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REGISTRATION OF CULTIVARS

REGISTRATION OF 'CLEMSON 100' WINTER BARLEY

'CLEMSON 100' WINTER FEED BARLEY (*Hordeum vulgare* L.)(Reg. no. CV-230, PI 559484) was released by the South Carolina Agricultural Experimental Station in 1990. It originated from the hybridization of an F_3 breeding line, 'McNair 601'/'Harrison'/2/'Gembloux', and Va7244362. Clemson 100 was selected as a single head row in the F_6 generation in 1982. It was entered in the Uniform Winter Barley (Semihardy Varieties) Nursery for 1985–1986 and remained in that test through 1987–1988 as SC821445.

Clemson 100 was released as a replacement for 'Redhill'. Redhill's earliness often resulted in partial freeze damage to heads during early April temperatures of −3 to −4 °C. Clemson 100 escapes such temperatures, in that it is 5 to 7 d later than Redhill. Clemson 100 has shown adequate winterhardiness in South Carolina, Georgia, North Carolina, and areas south of these states. Winterkill as high as 95% was observed in Knoxville in the Uniform Winter Barley Nursery (1986–1987 and 1987–1988). In 3 yr of testing in South Carolina (12 location-yr test sites), grain yield (3037 kg ha^{-1}) has been 99% of 'Boone' and 'Keowee'.

Clemson 100 is an early-maturing cultivar that is particularly suited for double-cropping systems in the piedmont regions of the southeastern winter barley production areas, averaging 5 to 7 d earlier than Keowee and Boone under test conditions in South Carolina and surrounding states. It is 2 to 3 cm taller than Keowee. Clemson 100 has stiff straw and is moderately resistant to prevalent races of leaf rust incited by *Puccinia hordei* G. Otth. and powdery mildew, incited by *Erysiphe graminis* DC. f. sp. *hordei* Ém. Marshal. Moderate resistance to scald, incited by *Rhynchosporium secaltis* (Oudem.) J.J. Davis has been observed in the Uniform Winter Barley (Semihardy Varieties) Nursery.

Clemson 100 is a six-rowed, winter feed barley cultivar. Lemma awns are rough and moderately long and present only on the center row of kernels. Very short awns are present on lateral kernels on 1 to 3% of the spikes. Early growth is semiprostrate. Leaf sheaths are green, waxy, and without hairs. Auricles are white, collars are closed, and leaves are semierect. The distance from flag leaf to spike is 12 to 17 cm. Basal rachis internode is short and straight to slightly curved. Laterla kernels do not overlap. The spike is parallel in shape, erect, short to midlong, and lax to medium dense with long hairs on the rachis edge. Glume awns are equal to length of the glume and rough. Lemma teeth are few on lateral nerves. There is a depression on the lemma base; rachilla is long haired. Covered kernels have white aleurone and slightly wrinkled hulls.

The generation sequence of seed production will be breeder, foundation, registered, and certified. This cultivar will not be protected under the Plant Variety Protection Act, Public Law 91-577. Breeder seed of Clemson 100 will be maintained by the Department of Agronomy and Soils, Clemson University, Clemson, SC 29634. Foundation seed will be available from the South Carolina Foundation Seed Association, Cherry Road, Clemson, SC 29631.

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References and Notes

1. Dep. of Agronomy, Clemson Univ., Clemson, SC 29634. Published with approval of the Director of the South Carolina Agric. Exp. Stn. as Technical Contribution no. 3250. Registration by CSSA. Accepted 30 Apr. 1992. *Corresponding author.

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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_3 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^{-1}, 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* Ém. 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).