

CRESTED WHEATGRASS (desertorum type) *Agropyron desertorum* (Fisch. ex Link) J.A. Schultes plant symbol = AGDE2

Contributed by: USDA NRCS Idaho State Office



© W.L. Wagner
 Smithsonian Institution
 @ USDA NRCS PLANTS

Alternate Names

standard crested wheatgrass, crested wheatgrass

Uses

Grazing/rangeland/hayland: Crested wheatgrass is commonly recommended for forage production. It is palatable to livestock and wildlife and is a desirable feed in spring, and in the fall if it re-grows enough. It is used for cattle and horse winter forage, but protein supplements are required to ensure good animal health. It withstands heavy grazing pressure (65% use and greater) once stands are established. The best forage types in order are Siberian, desertorum, and Hycrest.

Erosion control/reclamation: Crested wheatgrasses are useful for soil stabilization. They compete well with other aggressive introduced grasses, but because of this trait, they are not compatible in mixes with native species. Their drought tolerance, fibrous root systems, and good seedling vigor make these species ideal for

reclamation in areas with 8 to 20 inches annual precipitation. These grasses can be used in urban areas where irrigation water is limited to provide ground cover and to stabilize ditchbanks, dikes, pipelines, powerlines and roadsides.

Wildlife: Birds and small rodents eat crested wheatgrass seeds; deer, antelope and elk graze it, especially in spring and fall. Upland and song birds utilize stands for nesting.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

Crested wheatgrasses *Agropyron cristatum*, *Agropyron desertorum*, and Siberian wheatgrass *Agropyron fragile* are perennial grasses commonly seeded in the western United States. They are long-lived, cool season, drought tolerant, introduced grasses with extensive root systems. Crested wheatgrass grows from 1 to 3 feet tall and seed spikes may be 1.5 to 3 inches long. Spikelets flattened, closely overlapping, located divergent (flatwise) at a slight angle on the rachis flower stem. The lemmas generally narrow to a short awn and glumes are firm, keeled, tapering into a short bristle. Culms are erect, in a dense tuft and leafy. Leaves are flat, smooth below, slightly coarse above and vary in width from 2 to 6 mm.

Adaptation and Distribution

Crested wheatgrasses are adapted for non-irrigated seedings where annual precipitation averages 8 inches or more and where the frost free period is generally less than 140 days. The desertorum type is adapted to the Northwest, Intermountain and Great Plains regions with at least 8 inches of annual precipitation below 6500 feet elevation. It does well on shallow to deep, moderately course to fine textured, moderately well to well drained and weakly acidic to moderately alkaline soils. Under saline conditions, vigor and production are reduced. The desertorum type is more saline tolerant and equal to or more productive than other crested wheatgrass types. All wheatgrasses are cold tolerant, can withstand moderate periodic flooding in the spring, and are very tolerant of fire. They will not tolerate long periods of inundation, poorly drained soils or excessive irrigation.

Crested wheatgrass is distributed throughout much of the West and Midwest. For a current distribution map,

please consult the Plant Profile page for this species on the PLANTS Web site.

Establishment

Crested wheatgrass should be seeded with a drill at a depth of 1/2 inch or less on medium to fine textured soils and 1 inch or less on coarse textured soils. Single species seeding rates recommended for all crested wheatgrasses are 5 to 7 pounds Pure Live Seed (PLS) or 20 to 30 PLS per square foot. If used as a component of a mix, adjust to percent of mix desired. For critical areas, increase the seeding rate to 40 to 50 PLS per square foot. Mulching and light irrigations on highly disturbed areas are beneficial for stand establishment.

Best seeding results are obtained in very early spring on heavy to medium textured soils and in late fall on medium to light textured soils. Late summer (August to mid September) seedings are not recommended unless irrigation is available. If weed control is needed, application of 2,4-D should not be made until plants have reached the four to six leaf stage. Mow weeds that are beginning to bloom to reduce weed seed development. New stands may also be damaged by grasshoppers and other insects; pesticides may be required.

Management

Crested wheatgrasses produce leaves in the spring about 10 days after bluegrass species and about 2 to 3 weeks earlier than native wheatgrasses. New stands of crested wheatgrass should not be grazed until they are firmly established and have started to produce seed heads. Six inches of new growth should be attained in spring before grazing is allowed in established stands. Three inches of stubble should remain at the end of the grazing season to maintain the long term health of the plant.

Crested wheatgrasses are low maintenance plants; however, spring/fall deferment or grazing rotations are recommended to maintain plant health and to maximize forage production potential. Crested wheatgrass can be used for hay production and will make nutritious feed, but is more suited to pasture use. Light, infrequent applications of nitrogen (25 pounds/acre) and irrigation will increase total biomass production and lengthen the green period.

Environmental Concerns

Crested wheatgrasses are long-lived, spread primarily via seed, but may also spread via rhizomes in the case of the cristatum types. They are not considered "weedy" or invasive species. Most seedings do not spread beyond original plantings, or if they do spread, the rate of spread is not alarming. They will cross with each other, but do not cross with native species. Crested wheatgrasses resist winter annual competition better than native species because they germinate earlier and grow more rapidly at colder temperatures. Due to commonly being planted in monocultures (single species) stands in the past, some feel crested wheatgrasses are not ecologically appropriate. It is important to consider multiple species mixes to avoid this conception.

Cultivars, Improved, and Selected Materials (and area of origin)

'Nordan' (central Asia/former USSR) has good seedling vigor and seed quality and long term forage yields are as good or better than other types. 'Summit' (former USSR) is considered very similar to 'Nordan.' *Agropyron cristatum* x *Agropyron desertorum* (Hycrest type) is a hybrid between the cristatum and desertorum types which results in a plant with excellent seedling vigor. 'Hycrest' (central Asia/former USSR) is easier to establish than either of its parents and is more productive during the establishment period than either parent. Long term productivity exceeds the cristatum type and is equal to the desertorum type.

Prepared By & Species Coordinator:

Dan Ogle, Plant Materials Specialist
USDA NRCS Idaho State Office
Boise, Idaho

31Jan2002 JLK

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS <<http://plants.usda.gov>> and Plant Materials Program Web sites <<http://Plant-Materials.nrcs.usda.gov>>.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.