

**CRESTED
WHEATGRASS**
Agropyron cristatum (L.)
Gaertn.
Plant Symbol = AGCR

Contributed by: USDA NRCS Idaho State Office



Loren St. John
USDA NRCS Idaho PMC

Uses

Grazing/rangeland/hayland: Crested wheatgrass is commonly recommended for forage production. It is palatable to all classes of livestock and wildlife and is a desirable feed in spring and also in the fall if it re-grows enough. It is commonly utilized for winter forage by cattle and horses, but protein supplements are required to ensure good animal health. It can withstand very heavy grazing pressure (65% use and greater) once stands are established. The best forage types in order are Siberian, desertorum, and Hycrest. The cristatum type is not considered a productive forage type.

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. In areas above 14 inches of precipitation, the cristatum types may exhibit their rhizomatous traits and make excellent low maintenance lawns. 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. Cristatum type crested wheatgrass grows from 1 to 3 feet tall and seed spikes may be 1.5 to 3 inches long with a short-broad shape that tapers at the tip. Flower clusters within the spike are flattened and closely overlapping. Each seed has a short awn. Stems are leafy and erect, forming a dense tuft. Leaves are flat, smooth below, slightly coarse above, and vary in width from 1/16 to 1/4 inch.

Adaptation and Distribution

Cristatum type crested wheatgrass is adapted to areas where annual precipitation averages 10 and where the frost free period is generally less than 140 days; it does well up to 9,000 feet elevation. Crested wheatgrass grows on shallow to deep, moderately coarse to fine textured, moderately well to well drained and weakly acidic to moderately alkaline soils. Under saline conditions, vigor and production are reduced. The cristatum type is not well adapted to silty soils. All crested 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 the western United States. For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

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.

The best seeding results are obtained from seeding 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 and use of 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 requiring little additional treatment or care. 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 (exception Siberian types do not cross with other types), but do not cross with native species.

Crested wheatgrasses resist cheatgrass competition better than native species because it germinates earlier and grows more rapidly at colder temperatures. This is an important competitive advantage when dealing with winter annual species such as cheatgrass.

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)

'Douglas' (former USSR, Iran and Turkey) may be used on roadsides; 'Ephraim' (Turkey) is rhizomatous when planted in higher precipitation zones above 14 inches, and is useful for disturbed areas, mine spoils, roadsides and turf applications; 'Parkway' is recommended for hay and pasture; and 'Ruff' is recommended for a short season spring forage crop, roadsides, parks, and playgrounds in low rainfall areas of the central Great Plains.

Crested wheatgrasses *Agropyron cristatum* (L.)

Gaertn. X *Agropyron desertorum* (Fisch. ex Link)

J.A. Schultes (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

Edited: 31Jan2002 JLK; 24may06jsp

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<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, sex, 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 326-W, 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.

Read about Civil Rights at the Natural Resources Conservation Service.