

### REGISTRATION OF 'CREST' BARLEY

'CREST', a 2-row spring malting barley (*Hordeum vulgare* L.) (Reg. no. CV-231, PI 561409) was released by the Washington State University (WSU) College of Agriculture and Home Economics and the Idaho and Oregon Agricultural Experiment Stations in 1992. It was selected at Pullman, WA, in 1978 as a row from a single F<sub>3</sub> plant from a 1975 cross of 'Klages'/2 WA8537-68. WA8537-68 is a selection from a cross of WA7698-62/'Foma' and WA7698-62 is a selection from a cross of 'Betzes'/'Haines Hanna'/'Piroline'. Crest was tested in the Washington State 2-row barley nursery for 11 yr (1981-1991), WSU extension nurseries for 7 yr (1985-1991), and USDA-ARS coordinated western regional spring barley nurseries for 2 yr (1987-1988) prior to release. Malting quality tests were conducted at WSU, the USDA-ARS Cereal Crops Research Unit at Madison, WI, Great Western Malting Co. at Vancouver, WA, and industry laboratories through the auspices of the American Malting Barley Association (AMBA), Inc., Milwaukee, WI. The WSU Department of Animal Sciences cooperated in testing Crest for feed quality.

Crest is a 2-row, midseason, medium height, spring malting and feed barley. It has lax nodding spikes with long rough awns. The kernels are midlong and plump with slightly wrinkled adhering hulls, prominent veins, narrow to broad crease, long rachilla hairs, and white aleurone.

The yield of Crest was 95% of 'Steptoe' over 270 location-yr, 103% of 'Harrington' over 49 location-yr, and 109% of Klages over 82 location-yr in Washington and the Western region. Crest has ranged in yield from 93 to 101% of Steptoe at individual Washington test locations averaged over years. Crest has relatively wide adaptation, but appears to outyield other 2-row barley varieties and Steptoe, particularly at locations with <450 mm annual precipitation. Kernel quality measured as test weight and kernel plumpness are strengths of Crest. Its test weight is greater than that of 6-row and similar to the best 2-row barley cultivars. Test weights of Crest, Steptoe, and Klages averaged over 40 location-yr from western regional spring barley nurseries were 68, 63, and 67 kg hL<sup>-1</sup>, respectively. Kernel plumpness was 89, 90 and 85% for Crest, Steptoe, and Klages, respectively. The maturity of Crest (175 d from 1 January) was intermediate to Steptoe (170 d from 1 January) and Klages (177 d from 1 January). Plant height is midtall, with lodging resistance similar to or slightly less than other barley cultivars of similar height. Crest has partial resistance to powdery mildew (incited by *Erysiphe graminis* DC. f. sp. *hordei* Em. Marchal) about equal to Klages and greater than Steptoe. No other diseases of consequence have been noted. Crest is susceptible to the Russian wheat aphid (*Diuraphis noxia* Mordvilko).

Crest has good malting quality relative to Klages (the industry 2-row standard) and Harrington, the most widely grown 2-row malting cultivars in the Pacific Northwest. After extensive industry testing, AMBA has designated Crest as a recommended malting cultivar. Crest also has good feed characteristics, equal to or better than other 2-row barley cultivars and better than 6-row barley cultivars, based on chemical composition and cattle and swine trials. Feed/gain ratios for finishing steers were 6.03, 6.84 and 7.32 for Crest, 'Clark' and Steptoe, respectively. Digestible energies for swine were 15.15, 15.18, and 14.79 MJ kg<sup>-1</sup> (3615, 3624, and 3530 kcal kg<sup>-1</sup>) for Crest, Harrington and Steptoe, respectively.

Breeder and foundation seed stocks are maintained by the WSU College of Agriculture and Home Economics and the Foundation Seed Program of the Washington State Crop Improvement Association at Pullman, WA 99164. Seed production under certification will proceed from breeder through foundation, registered, and certified seed classes.

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#### References and Notes

1. C.E. Muir, R.A. Nilan, S.E. Ullrich, and B.C. Miller Dep. of Crop and Soil Sciences; J.A. Froseth, Dep. of Animal Sciences, Washington State Univ., Pullman, WA 99164. CSS Dep. Sci. Paper no. 9201-34. Registration by CSSA. Accepted 31 May 1992. \*Corresponding author.

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