

## 'Critana'

### *Thickspike wheatgrass*

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



Figure 1. Critana thickspike wheatgrass seed production field.

'Critana' thickspike wheatgrass is a cultivar released by the Bridger Plant Materials Center (MTPMC) in cooperation with the Montana Agricultural Experiment Station, Bozeman, Montana in 1971.

#### Description

Critana thickspike wheatgrass is a long-lived, native, perennial rhizomatous grass that is drought tolerant and grows on a wide range of soil types in mixed and sparse stands of western wheatgrass (*Pascopyrum smithii*) and needlegrass (*Achnatherum* sp.). It is mildly rhizomatous, with creeping underground rootstocks in a dense, shallow, fibrous root system (4 to 12 inches deep) with a few roots penetrating below 2 feet. Although thickspike wheatgrass is rhizomatous, dense clumps of plants do develop, 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, semi-clasping 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 now synonymous with streambank wheatgrass.

#### Conservation Uses

Critana was tested and developed primarily for stabilization of disturbed areas, mined lands, roadsides, airports, recreation areas, and construction sites receiving little or no maintenance. Critana produces and provides good grazing for livestock and wildlife until fall, and palatable and nutritious hay. Critana was selected because it establishes faster than most native species. It has proven its ability to stabilize, revegetate, and reduce erosion quickly on disturbed sites. Since its release, Critana has been one of the most popular and utilized reclamation species in the northern Great Plains. It 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.

#### Area of Adaptation and Use

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 and alkaline soils. Critana grows well in dry, well-drained areas but responds to additional moisture and can withstand periodic, brief flooding. It grows well in 10- to 20-inch annual precipitation zones in the northern Rocky Mountains and adjacent Great Plains regions and is adapted to elevations ranging from 2,000 to 7,000 feet in these areas. It grows well in Montana and Wyoming in areas characterized by the aforementioned conditions.

### Establishment and Management for Conservation Plantings

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, no mowing is usually 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 non-irrigated sites. Critana thickspike wheatgrass is not considered a key management species on most range sites. It is intended to provide understory ground cover in mixtures containing 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.

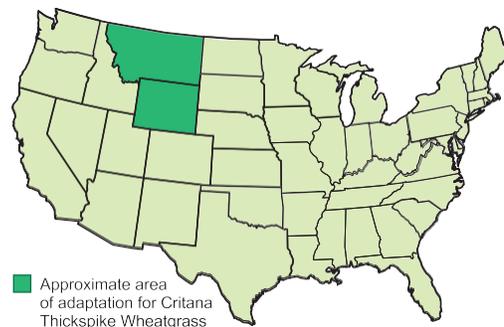


Figure 2. Approximate area of adaptation for Critana thickspike wheatgrass.

### Ecological Considerations

Critana thickspike wheatgrass is a bulk or composite of several native plant populations found growing in close proximity near Havre, Montana, and has not undergone any purposeful genetic manipulation. Critana does not differ in appearance, performance, or biology from naturally occurring thickspike wheatgrass observed in native populations.

### Seed and Plant Production

Critana will produce excellent seed crops for several years under proper management. Seed production fields are moderately easy to establish using a conventional double-disk drill with a planting depth of  $\frac{1}{4}$  to  $\frac{1}{2}$  inch. With 145,000 seeds per pound, the recommended seeding rate under irrigation is 4 pounds pure-live-seed per acre at 24-inch between-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 albicans* (Scribn. & J.G. Sm.) Á. Löve - 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.

### Availability

*For conservation use:* Certified seed of Critana thickspike wheatgrass is available through the commercial seed industry for conservation applications.

*For seed or plant increase:* Seed 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) Bridger Plant Materials Center, the Foundation Seed Program at Montana State University-Bozeman; or the University of Wyoming Seed Certification and Foundation Seed Service in Powell, Wyoming.

### Citation

Release Brochure for Critana thickspike wheatgrass (*Elymus lanceolatus*). USDA-Natural Resources Conservation Service, Bridger Plant Materials Center, Bridger, Montana, 59014. Published January 2019.

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/>>

USDA is an equal opportunity provider, employer, and lender.