REGISTRATION OF 'DIAMOND' BARLEY

Diamond spring barley (Hordeum vulgare L. emend. Lam.) (Reg. no. 195) was developed at the Agriculture Canada Research Station, Lacombe, Alberta, Canada, from a cross made in 1972 between 'Galt', a Canadian cultivar, and 'Unitar', a cultivar introduced from the USA. The F₁ and F₂ generations from this cross were grown in the field. The F₃ and subsequent generations up to the F₆ were advanced by the single-seed descent method of breeding. 'Diamond' was selected in 1975 from 506 F₇ lines grown in a head-row nursery at Lacombe, Alberta and was entered in the Alberta Joint Project Barley Test in 1978 and 1979 as selection number LA-659-14. It was advanced to the Western Six-row Barley Co-operative Test in 1979 and tested for 3 years under the experimental designation BT 618. Diamond also was tested extensively in the Alberta Regional Barley Test from 1981 through 1984. License No. 2239 for this cultivar was issued by the Plant Health and Plant Products Directorate, Agriculture Canada, on 20 Apr. 1982. Diamond has been assigned the Plant Gene Resources of Canada number PGR12328. The name Diamond was chosen to commemorate the 75th anniversary of the establishment of the Lacombe Research Station which coincided with the year in which this cultivar was released.

Diamond has a medium-long, nodding, lax, clavate shaped, six-rowed spike in which the lateral rows overlap at the tip. The rachis margins are slightly tapered and covered with a few short hairs. The basal rachis internode above the collar is straight, and is about 1 mm in length. The long, medium-wide kernels have yellow aleurone and bear medium-long rachillas that are covered with long hairs. The large kernels also have a horseshoe-shaped depression at the base and are subtended by smooth (glabrous) glumes that are about half the length of the lemma. The glume awns are smooth, green-tipped, and about the same length as the glume. The lemmas also are smooth and have long, smooth, green-tipped awns. The lateral lemma veins are barbed. The stem, which is blue-green in color, is covered with a waxy bloom and has a straight neck with a closed collar.

Diamond has yielded more in tests than any cultivar in its maturity group. In 3 years of testing in Western Canada, Diamond out-yielded 'Klondike', the highest yielding check cultivar, by more than 8%; 'Bonanza', the most widely grown barley cultivar in Western Canada, by more than 16%; and 'Galt', a popular six-rowed feed barley cultivar grown in central and southern Alberta, by more than 3%. It yields about 4% less than 'Johnston', a late maturing feed barley cultivar licensed for production in Western Canada. Diamond matures at least 4 days earlier than Johnston, and 2 to 3 days earlier than Galt, an advantage of great importance in the high rainfall, cool temperature, short growing season areas in the Parklands of the Western Canadian Prairies. In Western Canada, Diamond has replaced 'Bonanza' and 'Galt'.

Kline, PI 491550 (Reg. no. 196), is a six-rowed barley (Hordeum vulgare L.) developed by the U.S. Delta Stn., Athens, GA, and released in 1984. TX70 D627/'Burk', was made by A.R. Brown in 1973. TX70 D627 is a six-rowed, awned, winter type, six-rowed barley cultivar released by the Texas Agric. Exp. Stn. in 1971. It has large plump kernels that are relatively high in protein and lysine. The pedigree method of plant breeding was used until the F₄ generation when the bulk method was used. During the 1978-1979 growing season, a non-yielding F₆ bulk from the cross was selected in a yield trial (plot 433). This selection subsequently was tested under the designation Ga 79-433.

'Kline' has been evaluated extensively in Georgia and was released in the Uniform Winter Barley Nursery in 1980 and 1981. Each year, Kline outyielded 'Milton' and 'Anson' by 13%, respectively. In 17 trials conducted from 1980 through 1984, Kline yielded more than any cultivar in its maturity group. It has yielded more in tests than any cultivar in the Southeast. During this same period, Kline outyielded 'Milton' and 'Anson' by 13% and 17%, respectively. In 17 trials conducted from 1980 through 1984, Kline yielded more than any cultivar in its maturity group.