



United States Department of Agriculture
Natural Resources Conservation Service
Plant Materials Program

'Nordan'

Crested Wheatgrass

Agropyron desertorum

A Conservation Plant Release by USDA NRCS Plant Materials Center, Bismarck, North Dakota



'Nordan' crested wheatgrass [*Agropyron desertorum* (Fisch. ex Link) Schult.] was released in 1953 cooperatively by the North Dakota Agricultural Experiment Station and the Plant Science Research Division of the Agricultural Research Service (ARS), Mandan, North Dakota. Nordan crested wheatgrass was originally intended for use in pasture and range plantings.

Nordan is considered a standard type of crested wheatgrass. It was developed from a selection made at an old nursery at Dickinson, North Dakota, in 1937. Single plants were selected from two generations of the original plant collection. Seven plants within this open-pollinated progeny were bulked for seed increase and tested as Mandan 571.

Description

Crested wheatgrass (*Agropyron desertorum*) is an introduced long-lived perennial bunchgrass. It was introduced from Asia and is naturalized across most of the United States and Canada. Crested wheatgrass grows to a height of 1½ to 3 feet. The seed head varies in size from 1 to 3 inches in length and is made up of a dense spike with overlapping and flattened spikelets. The lemmas are linear-lanceolate, narrowing to a short awn. Glumes are keeled and firm. Culms are erect. The leaves are moderately coarse and mostly basal and flat. Leaves are smooth below, slightly scabrous above, and vary in width from 0.08 to 0.24 inches. The leaves tend to roll inward as they dry. Crested wheatgrass develops a strong fibrous root system that lends itself to excellent persistence to both drought and cold extremes.

Uses

Crested wheatgrass provides some of the earliest spring grazing available, starting its growth in early April. It is palatable to all classes of livestock and wildlife. It is used quite extensively as a drought-tolerant early-season tame

grass pasture. Crested wheatgrass is usually seeded alone to provide early spring and late fall grazing. It is used extensively in drier climates for hay. The quality and quantity of the forage is usually increased when planted with a legume, such as alfalfa. Forage quality is very good early in the growing season with crude protein levels approximately 18 percent. Crude protein levels fall to around 4 percent during the summer when plants are dormant. Crested wheatgrass is noted for its ability to withstand very heavy grazing pressure once stands are established. It provides excellent feed for cattle, sheep, and horses in the spring. Elk, deer, and antelope utilize the forage early and late in the growing season. The seed is used by birds and rodents, and stands provide nesting cover for upland birds.

Area of Adaptation and Use

Nordan crested wheatgrass is a drought-tolerant cool-season grass that begins growth in early spring. It is adapted to a wide range of soil textures, and especially suited to well-drained medium textured soils. Crested wheatgrass does not tolerate salty soils or prolonged flooding. It was widely planted for soil stabilization during the 1930s. Crested wheatgrass continues to be a very popular introduced forage grass in the drier climates where the annual precipitation averages 9 to 14 inches.

Establishment

The seedbed should be firmly packed and free of competing weeds. The most common cause of stand failure is deep seeding. The seed should be planted with a drill at a depth of ½ inch or less on medium to fine textured soils and 1 inch or less on coarse textured soils. The preferred seeding dates are early spring and late fall as a dormant seeding. Nordan has very good seedling vigor and stands establish quickly. Weed competition in newly seeded stands should be controlled by clipping or rotary mowing. Mowing or clipping height should not remove more than ⅓ of the new crested wheatgrass seedling growth to ensure good seedling establishment. Weeds can also be controlled by applying recommended herbicides. Nordan averages 175,000 seeds/lb. Recommended full seeding rates are 6-7 PLS lb/acre for pasture and hayland plantings in the Dakotas.

Stands are long-lived and little management is needed. Additional nutrients, especially nitrogen, will usually benefit forage yields and seed production. Apply fertilizers according to soil testing recommendations. Productivity of decadent stands can usually be improved by the addition of nitrogen fertilizer.

Performance

Nordan is a standard type of crested wheatgrass. It is considered more drought-tolerant than the fairway type crested wheatgrass. The standard types usually produce higher forage yields compared to the fairway types. Nordan averaged 2,546 lb/acre of herbage compared to 2,183 lb/acre for 'Hycrest' and 1,684 lb/acre for 'Ephraim' from 1995-1997 in a forage study located at Hettinger, ND.



Looman, Jan. 1982. *Prairie Grasses Identified and Described by Vegetative Characters*. Research Station, Swift Current, Saskatchewan Agriculture Canada. Publication 1413.

Seed Production

Nordan crested wheatgrass has good seed production. Seed yields depend greatly on soil fertility, moisture conditions, row spacing, and age of stand. Nordan seed heads are dense and compressed. The seed is generally heavy and awnless. Seed quality is usually very good. Seed yields average 800 lb/acre under irrigation and 200 lb/acre under dryland production in the Northern Plains. Seed production fields will generally be productive for

about 5 years. Crested wheatgrass seed does not readily shatter. Harvesting of ripe seed is best achieved by direct combining when the top of the seed head begins to shatter. Harvesting can also be completed by windrowing at the mid to hard dough stage and then combining approximately 5 days later, after the windrows have dried. Seed is generally harvested from mid July to mid August.

Availability

For conservation use: Nordan crested wheatgrass is available in the commercial seed market. Contact your local NRCS field office or the Bismarck Plant Materials Center for use and availability of Nordan crested wheatgrass.

For seed increase: The Northern Great Plains Research Laboratory, located in Mandan, North Dakota, maintains the breeder seed of Nordan crested wheatgrass. Foundation seed is grown and available from the USDA-NRCS Plant Materials Center, Bismarck, ND.

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

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