USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Plant Guide

BEARDLESS WILDRYE

Leymus triticoides (Buckl.) Pilger

Plant Symbol = LETR5

Contributed by: USDA NRCS Lockeford Plant Materials Center, California & Bridger Plant Materials Center, Montana

Photo by Anna Young-Mathews, Lockeford PMC

Alternate Names
Creeping wildrye, alkali ryegrass, valley wild rye, *Elymus triticoides*

Uses
Beardless wildrye is primarily used for soil stabilization, especially along channel or river banks, and for wildlife habitat in wetland and riparian plantings. It is also recommended for use as forage and for reclamation of saline-affected, irrigated cropland and pastureland.

Soil stabilization: This grass is tolerant to periods of prolonged inundation, and lays flat during high water flow periods, thus allowing full water flow while still protecting the stream, river or canal bank. It can tolerate up to 12 inches (30 cm) of sediment deposition (USDA-NRCS, 1991).

Forage: Beardless wildrye is moderately palatable to all livestock, especially in the early spring before it becomes coarse. It tolerates trampling and recovers well following grazing (Bishop, 1996).

Wildlife: Wet meadows dominated by beardless wildrye provide high quality nesting habitat for waterfowl, shorebirds, and wetland-obligate passarines, as well as foraging areas for Canada geese and Sandhill cranes (Kilbride et al., 1997). Seasonal wetlands and dry meadows of beardless wildrye also provide habitat for reptiles, rodents and other small mammals (McAdoo et al., 2006; Olson, 2001).

Ethnobotanical: Beardless wildrye seed was used historically by Native Americans as meal, or pinole (Chesnut, 1902).

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: Grass Family (Poaceae). Beardless wildrye is a cool-season, perennial, sod-forming native grass. It grows 18 to 51 inches tall (45-130 cm) and is strongly rhizomatous (Hickman, 1993). Stems are usually smooth, but are occasionally hairy. Leaf blades are green to blue-green, stiff and flat early in the growth season, becoming rolled later in the year, and are 0.1 to 0.2 inch wide (2.5-4 mm). The spike is narrow and 2 to 7.9 inches long (5-20 cm), with typically two or more spikelets occurring per node, except for occasional single spikelets near the top. Glumes and lemmas are sharp pointed, and lemmas are generally tipped with an approximately 0.1 inch (3 mm) awn.

Identification: Beardless wildrye hybridizes with *Leymus condensatus*, *L. mollis* and *L. cinereus*. It may be confused with western wheatgrass (*Pascopyrum smithii*) due to their similar habitat and growth habit (OSU Extension Service, 1979). It can be distinguished from western wheatgrass by the double spikelets at each node (*P. smithii* usually has only one spikelet per node). Beardless wildrye also lacks the minute saw-toothed edge found on the leaves of western wheatgrass, and it is generally taller than western wheatgrass. The glumes of beardless wildrye are narrow, short and acute, with only a single vein, while those of western wheatgrass are lanceolate, long-tapering, and have several veins (Barkworth and Atkins, 1984).

Distribution: Beardless wildrye is found throughout the western United States at elevations below 9,000 ft (2,740 m), ranging from Washington to Montana and south to California and western Texas (CHC, 2010; Hickman, 1993). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation

Beardless wildrye grows in dry to moist, often saline meadows (Barkworth, 2009). It does well on sandy loams to poorly-drained soils where adequate soil moisture is present throughout the growing season, and is found in valleys, foothills, mountain flats and meadows (USDA-SCS, 1988). It is thought that beardless wildrye was one of the dominant species in the prairies and lowland oak woodlands of the Central Valley of California prior to European settlement and conversion to agriculture (Holstein, 2001).

This species tolerates neutral to strongly alkaline soils (pH 6.0 to 9.0), moderate shading, 7 to 60 inches (17-150 cm) of precipitation, and soils classified as strongly saline (greater than 15 dS/m) (PLANTS database, 2010). Winter hardiness and frost tolerance are good, though variable among seed lots.

Establishment

Vegetative planting of rhizomes ('sprigging') or plugs in mid-September to November is recommended to establish beardless wildrye on sites typically saturated or inundated in the spring or early summer, or where rapid cover is needed. Stand establishment from sprigs is slow during the first year, but once established rhizomes spread rapidly to produce better coverage and more forage than stands originating from seed. In California, plugs are often planted on 1-ft (30-cm) centers if rapid cover and erosion control is needed, or on 2 to 3-ft (60 to 90-cm) centers for large projects without erosion control problems (J. Anderson, Hedgerow Farms, personal communication, 2009).

High levels of seed dormancy due to an impermeable seed coat make stand establishment difficult (Knapp and Wiesner, 1978). Fall, dormant plantings are recommended for northern regions in order to break seed dormancy by overwintering in the soil. Seedlings have poor vigor, develop slowly, and compete poorly with weeds and other forage grasses in the first year of establishment. It is very important to minimize weed competition with properly prepared seedbeds and appropriate weed management in the year prior to seeding.

For range and pasture seedings, seeds should be drilled into a well-disked seedbed in late fall at a depth of 0 to ¼ inch (6 mm) and a rate of 7 to 10 lbs pure live seed (PLS) per acre (8-11 kg/ha) for full-rate, monotypic seedings (Bridger MTPMC, unpublished report, 1980). For restoration plantings where drilling is not possible, seeds can be broadcast at a rate of 15 PLS lbs/acre (17 kg/ha) (USDA-SCS, 1988). For areas with high erosion potential, beardless wildrye (or other) straw can be blown on the site and crimped in to keep seeds moist and in place during germination.

Because seeds can take 3 to 4 weeks to germinate, weeds should be controlled before seedlings appear. Beardless wildrye is tolerant to most standard, broad-leaf herbicides, except for Telar® (active ingredient: chlorsulfuron), which can impact seedlings if application rates are too high. Seedlings are generally more tolerant to all standard, broad-leaf herbicides once they have reached the 3- to 4-leaf stage. For seed production, Milestone® (active ingredient: aminopyralid) has been observed to decrease seed production, although plant growth was unaffected (J. Anderson, Hedgerow Farms, personal communication, 2009).

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.

Management

Once established, stands of beardless wildrye survive for many years. Beardless wildrye is highly productive for hay production when planted at a rate of 7 PLS lbs/acre (8 kg/ha) on irrigated or sub-irrigated sites. Best yields are attained on fields with adequate levels of fertility, especially available nitrogen. High concentrations of salts and/or low levels of moisture result in poorer stand establishment, lower forage yields, and slower growth rates.

Pests and Potential Problems

Beardless wildrye is susceptible to a soil-borne pathogen, "take-all" disease, caused by the root-inhabiting fungus *Ophiobolus graminis* (Stroh, 1968). A temporary solution to arrest the disease may be achieved with an application of P_2O_5 at a rate of 100 lbs/acre (112 kg/ha). More drastic follow-up

measures to renovate the site include plowing to a 6-inch (15-cm) depth, harrowing, and irrigating to promote rhizome emergence.

Beardless wildrye varies in resistance to leaf rust, stripe rust, and ergot. 'Rio' was found to have the lowest levels of rust infestation in trials of 12 California beardless wildrye accessions. In some years, infection of ergot is high, resulting in limited use of the name 'honey grass' (USDA, 1949). No ill effects are known from livestock consumption of the infected material.

Environmental Concerns
There are no known environmental concerns associated with beardless wildrye.

Seeds and Plant Production
There are approximately 172,000 seeds per pound (379,000 seeds/kg) (Bridger MTPMC, unpublished report, 1988; USDA-NRCS, 1991). The recommended seeding rate for seed production under irrigation is 3.5 PLS lbs/acre (3.9 kg/ha) at 24-inch (60 cm) row spacing (Bridger MTPMC, unpublished report, 1988). Seed generally matures in June – July, with little preharvest seed shatter. Seed yields are maximized by use of a flail-vac harvester (USDA-SCS, 1988). No special problems are presented in cleaning the seed.

Seed production in California from cultivated stands has generally been poor, possibly due to natural hybridization with other *Leymus* species, such as giant wildrye (*L. condensatus*), and resulting sterility (Holstein, 2001). Rio was selected for superior seed set, with production averaging 300 lbs/acre (336 kg/ha) (USDA-NRCS, 1991).

Cultivars, Improved, and Selected Materials (and area of origin)
'Rio' was released in 1991 by the Lockeford Plant Materials Center, CA in cooperation with the California Agricultural Experiment Station, UC Davis. It was collected in 1973 from a native stand in Stratford, Kings County, CA. The collection site is at an elevation of 230 ft (70 m) in climate zone 8 in the San Joaquin Valley, where average annual precipitation ranges from 5 to 7 inches (13-18 cm). Seed and rhizomes were harvested from test plots at the Lockeford PMC and used for testing throughout the Mediterranean climate in California, in Major Land Resource Areas (MLRAs) 4, 14, 15, 17, 18, 19 and 20. Rio demonstrated superior seed viability and initial sod establishment in comparison with 12 other California native collections (USDA-NRCS, 1991).

'Shoshone' beardless wildrye was released in 1980 through a cooperative agreement among the Bridger, MT PMC and the agricultural experiment stations of Montana and Wyoming. After its release, however, Shoshone was determined to be the Eurasian species *Leymus multicaulis*, manystem wildrye (Asay and Jensen, 1996). Please see the Manystem Wildrye Plant Guide for more information on Shoshone.

Several source identified germplasms of beardless wildrye are commercially available.


Rio in grassed waterway planting at CAPMC, 2010.

Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under United States Government. The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture."

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