excerpt from the book *Weed Control in Natural Areas in the Western United States* and is available wholesale through the UC Weed Research & Information Center (wric.ucdavis.edu) or retail through the Western Society of Weed Science (wsweedscience.org) or the California Invasive Species Council (cal-ipc.org).

Lolium multiflorum Lam.; Italian ryegrass
(= *L. perenne* L. ssp. *multiflorum* (Lam.) Husnot)
Lolium perenne L.; perennial ryegrass
(=*Festuca perennis* (L.) Columbus & J.P. Sm. [Jepson Manual 2012])

Italian and perennial ryegrass

Family: Poaceae

Range: Throughout the U.S., including all western states.

Habitat: Roadsides, fields, pastures, agronomic crops, orchards, and vineyards. They grow best in fertile, well-drained soils and tolerate saturated soil, but do not thrive during periods of drought.

Origin: Native to Europe. Italian ryegrass is thought to have originated as an early European agricultural cultivar of perennial ryegrass. The ryegrasses are cultivated as pasture forage and turf, and Italian ryegrass is sometimes cultivated as a cover crop.

Impact: Both ryegrasses have developed resistance to glyphosate and other herbicide classes. In coastal areas of California ryegrass is occasionally infected with the fungus that causes ryegrass staggers in livestock, which may reduce milk production in ewes after giving birth. In humid regions of North America, other fungi infecting ryegrass can cause intoxication or photosensitization in livestock. The ryegrasses can impact sensitive wildland areas, particularly vernal pools.

California Invasive Plant Council (Cal-IPC) Inventory: Moderate Invasiveness

Either species can be an annual, biennial, or short-lived perennial under the right conditions. Annual ryegrass typically does not have shoots at the base. Perennial ryegrass usually has shoots at its base when in flower. They can reach 3 ft tall and the foliage of both species is usually glabrous and glossy.

Both species have spike-like inflorescences. Italian ryegrass is usually distinguished from perennial ryegrass by having lemma awns. However, they readily hybridize with one another. The offspring are highly fertile and can intrograde with either parent, resulting in populations of plants that are difficult to categorize as either species, with a continuity of characteristics. Because of this, taxonomists often classify them as the same species (*L. perenne*). Plants reproduce by abundant seed production. Seed germination is usually during fall, but can occur year-round under favorable conditions. Most seeds fall below the parent plant. Some seeds can survive in the soil for many years, but typically the seed bank appears to be short-lived. These cool-season grasses grow most vigorously during spring and fall.

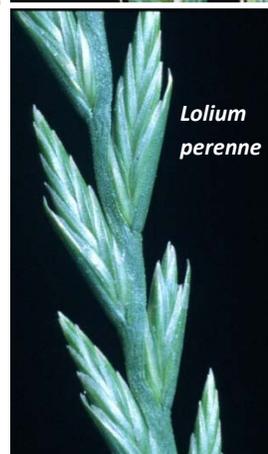
NON-CHEMICAL CONTROL

Mechanical
(pulling, cutting,
disking)

Ryegrasses tolerate trampling, mowing and grazing. However, small patches can be controlled by hand pulling before they reproduce.

Mowing is not considered an effective tool for the control of ryegrass, as it will readily recover with any soil moisture remaining.

Tillage is not usually practical for the control of ryegrasses. It is primarily effective when plants are young, but at this time the soil is usually moist and either new plants will germinate or tilled plants will recover. By the time soils dry out in late spring or early summer, ryegrass has generally produced seed or has completed its life cycle and tillage is not effective.



Cultural	<p>The ryegrasses are a preferred forage species, and grazing has not been shown to be an effective control method without causing serious damage to the ecosystem through overgrazing.</p> <p>Because the ryegrasses disperse their seed relatively early in the season, burning often selects for ryegrass and is not an effective control option.</p> <p>Ryegrass does not persist on infertile soil or where there is competition from other grasses.</p>
Biological	<p>Several fungal pathogens attack ryegrass seedheads, but there is little reduction in seed production and there is no active biological control program.</p>

CHEMICAL CONTROL

The following specific use information is based on published papers and 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	
<p>Aminocyclopyrachlor + chlorsulfuron <i>Perspective</i></p>	<p>Rate: 3 to 8 oz product/acre</p> <p>Timing: Early postemergence when weeds are germinating or actively growing.</p> <p>Remarks: Only gives suppression. <i>Perspective</i> provides broad-spectrum control of many broadleaf species. Although generally safe to grasses, it may suppress or injure certain annual and perennial grass species, including ryegrass. It is the chlorsulfuron in the mix that causes the suppression on ryegrass. Do not treat in the root zone of desirable trees and shrubs. Do not apply more than 11 oz product/acre per year. At this high rate, cool-season grasses will be damaged, including bluebunch wheatgrass. Not yet labeled for grazing lands. Add an adjuvant to the spray solution. This product is not approved for use in California and some counties of Colorado (San Luis Valley).</p>
LIPID SYNTHESIS INHIBITORS	
<p>Clethodim <i>Select, Envoy</i></p>	<p>Rate: 0.75 to 2 pt product (<i>Envoy</i>)/acre (1.5 to 4 oz a.i./acre)</p> <p>Timing: Postemergence when target plants are between 2 and 6 inches in height.</p> <p>Remarks: Clethodim is a grass-selective herbicide. Add a non-ionic surfactant (0.25%) or a crop oil concentrate (1%). Note that <i>Envoy</i> formulation is 1 lb a.i./gallon, <i>Select</i> is 2 lb a.i./gallon.</p>
<p>Fluazifop <i>Fusilade</i></p>	<p>Rate: 1 to 1.5 pt product/acre (4 to 6 oz a.e./acre)</p> <p>Timing: Postemergence when target plants are between 2 and 4 inches tall and rapidly growing.</p> <p>Remarks: Fluazifop is a grass-selective herbicide. Add either a crop oil concentrate at 0.5 to 1% v/v or a non-ionic surfactant at 0.25 to 0.5% v/v spray volume.</p>
<p>Sethoxydim <i>Poast</i></p>	<p>Rate: Broadcast foliar treatment: 1.5 pt product/acre (4.5 oz a.e./acre). Spot treatment: 1 to 1.5% v/v solution</p> <p>Timing: Postemergence when plants are less than 8 inches tall.</p> <p>Remarks: Sethoxydim is a grass-selective herbicide. Use a crop oil concentrate or methylated seed oil surfactant. Do not apply to stressed grasses.</p>
AROMATIC AMINO ACID INHIBITORS	
<p>Glyphosate <i>Roundup, Accord XRT II,</i> and others</p>	<p>Rate: For foliar broadcast treatment: 1 to 3 pt product (<i>Roundup ProMax</i>)/acre (0.56 to 1.7 lb a.e./acre). Spot treatment: 0.5% to 1% v/v solution with the rate depending on weed size.</p> <p>Timing: Early postemergence for Italian ryegrass and early head formation for perennial ryegrass.</p> <p>Remarks: Glyphosate has no soil activity and will only provide control in the year of application. It is nonselective and can result in bare ground conditions that leave the area susceptible to weed encroachment. In areas with desirable vegetation, use spot treatment. Ryegrass in many areas of the west has developed resistance to glyphosate. Add a surfactant when using a formulation where it is not already included (e.g., <i>Rodeo, Aquamaster</i>).</p>
BRANCHED-CHAIN AMINO ACID INHIBITORS	
<p>Imazapic <i>Plateau</i></p>	<p>Rate: 8 to 12 oz product/acre (2 to 3 oz a.e./acre)</p> <p>Timing: Preemergence or postemergence for control of Italian ryegrass, and postemergence for control of perennial ryegrass.</p>

	<p>Remarks: Imazapic is a broad-spectrum herbicide, but is considered most effective on annual grasses. It has some residual soil activity. Imazapic is not registered for use in California.</p>
<p>Imazapyr <i>Arsenal, Habitat, Stalker, Chopper, Polaris</i></p>	<p>Rate: 1 to 3 pt product/acre (4 to 12 oz a.e./acre)</p> <p>Timing: Preemergence or early postemergence.</p> <p>Remarks: Imazapyr is a broad-spectrum herbicide with fairly long soil residual activity.</p>
<p>Sulfometuron <i>Oust and others</i></p>	<p>Rate: 3 to 5 oz product/acre (2.25 to 3.75 oz a.i./acre)</p> <p>Timing: Preemergence or early postemergence when the weeds are germinating or actively growing.</p> <p>Remarks: Sulfometuron has mixed selectivity and is fairly safe on native perennial grasses. It is good for revegetation use. Use lower rates in arid environments and higher rates in wetter areas (> 20" rainfall) and on high organic matter soils. Sulfometuron has fairly long soil residual activity. At higher rates, this treatment will generally result in bare ground. A related herbicide, rimsulfuron (<i>Matrix</i>), has also been reported to give some control used preemergence or early postemergence.</p>
PHOTOSYNTHETIC INHIBITORS	
<p>Hexazinone <i>Velpar L</i></p>	<p>Rate: 2 to 6 pt product/acre (0.5 to 1.5 lb a.i./acre)</p> <p>Timing: Preemergence to early postemergence when weeds are growing rapidly.</p> <p>Remarks: Hexazinone is a broad-spectrum, long residual, mobile herbicide. It has 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. Use rates will also vary depending on the weed species to be controlled. Hardwood trees near application site 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.</p>

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.