effect of ploidy level on physiological processes, because they are similar in productivity and maturity.

REFERENCES


Registration of Crop Cultivars

REGISTRATION OF AZURE BARLEY†
(Reg. No. 179)

A. E. Foster, J. D. Franckowiak, V. D. Pederson, and R. E. Pyler‡

‘Azure’ barley (Hordeum vulgare L.), C.I. 15865, was developed by the North Dakota Agricultural Experiment Station in cooperation with USDA-ARS and was released 14 Jan. 1982. It was tested as ND1894 and traced to a bulk of 50 F₁ head rows, made in 1978. Azure is derived from the cross ‘Bonanza’/‘Nordic’/NDB130. The F₁ and F₂ generations of this cross were grown in the greenhouse and field, respectively, at Fargo, N. Dak., and the F₂ and F₃ generations were grown in a winter nursery at Ciudad Obregon, Sonora, Mexico.

Azure is a six-rowed, smooth-awned spring barley. The covered kernels are medium-sized and have a blue aleurone and long hairs on the rachilla. The spike is medium-long, medium-lax, and semi-erect. Azure is medium-early, mid-tall, and has moderately strong straw. Compared with Bonanza, it is slightly earlier, shorter, and more resistant to lodging. Azure is resistant to Puccinia graminis Pers. f. sp. tritici Eriks. and Henn. It shows more field resistance than Bonanza to prevalent strains of Helminthosporium sativum Pamm., King., and Bakke., but less resistance than Bonanza to Pyrenophora teres (Died) Drechs. Azure is susceptible to Ustilago nuda (Jens.) Rostr. and U. hordei (Pers.) Lagerh. Azure has exceeded Bonanza in yield by 7% in 7 years of testing in North Dakota and is adapted to the barley growing regions of North Dakota, Minnesota, and South Dakota. The kernel plumpness of Azure exceeds that of Bonanza and their test weights are equal. Quality tests conducted by North Dakota State University, the USDA-ARS Barley and Malt Laboratory, Madison, Wis., and industry laboratories have shown that Azure is superior to Bonanza in total protein percentage (one percentage point lower) and equal in the ratio of soluble to total protein and in extract percentage. Azure is slightly lower than Bonanza in soluble protein, diastatic power, and alpha-amylase activity and all have high levels of nitrogen and crude fat.

Registration of REDHILL BARLEY
(Reg. No. 180)

W. D. Graham, Jr., B. C. Morton, Jr., and G. C. Kingsland

‘Redhill’, C. I. 15830, is a winter type barley developed and released in 1979 by the South Carolina Agricultural Experiment Station. It originated from the cross 64D2445/SC601098 made in 1968 and was selected as a single head row in the F₆ generation. Redhill was tested in the Uniform Winter Barley Nursery (Semihardy cultivars) where it was first entered in 1978-1979. It was tested in South Carolina yield tests beginning in 1977.

Redhill is an early maturing cultivar that is popular for double cropping systems in the piedmont and southeastern winter barley production areas. It is 28 days earlier and 5 cm taller than ‘Keowee’ under South Carolina test conditions. Redhill has stiff straw and is resistant to races of leaf rust, incited by Puccinia hordei Otth. and powdery mildew, incited by Erysiphe graminis DC. f. sp. hordei (Eriks.) a. chal. Reaction to scald, incited by Rhyzopus stolonifer, is slight. Redhill is intermediate with moderate resistance to more prevalent reaction.

Redhill is six-rowed with semismooth awn, hairs only on the center row of spikelets and are variable. Early growth is semiprostrate. Basal leaf sheath is green with 10% abortive. The covered kernels have a white aleurone and slightly wrinkled hulls.