

A Conservation Plant Released by the Natural Resources Conservation Service  
Lockeford Plant Materials Center, Lockeford, CA

# 'Rio'

## Beardless wildrye

*Leymus triticoides* Buckley



'Rio' beardless wildrye (*Leymus triticoides*) is a cultivar released in 1991 by the California Plant Materials Center in Lockeford, CA in cooperation with the California Agricultural Experiment Station. ©Lockeford Plant Materials Center.

### Description

'Rio' is a native, cool-season, perennial grass with vigorous rhizomes. Plants grow to 3.5 ft tall with numerous dark green leaves, which form distinct angles from the stem. The flowering spikes are 3 – 8 inches long with typically two or more spikelets occurring per node. Native populations of beardless wildrye seed typically have low levels of viability and germination rates of 5 – 10% while germination rates of 'Rio' seed are reported as 60%. Once "Rio" is established it spreads through vigorous rhizome growth.

### Source

'Rio' beardless wildrye was found and collected from a native stand in September of 1973 by C. Finch and B. Eaton, in Stratford, Kings County, California. Seed and rhizomes were harvested from test plots at the Lockeford Plant Materials Center and used for testing at 18 locations throughout the Mediterranean climate in California. It demonstrated superior seed viability and initial sod establishment in comparison with 12 other California native collections.

### Conservation 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:* 'Rio's rhizomatous growth habit and deep root system makes it especially effective for controlling erosion, especially on stream and channel banks. 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.

*Forage:* 'Rio' Beardless wildrye is moderately palatable to all livestock, especially in the spring before it becomes coarse. At higher elevations or with adequate moisture it remains green and provides good forage for longer. It tolerates trampling and recovers well following grazing. The species is an important forage source east of the Sierra Nevada in high mountain meadows that become dry in the summer because it stays green well into the summer months. In California's Central Valley it becomes dormant early and is less palatable to livestock than other annual grasses.

*Wildlife:* Wet meadows dominated by beardless wildrye provide high quality nesting habitat for waterfowl, shorebirds, and other wetland loving birds, as well as foraging areas for Canada geese and Sandhill cranes. Seasonal wetlands and dry meadows of beardless wildrye also provide habitat for reptiles, rodents and other small mammals.

### Area of Adaptation and Use

'Rio' beardless wildrye was released and tested in Lockeford, California. It is adapted to California's Mediterranean climate, specifically; Major Land Resource Area (MLRA) zones 4, 14, 15, 17, 18, 19 and 20. As a cool season grass it is adapted and will survive drought conditions over the summer. Although 'Rio' prefers heavier soils, it will perform well on sandy loams and loam soils. The species tolerates soils with high saline-sodic content.

### Establishment and Management for Conservation Plantings

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 some stands originating from seed. In California, plugs are often planted on 1-ft centers if rapid cover and erosion

control is needed, or on 2 to 3-ft centers for large projects without erosion control problems.

For conservation plantings from seed; fall plantings are recommended as 'Rio' is a cool season grass. Seedlings develop slowly, and compete poorly with weeds and especially annual cool season grasses in the first year of establishment. It is very important to minimize weed competition with a properly prepared seedbed and appropriate weed management in the year prior to seeding. Irrigation is necessary during the summer months until the grass is established. Weeding will need to be done until beardless wild rye becomes established. Once established and with adequate moisture, rhizomal spread of "Rio" is reliable and vigorous. Plot widths, as increased by rhizomal activity, can expect a generous increase annually when not restricted.

### Ecological Considerations

The fungal pathogens, stripe, rust and ergot can all affect beardless wildrye. In trials at the Lockeford Plant Materials Center 'Rio' levels were lowest for rust infestation compared to 12 California beardless wild rye accessions.

Beardless wildrye is susceptible to a soil-borne pathogen, "take-all" disease, caused by the root-inhabiting fungus *Ophiobolus graminis*, sites where this fungus is known to be prevalent should be avoided. Please contact your local NRCS Field Office, Cooperative Extension Service Office, or state natural resource or agriculture department regarding its status and use in your area.



Spikelet of 'Rio' beardless wildrye at anthesis. ©Lockeford Plant Materials Center.

### Seed and Plant Production

For seed production, 'Rio' should be planted in 30 inch rows at a rate of 3.5 lb per acre onto a clean firm seed bed. Irrigation is required during the first year for

establishment. The seedlings grow slowly initially so control of weeds is critical while the crop becomes established. Fertilize annually for continual seed production, additional irrigation may be required. Subsoil tillage between rows prior to the start of growth in the fall to promote seed production rather than rhizome growth. Seed will mature June through July. 'Rio' exhibits little pre-harvest seed shattering and the most effective form of harvesting is with a combine once the seed is mature. There are around 385,000 seeds 175,000 seeds per pound with production averaging 300 lbs/acre.

Rhizomes should be harvested in fall for planting.

### Availability

*For conservation use:* 'Rio' *Leymus triticoides* is available from non-specialized growers.

*For seed or plant increase:* Foundation seed is maintained by the USDA-NRCS Plant Material Center in Lockeford, California and available to interested parties for increase purposes. Long-term preservation of seed is stored at the National Plant Germplasm System (NPGS).

*For more information, contact:*  
USDA-NRCS

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For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office, or Conservation District <<http://www.nrcs.usda.gov/>>, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://www.plant-materials.nrcs.usda.gov>>

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