

Notice of the Naming and Release

of

'PERU CREEK' TUFTED HAIRGRASS
(Deschampsia cespitosa)

BY THE *IN GRIM BY TAXONOMY*

UNITED STATE DEPARTMENT OF AGRICULTURE - FOREST SERVICE
AND THE
UPPER COLORADO ENVIRONMENTAL PLANT CENTER
AND THE
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
AND THE
COLORADO STATE UNIVERSITY AGRICULTURAL EXPERIMENT STATION

The above Federal and State agencies announce the cooperative release of 'Peru Creek' tufted hairgrass (Deschampsia cespitosa) for commercial seed and plant production.

Scientific Name Deschampsia cespitosa <Link> Beauv.

Common Name: Tufted hairgrass or alpine tufted hairgrass

Cultivar Name: 'Peru Creek'

Other Identification Numbers: 9024403, EPC 1468, USFS 058

Origin: Seed of the plant was collected in 1978 by Dr. Ray W. Brown at 11,300 feet elevation, southeast exposure, on Peru Creek, Summit County, east of Dillon, Colorado. Tested materials have been collected from two sites, one below the Peruvian Mine and the other below the Pennsylvania Mine adjacent to Peru Creek.

Description and Occurrence: Tufted hairgrass is a perennial, cool season, bunchgrass often found dominating mountain meadows. A.S. Hitchcock, rev. 1951, defines it as found in bogs and wet places from Greenland to Alaska, south to New Jersey, West Virginia, North Carolina, Illinois, North Dakota, New Mexico, and California, Arctic, and temperate regions of the Old World. Eaman, 1974, stated this grass is circumpolar, found on all continents except Africa and Australia.

H.D. Harrington, 1979 identifies the Colorado tufted hairgrass as D. cespitosa ssp. genuina. It is widely distributed over the western mountainous half of Colorado at

'Peru Creek' has many promising attributes as a high elevation revegetation plant species. In comparison with other populations of the species from all over North America and Iceland, it has excellent relative growth and vegetative production on acid mine waste material at high elevations. It appears to produce excellent seed crops virtually every year at high elevations on acidic spoil material.

'Peru Creek' consistently produces relatively high surface cover per plant. This population appears to have relatively exceptional longevity on high elevation disturbances. In comparison with other populations 10 years after seeding on pH 3.2-4.0 mine spoil at the Glengary Mine, 'Peru Creek' is the only one still producing large vegetative tops and viable seed crops.

The Glengary Mine spoils ranged from 2.0 to 6.0 pH. Nothing grew at pH 2.0 but 'Peru Creek' tufted hairgrass established plants at 2.8 pH. At this extreme pH, 'Peru Creek' was stunted and was the only population that had germination and emergence. Ten years later there are still plants in the plots but they have never flowered or grown very much.

On the other sites, ranging from 3.2, 4.0, 5.1, and 6.0 pH 'Peru Creek' was most impressive producing biomass, seed, and having the longest life span. Ten years after seeding, all the plants appear to be alive, and in many cases seedling establishment has occurred next to seeded plants.

'Peru Creek' biomass data show no differences between soil pH ranges from 3.2 and 6.0. Apparently vegetative size and reproductive capacity of 'Peru Creek' are unaffected within this pH range.

Other populations of tufted hairgrass also show growth at fairly low pH, but none have grown to the same size, nor do they produce as much seed, as 'Peru Creek'. All other populations tested show poorer growth at pH 3.2. 'Peru Creek' is more acid tolerant on high elevation mine sites than over 250 North America and Iceland accessions tested by Dr. Brown.

Areas of Adaptation and Uses: 'Peru Creek' tufted hairgrass is recommended for revegetation of high elevation sites having acid (3.5-6.0 pH) soils and should be drilled. It is adapted to wet organic soils where seedling transplants could be used along with broadcast seedings.

The total area of adaptation has not been determined. It appears 'Peru Creek' performs well above 6,000 feet, preferring the range of 9,000 to 12,000, in the Rocky Mountain Region from the Southern Rockies of Colorado and Utah, the Wasatch Range of Utah, and Northern Rockies of Wyoming and Montana.

The Colorado Varietal Release Committee on April 3, 1990, -
accepted 'Peru Creek' tufted hairgrass for release to
commercial growers and users.

Approval Signatures:

Charles Laughlin,
Dr. Charles Laughlin, Director
Colorado Agricultural Experiment Station
Fort Collins, Colorado

Date: 12/10/93

Duane L. Johnson,
Duane L. Johnson, State Conservationist
USDA Soil Conservation Service
Lakewood, Colorado

Date: 9/22/93

Ray W. Brown,
Dr. Ray W. Brown, Project Leader
USDA Forest Service, Intermountain Research Station
Logan, Utah

Date: 9/30/93

M. Dean Knighton,
M. Dean Knighton, Station Director
USDA Forest Service, Intermountain Research Station
Ogden, Utah

Date: 10/1/93

Scott Robertson,
Scott Robertson, President/Administrative Board
Upper Colorado Environmental Plant Center
Meeker, Colorado

Date: 12-23-93

James B. Newman,
James Newman, Director
USDA Soil Conservation Service, Ecological Sciences Div.
Washington, DC

Date: 1-4-94

USDA-SOIL CONSERVATION SERVICE
LAKEWOOD, COLORADO

Planting Guide

SPECIES: 'PERU CREEK' TUFTED HAIRGRASS
(*Deschampsia cespitosa* (Link) Beauv.)
9024403, EPC-1468, USFS 058

USES: This specific tufted hairgrass is recommended for revegetation at high elevations on acid soils (3.5-6.5 pH). Its native site ranges from mesic to hydric soils often in saturated, hummocked conditions. Total area of adaptation has not been determined. It has performed in the Rocky Mountain region from southern Colorado to Montana at 6,200 to 12,000 feet elevation. It has not been satisfactory on basic soils exceeding a pH of 7.8.

It has been tested primarily for revegetation of mined land where soils are acid, and sites are considered high elevation.

Plummer, et. al., 1968 rates tufted hairgrass relative to its suitability for restoring subalpine and wet meadows for game range. He finds it easy-to plant, tolerant to grazing, and palatable as early spring and summer growth.

DESCRIPTION: 'Peru Creek' tufted hairgrass is the first Southern Rocky Mountain strain selected and released. It originated below the historic 11,500 foot Peruvian Mine site, Peru Creek, east of Dillon, Colorado.

'Nortran' tufted hairgrass and 'Norcoast' Bering hairgrass (*D. beringensis*) have been released by the Agricultural and Forestry Experiment Station, University of Alaska-Fairbanks.

'Peru Creek' hairgrass is a tufted grass with its leaves produced from a basal clump. Flowering culms are numerous and have diffuse inflorescence. It is a cool season, perennial, bunch grass. Seeds are quite small and are not characterized by a great deal of seedling vigor.

ADAPTATION: Correspondence from Dr. Ray W. Brown sites 'Peru Creek', planted in multiple plot trials at Glengary Mine, Cooke City, Montana, was the only accession to establish at pH of 2.8. This population was stunted but persisted for 10 years. On other sites where soils ranged from pH of 3.2, 4.0, 5.1, and 6.0, 'Peru Creek' has always been the most impressive vegetation and seed producing population, and has the longest apparent life span. Other populations of tufted hairgrass show tolerance to fairly low pH, but none of these grow to the same size, nor do they produce as much seed, as 'Peru Creek'.

ADAPTATION cont:

'Peru creek' tufted hairgrass is expected to perform well .at higher elevations throughout the intermountain region of Utah, Colorado, Wyoming, and Montana. Primary Major Land Resource Areas are described as: 1). 43 Northern Rocky Mountains, 2). 47 Wasatch and Uintah Mountains, 3). 48A southern Rocky Mountains, 4). 48B Southern Rocky Mountain Parks. Further testing is required to determine its complete geographic adaptation.

ESTABLISHMENT: 'Peru Creek' is best established where competition is controlled, and the seed is spring seeded at a depth of 1/4 inch depth in a firm seedbed and rolled firmly by a press wheel.

Excessive seeding rates have been traditionally used because of poor quality lots and inadequate testing information. Quantities of quality commercial seed will continue to be in short supply.

There are 2,400,000 seeds per pound. The standard rate of 25 to 35 pure live seed per square foot is adequate, Pure stand seed rate requires about 0.6 pure live seed pound per acre. Some unique sites (i.e. wet) may justify the use of seedling plugs/transplants. This has proven very successful but is quite labor intensive.

MANAGEMENT: Livestock need to be excluded from new plantings until well established. Reference information included in the Critical Area Treatment standard and specification.

References:

Correspondence from Dr. Ray Brown to W. Hassell, dated March 13, 1990.

Plummer, et al. Restoring Big-Game Range in Utah, Publication no. 68-3, 1968.