

PLANT MATERIALS TECHNICAL NOTE

MANYSTEM WILDRYE *Leymus multicaulis*

An Introduced Grass for Conservation Use in the Northern Great Plains and Rocky Mountains

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Figure 1. 'Shoshone' manystem wildrye seed production field at the Bridger Plant Materials Center.

General Description

'Shoshone' was released in 1980 as a native beardless wildrye (*Leymus triticoides*) by the Bridger Plant Materials Center (PMC) in cooperation with the agricultural experiment stations of Montana State University and the University of Wyoming. After its release, however, Shoshone was determined to be *Leymus multicaulis*, manystem wildrye. In its native range in Eurasia, manystem wildrye is found in alkaline meadows and saline soils. It makes excellent cover and has high forage yields. Plants spread by underground stems and by seed, sometimes forming distinct clumps. Flowering culms can reach 19 to 32 inches tall. Leaf blades are grayish-green, stiff and flat early in the growth season, becoming rolled later in the year.

Adaptation or Range

Manystem wildrye is adapted to wet, saline meadows, where rainfall exceeds 9 to 14 inches, or where wet, saline-alkaline sub-irrigated sites exist. Manystem wildrye does well on moderately-coarse/sandy to poorly-drained soils, and ranges from uplands and slopes to bottomlands. This

species tolerates neutral to strongly alkaline soils (pH 6.6 to 9.0) and soils classified as strongly saline (greater than 16 dS/m). Winter hardiness and frost tolerance are good, though variable among seed lots. Manystem wildrye is moderately shade tolerant.

Conservation Uses

Manystem wildrye is primarily used for reclamation of wet, saline soils. It can be used on both saline-affected irrigated cropland and pastureland, and saline seep discharge areas on dry cropland. Manystem wildrye is used for livestock forage, stabilization, and wildlife cover plantings. It is palatable to all classes of wildlife.



Figure 2. Manystem wildrye seed head.

Ease of Establishment

Manystem wildrye is moderately easy to grow from seed when dormant-planted in the fall. It is slow growing and requires one to two years to establish, both from seed or vegetative planting of rhizomes ('sprigging').

Seed and Vegetative Planting Rates

The recommended seeding rate for a full stand is 6 pounds pure live seed (PLS) per acre. There are approximately 4.2 PLS per square foot at 1 pound PLS per acre; for commercial seed growers, it is approximately equivalent to a full seeding rate for a 24-inch row spacing of 3 pounds PLS per acre (25 seeds per row-foot). One pound contains approximately 181,000 PLS. It is not recommended for use in a seed mix. Sprigging is recommended at a rate of 40 bushels per acre.

Stand Establishment

Prepare a firm, weed-free seed bed. For drill seeding, calibrate the drill to deliver 6 pounds PLS per acre using 12-inch row spacing at a depth no greater than ½-inch. Manystem wildrye requires fall, dormant planting to overcome seed dormancy. Spring-planted seed must be mechanically scarified to break seed coat imposed dormancy. Sprigging in mid-September to November is recommended for establishment on soils too saline to be planted with seed, on sites typically saturated or under standing water 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.



Figure 3. Solid stand of Shoshone manystem wildrye.

Limitations

Manystem wildrye has been found to be susceptible to a soil-borne pathogen, “take-all” disease, caused by the root-inhabiting fungus *Ophiobolus graminis*. An application of 100 pounds per acre of phosphorus and potassium fertilizer may temporarily arrest the disease. More drastic follow-up measures to renovate the site include plowing to a 6-inch depth, harrowing, and irrigating to promote rhizome emergence. Manystem wildrye varies in resistance to leaf rust, stripe rust, and ergot. No ill effects are known from livestock consumption of the infected material. Manystem wildrye is known to produce fertile hybrids with beardless wildrye (*Leymus triticoides*). Seed production in these species is poor so hybrid offspring should not have a competitive advantage in native plant communities.

Releases

Shoshone manystem wildrye was released by the Bridger Plant Materials Center. The original collection was made in 1958 from the fairgrounds at Riverton, Wyoming, possibly from a seeded stand established in the 1940s from an unknown source.

Additional Information

Seeding Rates and Recommended Cultivars. USDA NRCS Plant Materials Technical Note Number MT-46. Available at <http://www.mt.nrcs.usda.gov/technical/ecs/plants/technotes/pmtechnoteMT46.html>.

Manystem Wildrye Plant Fact Sheet and Plant Guide available at <http://plants.usda.gov>.

Shoshone Manystem Wildrye Release Brochure; pending electronic availability at <http://plants.usda.gov>.