

### 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 F<sub>3</sub> selection in 1993 and was identified as 93Ab688 before release. Breeder seed of Creel originated as a bulk increase of seed from 700 F<sub>8</sub> 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<sup>-1</sup> or 103% of Colter and 145% of 'Morex' (Rasmusson 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 (WRBSN) in 1999. In 3 yr of testing (1999–2001) in dryland trials at Tetonia, Creel averaged 3822 kg ha<sup>-1</sup> or 101% of 'Baronesse' and 107% of 'Legacy'. Its test weight was 14 kg m<sup>-3</sup> less than Baronesse and slightly less (3.9 kg m<sup>-3</sup>) 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 Genesee in 2000 and 2001. It averaged 7977 kg ha<sup>-1</sup> or 110% of Baronesse and 126% of Morex. Creel's test weight of 645 kg m<sup>-3</sup> was considerably less than the 683 kg m<sup>-3</sup> of Baronesse, the 656 kg m<sup>-3</sup> of Legacy, and the 662 kg m<sup>-3</sup> of Morex. Kernel plumpness of Creel was lower than Legacy (52% vs. 61%), but was equal to 'Millennium' (Albrechtsen and Hole, 2002). The heading date of Creel at Genesee was 3 d earlier than Baronesse and 1 d later than Morex.

Creel was grown in the Idaho Advanced Yield Nursery (IAYN) at five locations (Fairfield, Parma, Craigmont, Tammany, and Potlatch, ID) in 2001. Over all locations, Creel averaged 4558 kg ha<sup>-1</sup> or 97% of Baronesse, 112% of Colter, and 119% of Morex. The test weight and kernel plumpness of Creel were lower than Baronesse and Morex in these trials, but slightly better than Colter. The heading date was 2 d later than Baronesse and 5 d later than Morex. Creel was equal in height to Baronesse and Colter and 10 cm shorter than Morex at these locations.

In the Elite Feed Barley Nursery (EFBN) grown at three irrigated locations (Aberdeen, Filer, and Tetonia, ID) in 2003 and 2004, Creel averaged 7492 kg ha<sup>-1</sup> or 110% of Baronesse and 105% of Colter. The test weight of Creel was equal to Colter but lower (28.1 kg m<sup>-3</sup>) than Baronesse in these trials. Creel's kernel plumpness was 1.0% lower than Baronesse and 5.0% higher than Colter. Creel was grown in the EFBN at five rain-fed locations (Craigmont, Potlatch, Soda Springs, Tammany, and Tetonia, ID) in 2003 and 2004. In these trials Creel averaged 4100 kg ha<sup>-1</sup> or 105% of Baronesse and 111% of Colter. Creel's test weight was 3.2 and 30.4 kg m<sup>-3</sup> 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 in the IAYN and EFBN compared to Baronesse, the standard for yield in this area, and its good yield record in the WRSBN and WRDSBN grown in southeast Idaho make it a potentially valuable feed barley cultivar. Creel was evaluated for malt quality in 1996. It had low malt extract, barley and wort protein, soluble to total protein percentage, diastatic power, and  $\alpha$ -amylase activity, with high  $\beta$ -glucan content. This malt profile is unacceptable; thus, Creel is released strictly as a feed barley cultivar.

In 2002, Creel was found to be susceptible to stripe rust (caused by *Puccinia striiformis* Westend.) and moderately susceptible to *Barley yellow dwarf virus*, net blotch [caused by *Drechslera teres* (Sacc.) Shoemaker], and scald [caused by *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 release has been deposited in the USDA-ARS National Plant Germplasm System where it will be available (after 5 yr) for research purposes, including development and commercialization of new cultivars. Breeder and Foundation seed of Creel 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, Idaho 83341. Small quantities of seed for research purposes may be obtained from the corresponding author for at least 5 yr.

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