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 F3 breeding line, 'McNair 601'/Harrison'/Gemboux', and VA7244362. Clemson 100 was selected as a single head row in the F6 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. Oth. and powdery mildew, incited by Erysiphe graminis DC. f. sp. hordei Em. Marshal. Moderate resistance to scald, incited by Rhynchosporium secalis (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 are present on lateral kernels on 1 to 3% of the spikes. Early flowering is 1 to 2 wk later than Redhill.

Crest is susceptible to the Russian wheat aphid (Diuraphis noxia Mordvilko). Test weights of Crest, Steptoe, and Klages averaged over 103 location-yr, 109% of Klages over 82 location-yr in the Western region. Crest has ranged in yield from 93 to 101% of 'Harrington' over 49 location-yr, 103% of 'Steptoe' over 270 location-yr, and 109% of Klages over 82 location-yr in the Western region. Crest has relatively wide adaptation, but appears particularly at locations with <450 mm annual precipitation.

The yield of Crest was 95% of 'Steptoe' over 270 location-yr, 103% of 'Harrington' over 109% of Klages over 82 location-yr in the Western region. Crest has yielded at or near yield of Steptoe at individual Washington testing stations for many years. Crest has relatively wide adaptation, particularly at locations with <450 mm annual precipitation. Kernel quality measured as test weight, protein, and color was intermediate to Steptoe (170 d from 1 January) and was 68, 63, and 67 kg ha⁻¹, respectively. The maturity of Crest (175 d from 1 January) is 2 to 3 cm taller than Keowee. Clemson 100 has stiff straw. Test weights of Crest, Steptoe, and Klages averaged over 103 location-yr, 109% of Klages over 82 location-yr in the Western region. Crest has ranged in yield from 93 to 101% of 'Harrington' over 49 location-yr, 103% of 'Steptoe' over 270 location-yr, and 109% of Klages over 82 location-yr in the Western region. Crest has relatively wide adaptation, but appears particularly at locations with <450 mm annual precipitation. Kernel quality measured as test weight, protein, and color was intermediate to Steptoe (170 d from 1 January) and was 68, 63, and 67 kg ha⁻¹, respectively.