CROP REGISTRATIONS

Registration of ‘IL 85-3132-1’
Soft Red Winter Wheat

‘IL 85-3132-1’ (Reg. no. CV-820, PI 586683) soft red winter wheat (Triticum aestivum L.) was developed by the Illinois Agricultural Experiment Station and released in 1995 for brand labeling. IL 85-3132-1 originated from the cross ‘McNair 1003’/‘Caldwell’. IL 85-3132-1 combines high yield with high test weight and intermediate maturity. IL 85-3132-1 showed stable grain yield performance in tests in Illinois from 1988 to 1994 and in regional tests from 1990 to 1993. IL 85-3132-1 is adapted to Illinois and the surrounding Midwest region.

IL 85-3132 was first selected in 1985 as an F₃ headrow. Heads were selected from the F₃ headrow and a single F₄ headrow was selected in 1986 and designated IL 85-3132-1. Seed of IL 85-3132-1 was increased from the single F₄ headrow. IL 85-3132-1 has been true-breeding; however, variants (primarily taller plants) were rogued several times during increase. Breeder seed was produced in 1994 (F₁₂), and parent seed was produced in 1995 (F₁₃).

The performance of IL 85-3132-1 was evaluated in breeding nursery trials in Illinois from 1988 to 1994, in variety testing trials from 1991 to 1994, in the four-state (Illinois, Indiana, Missouri, and Ohio) Regional Nursery in 1990 and 1991, and in the Uniform Eastern Soft Red Winter Wheat Nursery in 1992 and 1993. The yield of IL 85-3132-1 was equal to or better than ‘Cardinal’ in most environments within the Midwest region. In 30 performance trials throughout Illinois from 1991 to 1994, IL 85-3132-1 averaged 4347 kg ha⁻¹, compared with 4011 kg ha⁻¹ for Cardinal in the same trials. IL 85-3132-1 is several days earlier and 2.5 to 5 cm shorter than Cardinal. IL 85-3132-1 has high test weight. Test weight of IL 85-3132-1 has averaged 22 kg m⁻³ more than Cardinal in 30 tests in Illinois.

Coleoptiles and auricles of IL 85-3132-1 are white, and anthers are yellow. A waxy bloom is present on the stem, and internodes are hollow. Heads of IL 85-3132-1 are awnless, tall and inclined to nodding at maturity. Glumes of IL 85-3132-1 are midlong and midway, with a narrow shoulder and strong beaks. The glumes are narrow, short, and obtuse. Kernels are rounded, and the crease is narrow and smooth. The awn is short, midsized, and collared on most kernels.

IL 85-3132-1 is moderately resistant to wheat yellow mosaic virus and barley yellow dwarf virus. IL 85-3132-1 is slightly resistant to moderately susceptible to leaf rust (caused by Puccinia recondita Roberge ex Desmaz.) and is susceptible to powdery mildew (caused by Erysiphe graminis DC. f. sp. tritici Eriks). IL 85-3132-1 is resistant to Biotypes GP, E, and B and susceptible to Biotypes C, D, and L of the Hessian fly [(Mayetiola destructor Say)]. It has not been evaluated with other biotypes.

Based on evaluations conducted by the USDA-ARS Quality Lab. at Wooster, OH, IL 85-3132-1 has acceptable quality for milling and baking. Milling and baking quality of IL 85-3132-1 have been as good as or better than Cardinal in most evaluations.

Breeder seed of IL 85-3132-1 will be maintained at the USDA Agricultural Experiment Station, Urbana, IL 61801. IL 85-3132-1 is licensed for nonexclusive brand labeling through Illinois Agricultural Experiment Station, Urbana, IL 61801. Breeder seed of IL 85-3132-1 will be maintained at the USDA-ARS U.S. Agricultural Research Station at Salinas, CA, and will be provided to sugarbeet breeders and researchers in small amounts upon written request. Recipients of seed are asked to make appropriate acknowledgment of the source of the germplasm if used for a new population, parental line, cultivar, or hybrid.

References and Notes


We gratefully acknowledge the assistance of D.E. Cler and M.H. Yu in the development of IL 85-3132-1, and the assistance of E.D. Nafziger in the evaluation of IL 85-3132-1 in performance tests in Illinois.

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REGISTRATION OF GERMPLASM

Registration of Root-Knot Nematode Resistant Beet Germplasm M66

Beet (Beta vulgaris subsp. maritima L.) germplasm line M66 (Reg. no. GP-166, PI 586688) was developed by the USDA-ARS in cooperation with the California Beet Growers Association, Ltd., and was jointly released in January 1995. This germplasm line segregates for resistance to root-knot nematode (Meloidogyne spp.).

M66 is a multigerm, self-fertile (at low rates) line derived from accession WB 66, designated PI 546387. M66 segregates for bolting, growth habit, and stem pigmentation. To screen for resistance, individual plants were grown in 3.8-l pots after cuttings were rooted in 30-cm pots. Plants were grown in walk-in growth chambers at 24°C and watered as needed. Each pot received 400 ml of a 15-ppm Hoagland’s solution. On each plant, 10 tuberous roots, from just below the soil surface, were inoculated with 1000 second-stage M. incognita Race 1 juveniles. After 4 to 6 wk, individual seedlings were rated resistant or susceptible.

When susceptible plants were identified, 10 to 20 seedlings were removed and grown in 3-gallon containers in a greenhouse. After 4 to 6 wk, the progeny were rated resistant or susceptible. A minimum of 50 seedlings derived from the initial accession were rated resistant. From these interpollinations of plants selected for resistance, 42% were resistant. When these resistant selections were crossed to nonresistant sugarbeet cultivars, about 23% were resistant (1). Resistance was based on individual test plants with 0 to 10 galls and/or protuberances per root system and with little or no detectable nematode reproduction. M66 is a multigerm, and increased from WB 66 resistant plants. The nematode resistance derived from WB 66 is heritable (1). It will be of value as a source of root-knot nematode resistant germplasm for commercial beet breeding and root-knot nematode resistance studies.

Breeder seed will be maintained at the USDA-ARS, U.S. Agricultural Research Station at Salinas, CA, and will be provided to sugarbeet breeders and researchers in small amounts upon written request. Recipients of seed are asked to make appropriate acknowledgment of the source of the germplasm if used for a new population, parental line, cultivar, or hybrid. Breeders of sugarbeets are asked to make appropriate acknowledgment of the source of the germplasm if used for a new population, parental line, cultivar, or hybrid.

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