Registration of 'AC Lacombe' Barley

'AC Lacombe' (Reg. no. CV-244, PI 576177) is a six-rowed feed barley (Hordeum vulgare L.) cultivar developed by Agriculture Canada, Lacombe Research Station, Lacombe, Alberta, Canada, and released in 1991. It was developed from a cross of 'Klondike'/'Gaith'/'Unitan' made in 1980. The F1 generation was grown in the field in 1981. The F2, F3, and subsequent generations were propagated in growth chambers by single-seed descent. AC Lacombe was selected from 600 F2 lines grown in a head-row nursery at Lacombe. The selection criteria in the F2 and subsequent generations included yield, lodging resistance, disease resistance, test weight, and kernel plumpness. AC Lacombe was tested as LAB-695-033 in the Preliminary Barley Yield Test in 1986, and in the Alberta Project Barley Test in 1987. It was advanced to the Western Cooperative Six-Row Barley Test in 1988 and tested for 3 yr under the experimental designation BT 634. AC Lacombe was registered (Reg. no. 3498) by Plant Products Division, Food Production and Inspection Branch, Agriculture Canada, on 20 Dec. 1991. It was assigned the accession number PGR 25933 by the Plant Gene Resources of Canada. Plant variety protection for AC Lacombe, under the Canadian Plant Variety Protection Act, is pending.

Juvenile plants of AC Lacombe are erect, and have medium green leaves. The coleoptile is medium green in color. Adult plants are medium tall and have strong medium thick culms. The stem is bluish green and is covered with a waxy bloom; the axils are white.

AC Lacombe has a slightly nodding, medium long, lax, clavate-shaped, six-rowed spike in which the lateral rows overlap at the tip. The rachis margins are slightly tapered, with a few short hairs. The basal rachis internode above the collar is straight. The kernels are medium long, medium wide, and yellow-aleurone, bearing medium long rachillas that are covered with long or short hairs. They also have a horsehoe-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 are glabrous, and have long, smooth, green-tipped awns. The lateral lemma veins have no barbs.

AC Lacombe offers a well-adapted, high-yielding, lodging-resistant alternative to other feed barley cultivars currently grown in western Canada. In 3 yr of testing in Alberta, Saskatchewan, and Manitoba (total of 50 location-yr), grain yield of AC Lacombe averaged 5.16 t ha⁻¹, which was 3% more than Brier, the highest-yielding check cultivar, and 17% more than Argyle, a popular six-rowed malting cultivar grown in western Canada. AC Lacombe is best adapted to the Black Soil Zone of Manitoba and Saskatchewan (Zone 1), and the Black and Grey Wooded Soil Zone of central Alberta (Zone 3). In these two zones, AC Lacombe has outyielded Brier by 3.8 and 7.9%, respectively. AC Lacombe is intermediate in plant height and averages about 9 cm shorter than Argyle, and about 1 cm taller than Brier. Its lodging resistance is slightly inferior to that of Argyle, but significantly better than that of Brier. AC Lacombe is medium in grain protein content, and is intended to be grown as a feed barley. It has high test weight (≈ 60 kg hL⁻¹), high kernel weight (41 mg kernel⁻¹), and a high percentage of plump kernels (≈ 75% plump). Because it is a mid-season cultivar, AC Lacombe can be grown successfully in most areas of western Canada, where high rainfall, cool temperatures, and short growing season may preclude the cultivation of later maturing cultivars.

Although AC Lacombe is recommended primarily for the Black and Grey Wooded soils, it has adequate disease resistance to be grown anywhere in the traditional six-row barley areas of western Canada. It is resistant to covered smut [caused by Ustilago hordei (Pers.) Lagerh.], false loose smut [caused by U. avenae (Pers.) Rostr.; syn. U. nigra Tapke], and pathotype Rpg1 of wheat stem rust [caused by Puccinia graminis Pers.: f. sp. tritici Eriks. & H. Eenn.]. AC Lacombe is moderately resistant to the spot-type of net blotch [caused by Pyrenophora teres Drechs. f. maculata Smegd.] and pathotype pgtQCC of wheat stem rust. It is moderately susceptible to the net type of net blotch [caused by P. teres Drechs. f. teres Smegd.], common root rot [caused by Cochliobolus sativus (Ito & Kuribayashi) Drechs. ex Dastur and Fuxarium spp.], and scald [caused by Rhynchosporium secalis (Oudem.) J. D. Davis]. AC Lacombe is susceptible to loose smut [caused by Ustilago tritici (Pers.) Rostr.; syn. Ustilago nuda (C.N. Jensen Rostr.)] and speckled leaf blotch [caused by Septoria passeri (Sacc.)].

Breeder seed of AC Lacombe was developed from a balanced composite sample of ≈ 200 F0 head-row plots. Each head-row plot was selected for uniformity and trueness-to-type both visually and using SDS-PAGE (1) electrophoresis of hordeins. The breeder seed will be maintained by Agriculture Canada, Experimental Farm, Indian Head, SK, Canada. Multiplication and distribution of other classes of pedigreed seed will be handled by SeCan Association, 200-57 Auriga Dr., Nepean, ON K2E 8B2, Canada.

SOLOMON KIBITE* (2)

References and Notes

1. SDS-PAGE, sodium dodecyl sulfate polyacrylamide gel electrophoresis.

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Registration of 'Piatt' Soybean

'Piatt' soybean [Glycine max (L.) Merr.] (Reg. no. CV-320, PI 574534) was developed by the Illinois Agricultural Experiment Station and released in August 1993. This is a Maturity Group III cultivar, selected to combine high yield and semideterminate growth type (Dr.) (1).

Piatt originated as an F1 plant selection from the cross LN78-257 × 'Asgrow A3127'. LN78-257, with semideterminate stem termination, is a selection from the cross 'Union' × C1528 (2). C1528 is a semideterminate stem type selection from 'Calland' × L63-1397 (5). L63-1397 is a selection with semideterminate stem type from 'Harosoy' × PI 80837 (7). Asgrow A3127 is a cultivar selected from 'Williams' × 'Essex' (3,6). The F2, F3, and subsequent generations were propagated in growth chambers by single-seed descent. The F2, F3, and subsequent generations were propagated in growth chambers by single-seed descent. Piatt was evaluated as LN86-3357 in Illinois for agronomic performance during 1987 to 1992. It was evaluated in the Uniform Soybean Tests Northern States Preliminary III, 1990, and Uniform Test III, 1991 and 1992.

Piatt is classified as Group III maturity (relative maturity 3.7), averaging 4 d later than 'Resnik' (4). It is best adapted to 38 to 41° N lat. When compared with Resnik, Piatt averaged