the causal organisms of net blotch (Pyrenophora teres Drechs.), scald [Rhynchosporium secalis (Oudem.) J.J. Davis], spot blotch [Cochliobolus sativus (Ito & Kuribayashi) Drechs. ex Dastur], septoria leaf blotch (Septoria passerinii Sacc.), and barley yellow dwarf (BYDV).

Starling has better winter hardness than ‘Nomini’, but is not as hardy as ‘Wysoy’. Spike emergence of Starling is 1 d later than Wysoy and 2 d earlier than ‘Boone’. Starling is similar to Wysoy in plant height and straw strength. Grain yields of Starling in 49 trials conducted in Virginia from 1987 to 1995 averaged 5700 kg ha\(^{-1}\), which is similar to that of Nomini and 10% higher than that of Wysoy. Grain volume weight of Starling (595 kg m\(^{-3}\)) is similar to that of Nomini, but slightly less than that of Wysoy (605 kg m\(^{-3}\)).

In the Uniform Winter Barley Yield Nursery consisting of 15 to 20 entries grown in 9 to 11 states, Starling ranked 7th for grain yield in 1989, 2nd in 1990, and 5th in 1991. Starling is adapted throughout Virginia, and generally should perform well in areas where Wysoy and Boone have been grown. This cultivar also has performed well in tests conducted in the Coastal Plain and Piedmont regions of North Carolina.

Breeder seed of Starling will be maintained by the Virginia Agricultural Experiment Station under the auspices of the Department of Crop and Soil Environmental Sciences, Virginia Polytechnic Institute and State University, Blacksburg. Authorized seed classes are foundation, registered, and certified. Foundation seed will be produced and distributed by the Virginia Crop Improvement Association via the Foundation Seed Farm, Box 78, Mount Holly, VA 22524. U.S. plant variety protection has been granted for this cultivar.

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References and Notes

Registration of ‘Callao’ Barley

Callao (Reg. no. CV-267, PI 592800) six-row winter feed barley (Hordeum vulgare L.) was developed by the Virginia Agricultural Experiment Station and released in March 1994. Callao originated from the cross ‘Boone’ ⁄ ‘Henry’ ⁄ ‘Sussex’, which was completed in 1981. Callao was derived in 1987 as an F\(_2\) headrow selection using a modified bulk breeding system.

Callao is a short, early-maturing, six-row winter feed barley with high grain volume weight. Early growth is prostrate, and similar to Boone in this respect. Stems of Callao have straight necks with closed collars. The rachis is covered with hairs, and its basal internode is short and curved. Spikes are nodding, dense, and parallel, with overlapping lateral kernels. Glumes are one-third the length of the lemmas in length, and have long hairs in wide bands. Glume awns are rough and slightly shorter than the glumes in length. Lemma awns are rough and intermediate in length, being longer than those of Boone but shorter than those of ‘Pamunkey’. Lemmas have depressed bases and are yellow in color at maturity, with several teeth on lateral and marginal nerves and some hairs along the ventral surface. The covered kernels are white, midlong, and wrinkled, with long-haired rachillas.

In the mid-Atlantic region, Callao is moderately resistant to the prevalent pathotypes of the causal organisms of powdery mildew (Puccinia graminis DC. f. sp. hordei Em. Marchal; syn. Blumeria graminis), net blotch (Pyrenophora teres Drechs.), scald [Rhynchosporium secalis (Oudem.) J.J. Davis], spot blotch [Cochliobolus sativus (Ito & Kuribayashi) Drechs. ex Dastur], septoria leaf blotch (Septoria passerinii Sacc.), and barley yellow dwarf (BYDV).

Callao is moderately susceptible to leaf rust (caused by Puccinia hordei G. Otth) in the seedling stage, but has a moderate level of adult-plant resistance in the field, based on comparisons with susceptible cultivars such as Wysoy.

Winter hardness of Callao is moderate, in that Callao is harder than Pamunkey but slightly less hardy than Wysoy. Winter survival of Callao was similar to the check ‘Tennessee Winter’ in the 1991–1992 and 1992–1993 USDA-ARS Uniform Winter Hardiness Nurseries. Spike emergence of Callao is very early (Day of Year 105 d), similar to ‘Barsoy’ in the mid-Atlantic region. Callao heads about 2 d earlier than Nomini and Pamunkey, and 5 to 8 d earlier than ‘Starling’ and Boone. Plant height of Callao (81 cm) is 8 cm shorter than Barsoy, and 13 to 20 cm shorter than Pamunkey, Starling, Nomini, and Boone. Straw strength of Callao is similar to Boone, but less than that of Barsoy, Nomini, Pamunkey, and Starling. Grain yields of Callao in 27 trials conducted in Virginia from 1991 to 1995 averaged 6075 kg ha\(^{-1}\), which was 11% higher than yields of Boone and 3% lower than Nomini. Callao has an average grain volume weight of 656 kg m\(^{-3}\), which is 6% higher than those of Boone and Nomini.

Callao was evaluated for 3 yr (1992–1994) in the Uniform Winter Barley Yield Nursery. In all 3 yr, Callao ranked 2nd in grain yield, with average yields exceeding the test mean by 8 to 10%. Among the hulled barleys, Callao ranked 1st or 2nd in grain volume weight, with average test weights of 619 to 642 kg m\(^{-3}\). Callao performed well in the mid-Atlantic and southeastern regions, particularly in Virginia, Georgia, North Carolina, South Carolina, Tennessee, and Texas.

Breeder seed of Callao will be maintained by the Virginia Agricultural Experiment Station under the auspices of the Department of Crop and Soil Environmental Sciences, Virginia Polytechnic Institute and State University, Blacksburg. Authorized seed classes are foundation, registered, and certified. Foundation seed will be produced and distributed by the Virginia Crop Improvement Association via the Foundation Seed Farm, Box 78, Mount Holly, VA 22524. Application for U.S. plant variety protection has been made for this cultivar.

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References and Notes

Registration of ‘Pamunkey’ Barley

‘Pamunkey’ (Reg. no. CV-261, PI 583865) six-row winter feed barley (Hordeum vulgare L.) was developed by the Virginia Agricultural Experiment Station and released in June 1993. Pamunkey originated from the three-way cross ‘Boone’ ⁄ ‘Henry’ ⁄ ‘NA 77-12-41’, which was completed in 1977. The parental line VA 77-12-41 was derived from a composite of crosses that consisted of CIHo 9623, CIHo 9638, CIHo 9708, and barley yellow dwarf resistant ‘Atlas’, each crossed to a ‘Cedada Capa’ ⁄ ‘Wong’ ⁄ Awnleted ‘Hudson’ selection. Callao is moderately susceptible to leaf rust (caused by Puccinia hordei G. Otth) in the seedling stage, but has a moderate level of adult-plant resistance in the field, based on comparisons with susceptible cultivars such as Wysoy.

Winter hardness of Pamunkey is moderate, in that Callao is harder than Pamunkey but slightly less hardy than Wysoy. Winter survival of Pamunkey was similar to the check ‘Tennessee Winter’ in the 1991–1992 and 1992–1993 USDA-ARS Uniform Winter Hardiness Nurseries. Spike emergence of Pamunkey is very early (Day of Year 105 d), similar to ‘Barsoy’ in the mid-Atlantic region. Pamunkey heads about 2 d earlier than Nomini and Pamunkey, and 5 to 8 d earlier than ‘Starling’ and Boone. Plant height of Pamunkey (81 cm) is 8 cm shorter than Barsoy, and 13 to 20 cm shorter than Pamunkey, Starling, Nomini, and Boone. Straw strength of Pamunkey is similar to Boone, but less than that of Barsoy, Nomini, Pamunkey, and Starling. Grain yields of Pamunkey in 27 trials conducted in Virginia from 1991 to 1995 averaged 6075 kg ha\(^{-1}\), which was 11% higher than yields of Boone and 3% lower than Nomini. Pamunkey has an average grain volume weight of 656 kg m\(^{-3}\), which is 6% higher than those of Boone and Nomini.

Pamunkey was evaluated for 3 yr (1992–1994) in the Uniform Winter Barley Yield Nursery. In all 3 yr, Pamunkey ranked 2nd in grain yield, with average yields exceeding the test mean by 8 to 10%. Among the hulled barleys, Pamunkey ranked 1st or 2nd in grain volume weight, with average test weights of 619 to 642 kg m\(^{-3}\). Pamunkey performed well in the mid-Atlantic and southeastern regions, particularly in Virginia, Georgia, North Carolina, South Carolina, Tennessee, and Texas.

Breeder seed of Pamunkey will be maintained by the Virginia Agricultural Experiment Station under the auspices of the Department of Crop and Soil Environmental Sciences, Virginia Polytechnic Institute and State University, Blacksburg. Authorized seed classes are foundation, registered, and certified. Foundation seed will be produced and distributed by the Virginia Crop Improvement Association via the Foundation Seed Farm, Box 78, Mount Holly, VA 22524. Application for U.S. plant variety protection has been made for this cultivar.

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