

Registration of 'RoadCrest' Crested Wheatgrass

[K. H. Asay](#), K. B. Jensen, W. H. Horton, D. A. Johnson, N. J. Chatterton, and S. A. Young

'RoadCrest' crested wheatgrass (Reg. no. _____), a rhizomatous cultivar of crested wheatgrass (*Agropyron cristatum* (L.) Gaertn.), was developed by a research team at the USDA-ARS Forage and Range Research Laboratory, Utah State University, Logan, UT, and was released on 2 June 1998 in cooperation with the Utah Agricultural Experiment Station. RoadCrest was evaluated as CWG-Rhizome.

RoadCrest was derived from two accessions originally collected at Dikmen Ankara and Güvercinlik Ankara, Turkey and provided to the USDA-ARS Forage and Range Research Unit by Dr. Esvet Acikgoz. Rhizomatous plants, observed in these accessions during their initial evaluation on a semiarid range site in central Utah, were selected and established in a crossing block to develop the parental germplasm. These plant materials were then subjected to two cycles of selection based largely on progeny evaluation for increased rhizome development, fine leaf texture, short growth stature, and improved seedling vigor. Breeder seed was compounded from selected polycross seedlots in the final breeding cycle.

It is a long-lived perennial, and is significantly more rhizomatous than any other crested wheatgrass included in evaluation trials, including the cultivar Ephraim, which is the only other rhizomatous cultivar of crested wheatgrass to be released. RoadCrest produces less biomass and is from 15 to 25% shorter in stature than forage-type crested wheatgrass cultivars. The cultivar has been evaluated on roadsides and in turf trials in Utah, Colorado, and Washington. Seedling vigor and drought resistance of RoadCrest compares favorably with other crested wheatgrasses, including 'Hycrest', 'CD-II', 'Fairway', and 'Nordan'. RoadCrest is significantly easier to establish and initiates growth earlier in the spring than other turf and low-maintenance turf grasses including Kentucky bluegrass (*Poa pratensis*), 'Sodar' thickspike wheatgrass (*Elymus lanceolatus*), tall fescue (*Festuca arundinacea*), and hard fescue (*Festuca ovina*). Leaf color intensity and turf quality of RoadCrest are not as good as Kentucky bluegrass, tall fescue, and perennial ryegrass when the latter grasses are grown under optimum conditions. RoadCrest greens up early in the spring and remains green until mid summer on temperate sites similar to Logan, Utah. Plants then go dormant until temperatures decline in the fall. This characteristic varies according to summer temperatures and annual precipitation. Summer dormancy is much less prominent at elevations above 1,500 m.

RoadCrest is recommended for use along roadsides or similar low-maintenance turf applications in temperate, semiarid regions receiving from 250 to 500 mm of annual precipitation. Seeding rates should be from 17 to 28 kg ha⁻¹, which is substantially less than those recommended for other turf grasses such as Kentucky bluegrass, ryegrass, or tall fescue. When seeded at more than the recommended rate, particularly at high moisture levels, seedling diseases are likely to occur resulting in substantial thinning of the stand. However, the remaining seedlings of RoadCrest readily establish, and excellent stands are usually obtained. As with other crested wheatgrass cultivars, supplemental irrigation can actually be a detriment if total water application (precipitation + irrigation) exceeds 550 mm annually.

RoadCrest is a natural tetraploid (2n=4x=28) and is fully interfertile with tetraploid cultivars of crested wheatgrass (*Agropyron cristatum* and *A. desertorum*), Siberian crested wheatgrass (*A.*

fragile), and the crested wheatgrass hybrid cultivars Hycrest and CD-II. Established isolation distances from these cultivars must be maintained in Certified seed fields. The cultivar produced 560 kg of seed ha⁻¹ when grown in rows 0.9 m apart with moderate supplemental irrigation and 50 kg N ha⁻¹ applied in the fall. At 100% percent purity, there are approximately 530,000 seeds kg⁻¹.

Breeder, Foundation, and Certified seed classes will be recognized. Breeder seed will be maintained by the USDA-ARS Forage and Range Research Laboratory at Logan, UT. Foundation seed will be produced by the USDA-ARS at Logan and distributed by the Utah Crop Improvement Association. Rights for production and marketing of Certified seed will be awarded on a bid basis. Protection will be applied for under the Plant Variety Protection Act of 1994. Conditions of this license specify that seed of the cultivar RoadCrest can be marketed only as a class of Certified seed. Genetic material of this release will be deposited in the National Plant Germplasm System where it will be available for research purposes, including development and commercialization of new cultivars.

References

1. K. H. Asay, K. B. Jensen, W. H. Horton, D. A. Johnson, and N. J. Chatterton, USDA-ARS Forage and Range Research Laboratory, Utah State Univ., Logan, UT 84322-6300; and S. A. Young, Plants, Soils, and Biometeorology Dep., Utah State Univ., Logan, UT 84322-4820. Cooperative investigations of USDA-Agricultural Research Service and the Utah Agricultural Experiment Station, Logan, UT 84322-4820. Approved as Journal Paper No. 7081. Registration by CSSA. Accepted _____.

Phytophthora sojae M.J. Kaufmann & J.W. Gerdemann) and soybean mosaic virus (9).

LS92-1800 is released for nonexclusive licensing to seedmen for brand labeling in Illinois. Illinois Foundation Seed, Inc., will handle seed maintenance and distribution. Breeder seed will be maintained by Southern Illinois University Carbondale. Small quantities of seed for breeding and research purposes may be obtained for a minimum of five years from the date of this publication by writing the corresponding author.

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References and Notes

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Appreciation is extended to A.P. Rao-Arelli and coworkers, University of Missouri, for SCN evaluation. Research supported in part by the Illinois Soybean Program Operating Board.

Published in *Crop Sci.* 39:1534-1535 (1999).

Registration of 'RoadCrest' Crested Wheatgrass

'RoadCrest' crested wheatgrass [*Agropyron cristatum* (L.) Gaertn.] (Reg. no. CV-25, PI 606546), a rhizomatous cultivar, was developed by a research team at the USDA-ARS Forage and Range Research Laboratory, Utah State University, Logan, UT, and was released on 2 June 1998 in cooperation with the Utah Agricultural Experiment Station. RoadCrest was evaluated as CWG-Rhizome.

RoadCrest was derived from two accessions originally collected at Dikmen Ankara and Güvercinlik Ankara, Turkey, and provided to the USDA-ARS Forage and Range Research Unit by Esvet Acikgoz. Rhizomatous plants observed in these accessions during their initial evaluation on a semiarid range site in central Utah were selected and established in a crossing block to develop the parental germplasm. These plant materials were then subjected to two cycles of selection based largely on progeny evaluation for increased rhizome development, fine leaf texture, short growth stature, and improved seedling vigor. Breeder seed was produced by compositing seed from selected polycross seedlots in the final breeding cycle.

RoadCrest is a long-lived perennial and is significantly more rhizomatous than any other crested wheatgrass included in evaluation trials, including 'Ephraim', which is the only other rhizomatous cultivar of crested wheatgrass to be released. RoadCrest produces less biomass and is from 15 to 25% shorter in stature than forage-type crested wheatgrass cultivars. RoadCrest has been

evaluated on roadsides and in turf trials in Utah, Colorado, and Washington. Seedling vigor and drought resistance of RoadCrest compares favorably with other crested wheatgrasses, including 'Hycrest', 'CD-II', 'Fairway', and 'Nordan'. RoadCrest is significantly easier to establish and initiates growth earlier in the spring than other turf and low-maintenance grasses, including Kentucky bluegrass (*Poa pratensis* L.), 'Sodar' thickspike wheatgrass [*Elymus lanceolatus* (Scribn. & J.G. Smith) Gould], and tall fescue (*Festuca arundinacea* Schreb.). Leaf color intensity and turf quality of RoadCrest are not as good as Kentucky bluegrass, tall fescue, and perennial ryegrass (*Lolium perenne* L.) when the latter grasses are grown under favorable conditions. RoadCrest greens up early in the spring and remains green until midsummer on temperate sites similar to Logan. Plants then go dormant until temperatures decline in the fall. This characteristic varies according to summer temperatures and annual precipitation. Summer dormancy is much less prominent at elevations above 1500 m.

RoadCrest is recommended for use along roadsides or similar low-maintenance turf applications in temperate, semiarid regions receiving from 250 to 500 mm of annual precipitation. Recommended seeding rates are from 17 to 28 kg ha⁻¹, which is substantially less than those recommended for other turfgrasses, such as Kentucky bluegrass, perennial ryegrass, or tall fescue. When RoadCrest is seeded at more than the recommended rate, particularly at high moisture levels, seedling diseases are likely to occur, resulting in substantial thinning of the initial stand. However, the remaining seedlings of RoadCrest readily establish, and excellent stands are usually obtained. As with other crested wheatgrass cultivars, supplemental irrigation can actually be a detriment if total water application (precipitation + irrigation) exceeds 550 mm annually.

RoadCrest is a natural tetraploid (2n = 4x = 28) and is fully interfertile with tetraploid cultivars of crested wheatgrass [*A. cristatum* and *A. desertorum* (Fisch. ex Link) Schultes], Siberian crested wheatgrass [*Agropyron fragile* (Roth) Candargy], and the crested wheatgrass hybrid cultivars Hycrest and CD-II. Established isolation distances from these cultivars must be maintained in certified seed fields. RoadCrest produced 560 kg seed ha⁻¹ when grown in rows 0.9 m apart with moderate supplemental irrigation and with 50 kg N ha⁻¹ applied in the fall. At 100% purity, there are approximately 530 000 seeds kg⁻¹.

Breeder, Foundation, and Certified seed classes will be recognized. Breeder seed will be maintained by the USDA-ARS Forage and Range Research Laboratory. Foundation seed will be produced by the USDA-ARS at Logan and distributed by the Utah Crop Improvement Association. Rights for production and marketing of certified seed will be awarded on a bid basis. Protection will be applied for under the U.S. Plant Variety Protection Act as amended in 1994. Under the Title 5 option, seed of RoadCrest can be marketed only as a class of certified seed. Genetic material of RoadCrest has been deposited in the National Plant Germplasm System, where it will be available for research purposes, including development and commercialization of new cultivars.

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References and Notes

1. K.H. Asay, K.B. Jensen, W.H. Horton, D.A. Johnson, and N.J. Chatterton, USDA-ARS Forage and Range Research Laboratory, Utah State Univ., Logan, UT 84322-6300; S.A. Young, Plants, Soils, and Biometeorology Dep., Utah State Univ., Logan, UT 84322-4820. Cooperative investigations of USDA-Agricultural Research Service and the Utah Agricultural Experiment Station, Logan, UT 84322-4820. Approved as Journal Paper no. 7081. Registration by CSSA. Accepted 31 Mar. 1999. *Corresponding author (khasay@cc.usu.edu).

Published in *Crop Sci.* 39:1535 (1999).