Registration of ‘Binscarth’ Barley

‘Binscarth’ (CV-327, PI 642854; Canadian Reg. No. 6121) is a six-rowed spring forage barley (Hordeum vulgare L.) cultivar developed at the Agriculture and Agri-Food Canada (AAFC) Research Centre, Brandon, MB, Canada, which was registered on 5 May 2006 by the Variety Registration Office of the Canadian Food Inspection Agency, Ottawa, ON, Canada. Binscarth was tested at Brandon and in the Western Cooperative Forage Barley Registration Test (2002 and 2003) under the experimental number FB006. Binscarth was selected from the cross Brandon CC 053/’B1602’/BT 347/3/’Argyle’/’Conquest’/4/’Duel’/’Vivar’/’AC Rosser’. Brandon CC 053 is a Composite-Cross six-rowed line derived from five cycles of male-sterile derived recurrent selection; BT 347 is a six-rowed feed line developed at the AAFC Research Centre, Brandon, MB (Pedigree: ‘Conquest’/’Bedford’; Canadian Food Inspection Agency, 1979); Argyle is a six-rowed malting barley cultivar developed by the University of Manitoba, Winnipeg, MB, Canada (Canadian Food Inspection Agency, 1981); Conquest is a six-rowed malting barley cultivar developed by AAFC Research Centre, Brandon, MB (Johnston, 1966); AC Rosser is a six-rowed feed barley cultivar developed by AAFC Research Centre, Brandon, MB (Therrien, 1998); Duel is a six-rowed (PI 539917) dual-purpose malting and feed cultivar developed by Busch Agricultural Resources Inc., Ft. Collins, CO, USA (Canadian Food Inspection Agency, 1994); B1602 is a six-rowed white aleurone malting barley developed by Anheuser-Busch Inc. (Canadian Food Inspection Agency, 1994); and Vivar is a six-rowed feed cultivar developed by the Field Crop Development Centre, Alberta Agriculture Food and Rural Development, Lacombe, AB, Canada (Helm et al., 2003).

Binscarth was selected from an F3-derived population. The hybrid population (Brandon cross EX705) from which Binscarth was derived was developed at the AAFC Research Centre, Brandon, MB, Canada in 1996. One hundred five F1 seed were sown in the greenhouse and harvested in bulk. The F2 population was sown in the field as a 3-m row and bulk harvested. The procedure was repeated for the F3 generation using two 3-m rows. Three hundred spikes were selected from the F3 bulk sample on the basis of visual assessment for dense, upright growth, low disease incidence, and late maturity. F4 selections were grown as F5 plots as individual F4 progeny rows. Individual progeny rows were selected from the F4 population on the basis of visual assessment for dense, upright growth, low disease incidence, and late maturity. F4 selections were grown as F5 plots 3 × 1 m in a nearest-neighbor design with ‘Virden’ (Therrien et al., 1988) and ‘AC Ranger’ (Therrien, 2002) as alternating check cultivars repeated every 20 plots. A single plot (EX705–14) was selected from this F5 population on the basis of heavy tillering (i.e., visually displaying many more tillers in a plot, relative to the check cultivar, AC Ranger), upright growth, high leaf area index (LAI), high resistance to lodging, and low incidence of foliar disease. EX705–14 was tested in a replicated field trial at Brandon in 1999. EX705–14 was tested at three locations in Alberta, five locations in Saskatchewan, and one location in Manitoba in 2000. Binscarth was then tested at Brandon and in the Western Cooperative Forage Barley Registration Test (2002 and 2003) under the experimental number FB006.

Forage quality for Binscarth exceeded that of the FBCoop, with total digestible nutrients (TDN) per unit of DM equal to AC Ranger (the forage quality check cultivar) and a herbage value (RFV) that is approximately 4% lower than AC Ranger. The spike of Binscarth is short (6.0–9.0 cm) with loose awns (incited by Ustilago nuda L.) and semi-erect to seminodding. Kernel length and width with white aleurone. Lemma and lemma awn tips are colorless (white).

Binscarth is susceptible to Fusarium head blight (incited by U. graminearum Schwabe [teleomorph Gibberella zeae] (Berk. & Curtis) Sacc.), is resistant to stem rust (except race QCCJ, incited by P. graminis Pers.:Pers. f. sp. tritici (incited by U. nuda L.)) and resistant to net blotch (incited by Pyrenophora teres Drechs.). Acetate (incited by P. graminis Pers.:Pers. = P. graminis Pers. sp. tritici Eriks. & E. Henn.), and is susceptible to net blotch (incited by U. nuda L. and resistant to loose smuts (incited by U. oryzae Pers.), respectively).

Seed from 30 uniform progeny rows at the University of Manitoba in 2000 were bulked to constitute the Breeder seed of Binscarth. Breeder seed is being maintained by AAFC at the Indian Head Farm, Indian Head, SK, Canada. Small quantities of Binscarth, for research purposes, can be obtained from the author. The Canadian distributor for Binscarth is Wagon Wheel Seeds, R.R. #5, Churchbridge, SK.

References


