Registration of ‘Creel’ Barley

Creel six-rowed spring feed barley (Hordeum vulgare L.) (Reg. no. CV-325, PI 632274) was developed cooperatively by the USDA-ARS and the Idaho Agricultural Experiment Station (AES). It was formally released by the USDA-ARS, the Idaho AES, and the Oregon AES in January 2005. Creel is an early to mid-season, covered, white aleurone, six-rowed spring barley with medium-lax spikes, smooth awns, and long rachilla hairs. It is adapted to dryland production areas in Idaho and eastern Oregon, and has good production under irrigation in southeastern Idaho.

Creel is from the cross M44/80Ab4952//79Ab10719. The parent M44 is a selection from Minnesota. The parent 80Ab4952 is from the cross 73Ab152/M71-88. 73Ab152 has the pedigree 63Ab2987-9/'Conquest' (Johnston, 1966) and M71-88 is a selection from Minnesota. 63Ab2987-9 is a selection from ‘Karl’ (Wesenberg et al., 1976). The parent 79Ab10719 is the parental line from which ‘Colter’ (Wesenberg et al., 1993) was selected and has the pedigree 73Ab2199/'Karla' (Wesenberg et al., 1985). 73Ab2199 has the pedigree ‘Steptoe’/‘Larker’ (Muir and Nilan, 1973; Peterson, 1964). Creel originated at Aberdeen, ID as a F₃ selection in 1993 and was identified as 93Ab688 before release. Breeder seed of Creel originated as a bulk increase of seed from 700 F₈ head rows grown at the University of Idaho Tetonia Research and Extension Center in 2000.

Creel has been grown in replicated trials at Aberdeen since 1995. Creel was entered in the Western Regional Spring Barley Nursery (WRSBN) from 1996 until 2001. In 5 yr of testing in irrigated trials at Aberdeen, 1997–2001, Creel averaged 9486 kg ha⁻¹ or 103% of Colter and 145% of ‘Morex’ (Rasmussen and Wilcoxson, 1979). In these same trials Creel was similar to Colter and Morex in test weight and heading date. It was nearly 3 cm shorter than Colter and 10 cm shorter than Morex. Creel lodged more than Colter (18 and 7%, respectively), but less than Morex (32%). Creel’s kernel plumpness was equal to Colter but 6% less than Morex under irrigation at Aberdeen.

Creel was entered in the Western Regional Dryland Spring Barley Nursery (WRDSBN) in 1999. In 3 yr of testing (1999–2001) in dryland trials at Tetonia, Creel averaged 3822 kg ha⁻¹ or 101% of ‘Baronesse’ and 107% of ‘Legacy’. Its test weight was 14 kg m⁻³ less than Baronesse and slightly less (3.9 kg m⁻³) than Legacy. Kernel plumpness of Creel at Tetonia was 15% less than Baronesse and 10% less than Legacy. It was 3 d earlier than Legacy and 5 d earlier than Baronesse at Tetonia. Creel was the same height as Baronesse and 6 cm shorter than Legacy. Creel was grown in the WRDSBN at Geneseo in 2000 and 2001. It averaged 7977 kg ha⁻¹ or 110% of Baronesse and 126% of Morex. Creel’s test weight of 645 kg m⁻³ was considerably less than the 683 kg m⁻³ of Baronesse, the 656 kg m⁻³ of Legacy, and the 662 kg m⁻³ of Morex. Kernel plumpness of Creel was lower than Legacy (52% vs. 61%), but was equal to ‘Millenium’ (Albrechtsen and Hole, 2002). The heading date of Creel at Geneseo was 3 d later than Colter, and crested 1 or 103% of Colter and 145% of ‘Morex’ in these trials.

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In the Elite Feed Barley Nursery (EFBN), Creel averaged 4100 kg ha⁻¹ or 110% and 105% of Colter. The test weight of Creel was 103 kg m⁻³ lower (28.1 kg m⁻³) than Baronesse in these trials. Kernel plumpness was 1.0% lower than Baronesse and Creel. Creel was grown in the EFBN at five locations (Craigmont, Potlatch, Soda Springs, Tammany, and Weippe) in 2003 and 2004. In these trials Creel averaged 105% of Baronesse and 111% of Colter. Creel was equal in height to Baronesse and 3.2 and 30.4 kg m⁻³ less than Colter and Baronesse, respectively, and its kernel plumpness was 2.3 and 12.2% less, respectively.

The yield performance of Creel in northern Idaho (IAYN and EFBN) compared to Baronesse, Morex, and Colter is good in this region, and its good yield record in the WRDSBN grown in southeast Idaho make it a potentially valuable feed barley cultivar. Creel was evaluated in Idaho in 1995–1996. It had low malt extract, barley and wort protein, total protein percentage, diastatic power, and protein gluten and was higher in protein and gluten content. This malt profile and thus, Creel is released strictly as a feed barley cultivar.

In 2002, Creel was found to be susceptible (caused by Puccinia striiformis Westend.) to Barley yellow dwarf virus, net blotch [caused by Rhynchosporium secalis (Sacc.) Shoemaker], and Rhynchosporium secalis (Oudem.) J.J. Davis.

Breeder’s seed of Creel was increased in 2000, and Foundation seed was produced in 2001. Genetic material of this cultivar is being deposited in the USDA-ARS National Plant Germplasm System where it will be available for research purposes, including development and commercialization of new cultivars. Breeder and Foundation seed of Creel for research purposes, including development and commercialization of new cultivars, will be maintained by the Idaho Agricultural Experiment Station, Foundation Seed Program. Requests for Foundation seed should be directed to the Coordinator, Foundation Seed Program, College of Agriculture, Kimberly Research and Extension Center, 3793 N 3600 E, Kimberly, ID 83210; J.C. Whitmore, Univ. of Idaho Tetonia Res. & Ext. Ctr., 888 East Highway 33, Newdale, ID 83436; D.M. Wesenberg, 615 Calder Av., American Falls, ID 83431. Registration by CSSA. Received 9 Dec. 2004.

References


