REGISTRATIONS OF CULTIVARS

Registration of ‘Hopewell’ Wheat

‘Hopewell’ soft red winter wheat (Triticum aestivum L.) (Reg. no. CV-909, PI 595678) was developed by the Ohio State University-Ohio Agricultural Research and Development Center (OSU-OARDC) and released in February 1995. Previous experimental numbers for Hopewell were ‘R19182B-33-2’ and ‘OH490’. Hopewell was released because of its superior yields, excellent straw strength, and diverse pedigree. Hopewell was named after the Native American mound building peoples that flourished in the Ohio valley 2100 yr ago.

Hopewell’s pedigree is ‘Logan’/‘Hart’/3270A/‘Rousalka’/3/TN1685/‘IA22’/6767/216-6-3 (Lafever, 1968; Sechler et al., 1977). 3270A was an Ohio experimental line with the pedigree: 2669F/‘Logan’. 2669F was an Ohio experimental F2 population with the pedigree ‘S410’/‘Logan’/‘Logan’/‘Arthur’ (Patterson et al., 1974). S410 was a dwarf spring wheat of unknown ancestry. TN1685 was an Ohio experimental line from the cross ‘Heines VII’/Pur5752cl-7/‘Telbot’ (Whiteside and Grif-fler, 1964). Pur5752cl-7 was an Indiana AES experimental line. 6767 was an Ohio experimental line with the pedigree TN1493/Pur 5724B3-5P-8-2. TN1493 was an Ohio experimental line with the pedigree ‘Redcoat’/TN1345 (Patterson et al., 1978). TN1345 was an Ohio experimental line with the pedigree ‘Lucas/CIttr 12530 (Heyne, 1960). Materials received through the International Rust and Powdery Mildew Nursery Program include Rousalka (PI520076), a winter wheat cultivar developed by CIMMYT; ‘IA22’ (IAPAR 22-Guarauna), a T. aestivum cultivar developed in Brazil; and 216-6-3, a French experimental line of unknown pedigree possessing resistance to Stagonospora nodorum (Berk.) Castellani & E.G. Germano.

The final cross, designated R19182B, was made by H.N. Lafever in 1982. The population R19182B was advanced without selection to the F3 generation at the OSU-OARDC research farm, Wooster OH. Thirty spikes were harvested randomly. The F4 generation was evaluated for maturity, height, and disease resistance as 30 hill plots, each containing grain from a single F3 spike. Two spikes were selected from a single F4 hill plot based on visual selection for height, heading date, and resistance to powdery mildew (caused by Erysiphe graminis D.C. f. sp. tritici Ém. Marchal; syn. Blumeria graminis (DC.) E.O. Speer). The F5 generation was evaluated for maturity, height, and disease resistance as two hill plots, each containing grain from a single F4 spike. Two spikes were selected from a single F5 hill plot based on visual selection for height, heading date, and resistance to powdery mildew, glume blotch, leaf rust (caused by Puccinia triticina Eriks.), standability, and uniformity. Harvested grain was evaluated for yield, test weight, and milling and baking quality. R19182B-33-2 was advanced from the F7-F10 generation in replicated yield trials, initially at Wooster and then throughout Ohio. R19182B-33-2 was renamed OH490 in 1997.

Selected hill plots were harvested and advanced with selection for uniformity for two more generations. In 1994, evaluation was compiled from selected uniform purifica-tion drill strips and grown as Breeder Seed by the International Seed, Croton, OH.

The juvenile growth habit of Hopewell is erect. The juvenile growth habit of Hopewell is erect. At Zadoks growth stage 45 (boot stage) is dark 11.04; x = 0.327; y = 0.428), as determined by the USDA Cereal Disease laboratory, St. Paul, MN. Infection levels were recorded as % of the total plant infected.

The last rachis internode is glabrous. Glumes are medium long, and wide with oblique shoulders and white beaks. Chaff is red (Y = 20.31; x = 0.384; y = 0.3% with the pedigree ‘Redcoat’/TN1345 (Patterson et al., 1978). TN1345 was an Ohio experimental line with the pedigree ‘Lucas/CIttr 12530 (Heyne, 1960). Materials received through the International Rust and Powdery Mildew Nursery Program include Rousalka (PI520076), a winter wheat cultivar developed by CIMMYT; ‘IA22’ (IAPAR 22-Guarauna), a T. aestivum cultivar developed in Brazil; and 216-6-3, a French experimental line of unknown pedigree possessing resistance to Stagonospora nodorum (Berk.) Castellani & E.G. Germano.

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In 22 location-years of replicated yield trials between 1991 and 1994, Hopewell averaged 4465.1 kg ha−1 compared with Freedom (4371.2 kg ha−1) (Gooding et al., 1997). At locations in northern and western Ohio, where most of the wheat crop is grown, Hopewell averaged 4351.1 kg ha−1 compared with Freedom (4371.2 kg ha−1). Hopewell’s heading date was earlier than Freedom (Day of Year 144 vs. 147). Straw strength and baking quality, as determined by tests at the USDA-ARS Soft Wheat Quality Laboratory in Wooster, OH. Data for uniformity was compiled from selected uniform purification drill strips and grown as Breeder Seed by the International Seed, Croton, OH.

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