

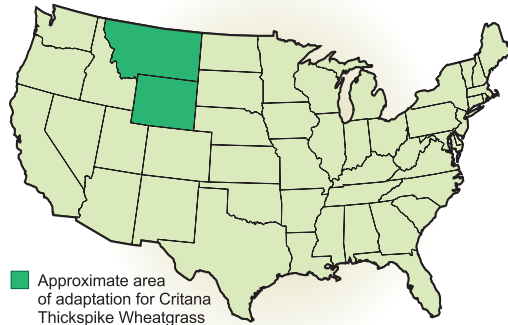
Critana Thickspike Wheatgrass

Scientific Name

Elymus lanceolatus (Scribn. & J.G. Sm.) Gould ssp. *lanceolatus*

Common Name

Thickspike wheatgrass



It was selected from among sixty accessions of thickspike wheatgrass collected in Montana and Wyoming. Direct increase of the original collection constitutes the variety. The experimental designations were M-286 and P-15581.

Selection Attributes

Critana is drought tolerant and has quick seedling emergence, excellent seedling vigor, rapid establishment, and moderate to heavy sod formation on critically disturbed sites. Seed production is potentially very high under irrigated conditions.

Origin

Critana was originally collected in 1960 near Havre, Montana, by D.E. Ryerson, then of Montana State University-Bozeman. Seed collections were made from plants growing on several roadside cuts on fine- to medium-textured soils.

Adaptation

Critana is adapted to a wide variety of sites but prefers medium- to coarse-textured soils and granular shaley clays. It is moderately tolerant to acidic or alkaline soils. Critana does well in dry, well-drained areas but responds to additional moisture and can withstand periodic flooding. It grows in the 10- to 20-inch precipitation zone in the northern Rocky Mountains and adjacent Great Plains regions. Critana is adapted in elevations ranging from 2,000 to 7,500 feet.

Description

'Critana' (PI 469235) is a cultivar release of thickspike wheatgrass. Thickspike wheatgrass is a long-lived, native, perennial rhizomatous grass that is drought tolerant and generally grows on a wide range of soil types in mixed and sparse stands of western wheatgrass and needlegrass. It is mildly rhizomatous, with creeping underground rootstocks in a dense, shallow fibrous root system (4 to 12 inches deep) with a few roots that penetrate below 2 feet. Although thickspike wheatgrass is rhizomatous, it does develop small clumps of plants, 18 to 30 inches tall. It produces an abundance of finely textured leaves, light green to bluish in color, less than 0.2 inch wide, with pointed, semiclasping auricles. The narrow seed spike is 3 to 5 inches long, has four to eight flowers, and has overlapping spikelets with pubescent lemmas. The species is very similar to streambank wheatgrass, which has little or no pubescence.

Plant Selection Process

Critana thickspike wheatgrass was tested and released as the first cultivar of the species in 1971.



Application and Uses

Critana was selected because it establishes faster than most native species. It has proven its ability to stabilize, revegetate, and reduce erosion on disturbed sites, such as mined lands, roadsides, recreation areas, and construction sites. Since its release, Critana has been one of the most popular and sought after reclamation species in the northern Great Plains Region. Critana is an excellent component in seed mixtures for reseeding range sites that are severely eroded or have low fertility. Critana forms a tight sod under dryland conditions and is well suited as turf in low-maintenance landscapes and naturalized areas. However, the leaf blades are tough and do not cut clean, resulting in a frayed, ragged edge. It initiates growth in early spring and provides good grazing for both domestic animals and wildlife until early fall when it becomes somewhat wiry. Critana thickspike wheatgrass produces palatable and nutritious hay, although it is more commonly used as forage. It has an early May protein level of about 20%, decreasing to 4% in October. The digestible carbohydrates remain at approximately 45% throughout the growing season. Critana can withstand heavy grazing and considerable trampling.

Establishment for Field Production

Critana will produce excellent seed crops for several years under good management practices. Seed production fields are moderately easy to establish using a conventional double-disk drill with a planting depth of ¼ to ½ inch. With 145,000 seeds per pound, the recommended seeding rate under irrigation is 4 pounds pure-live-seed per acre at 24-inch row



spacing. Critana thickspike wheatgrass can be planted in early spring, late summer (by August) with supplemental irrigation, or as a dormant fall seeding just prior to freeze-up. The seed matures in mid-July; it is harvested at the hard-dough stage by swathing, followed with combining of the cured windrows. Seed yields at the Bridger Plant Materials Center (PMC) average 400 pounds per acre under irrigated conditions (36-inch row spacing). Interspecific hybrids occur between this species and slender wheatgrass (*Elymus trachycaulus*); Critana may exhibit up to 2% seed or spike characteristics of slender wheatgrass. Seedheads with divergent awns (*Elymus lanceolatus* ssp. *albicans*—Montana wheatgrass types) can be found in seed-production fields, but the seeds often lose their identity when awns are removed by threshing and conditioning.

Establishment for Conservation Use

Stands of Critana are easily obtained with accepted cultural practices. Late-fall and early-spring seeding are equally satisfactory, and no fertilizers are necessary to establish the stand. Good seedbed preparation on critical areas, including harrowing; packing, if necessary; drilling the seed (depth control advised); and mulching, should be encouraged for best stand establishment. Recommended seeding rate is 6 pounds of pure-live-seed per acre. Broadcast seeding is not recommended, except on freshly disturbed sites, such as following wildfires, reconstructed road slopes, etc. The seeding rate on critical areas should be at least double that for range or pasture seeding and a minimum of 10 pounds pure-live-seed per acre. Once established for erosion control, usually no mowing is needed because of the natural low growth habit of the plant. Grazing should be prohibited for several years following establishment on critical areas to assure maximum vegetative cover and soil stabilization. Thin stands can be improved with additions of nitrogen (not to exceed 40 pounds per acre) on nonirrigated sites. Of special note is that research has never proven an economic benefit in fertilizer rates exceeding 25 pounds per acre, particularly in 10- to 14-inch precipitation zones. Critana thickspike wheatgrass is not considered a key management species on most range sites. It is intended to provide understory ground cover in mixtures with more productive species. Little data are available on palatability and grazing tolerance, but it may be assumed no damage will be incurred on Critana under proper grazing pressures. It is best seeded as a cover component in mixtures to a maximum of 50% on medium- to coarse-textured soils and 80% on fine-textured soils.

Seed Availability

The increase of Critana is limited to one generation beyond foundation to the certified class. Foundation seed is available from the USDA Natural Resources Conservation Service (NRCS) PMC in Bridger, Montana; the Foundation Seed Program at Montana State University-Bozeman; or the University of Wyoming Foundation Seed Service in Powell, Wyoming.

Additional information is available by contacting the Bridger Plant Materials Center.

USDA NRCS Plant Materials Center
98 South River Road
Bridger, MT 59014
406-662-3579

For information on line visit the NRCS Plant Materials Program or NRCS Montana Web sites to learn more about using plants to address conservation problems.

<http://plant-materials.nrcs.usda.gov>
<http://www.mt.nrcs.usda.gov>

Authors:
Susan R. Winslow, susan.winslow@mt.usda.gov and
Roger Hybner, roger.hybner@mt.usda.gov, USDA
NRCS Plant Materials Center, Bridger, Montana



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A Conservation Plant
for Montana and Wyoming



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