REGISTRATION OF IRRIDUR DURUM WHEAT*
(Reg. No. 667)

D.W. Sunderman and Brendan O’Connell

*IRRIDUR’ (Triticum turgidum L. var. durum), CI 17423, is a spring durum wheat that evolved from the cross ‘Yakultana 54’/‘Norin 10’/‘Brevor’, Sel 21-1c/3/‘Sinaloa’#2/4/‘Thatchet’/5/‘Sentry’ made by Drs. C.O. Quaislet and Y.P. Puri in California. It was among 300 head selections made from F2 lines grown in the Tulelake, Calif., durum program in 1970. F2 and F2 head rows of these selections were grown in the 1971 and 1972 Aberdeen rust nurseries and Irridur resulted from a bulk of one of the stripe rust resistant F2 rows. Irridur was tested as ID0093 in the Western Durum Nursery from 1974 until released and was grown in large commercial size acreages in 1978 and 1979 to determine the feasibility of growing good quality irrigated durums in southern Idaho. Irridur was released in 1980 by the Idaho Agric. Exp. Stn. and ARS-USDA.

Irridur is a semidwarf, medium-maturing cultivar with moderately short, stiff straw. The spike is awned, oblong, dense, and erect to inclined. Awns have a tendency to dehisc at maturity. Glumes are glabrous, yellowish white, long and wide. Shoulders are narrow and elevated and the beaks are midwide, acuminate, and 2 to 3 mm long. Awns are yellowish white and 5 to 13 cm long. The kernels are amber, hard, long, and elliptical with a mid-sized germ, a narrow mid-deep crease, rounded cheeks, and a very short brush (essentially none). Irridur has been resistant to the prevalent races of stripe rust (caused by Puccinia striiformis West.) and leaf rust (caused by Puccinia recondita Rob. ex. Desm. f. sp. tritici) found in the Pacific Northwest, but is susceptible to powdery mildew (caused by Erysiphe graminis DC. f. sp. tritici E. Marchal).

Irridur is the first durum wheat grown under Idaho irrigated conditions that produced grain with acceptable quality for semolina products and produced yields that were competitive with the hard red spring wheats (Triticum aestivum L.). The average yield of Irridur has equaled that of ‘Wandell,’ a low protein durum and ‘Borah,’ a commercially grown hard red spring wheat in 3-year testing under irrigation at Aberdeen. Irridur yielded 11 and 120% of ‘Cando’ and ‘Modoc,’ respectively, in the same 3-year averages. The test weight of Irridur has been higher than those of Wandell, Cando, and Modoc.

When fertilized and irrigated properly, Irridur has generally produced grain with satisfactory protein content and milling and spaghetti processing characteristics.

Breeder seed of Irridur will be maintained by the Univ. of Idaho, Aberdeen Research and Extension Center, P.O. Box AA, Aberdeen, ID 83210.

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REGISTRATION OF KS145 ALFALFA GERMPLASM^ (Reg. No. GP 123)

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KS145 alfalfa [Medicago sativa L.] was released by the Kansas Agric. Exp. Stn. and USDA-ARS in November 1981. It provides resistance to anthracnose caused by Colletotrichum trifolii Bain., race 1; bacterial wilt caused by Corynebacterium insidiosum (McCull.) H. L. Jens.; downy mildew caused by Peronospora trifoliorum d. By.; Fusarium wilt caused by Fusarium oxysporum Schlect f. sp. medicaginis (Weimer) Snyd. and Hans.; Phythophthora root rot caused by Phytophthora megasperma Drechs., pea aphid [Acyrthosiphon pisum (Harris)], and spotted alfalfa aphid [Tetrasporus maculata (Buckton)] in one germplasm pool.

KS145 was derived from Chilean (‘Cody’) and Flemish (‘DuPuits’) alfalfa germplasm. Approximately 75 pea aphid-resistant plants selected from DuPuits were intercrossed (hand pollinated in greenhouse) with 75 spotted alfalfa aphid-resistant Cody plants. The resultant population was subjected to cyclic recurrent phenotypic selection for resistance to anthracnose (four cycles), bacterial wilt (two cycles), downy mildew (five cycles), Phytophthora root rot (one cycle), pea aphid (six cycles), and spotted alfalfa aphid (six cycles). Following the initial cross, independent culling was practiced for the listed traits but all traits were not included in each cycle. Approximately 125 plants from the last cycle were intercrossed by hand in the greenhouse to produce syn 1 seed. Syn 2 seed was produced by intercrossing 450 syn 1 plants using honeybees in a field cage.

In an anthracnose (race 1) seedling-resistance test at Raleigh, N.C., the percentage of resistant plants for KS145, the resistant control ‘Arc,’ and the susceptible control ‘Saranac’ were 80, 76, and 4, respectively.

Seedling tests to evaluate resistance to downy mildew, bacterial wilt, pea aphid, and spotted alfalfa aphid were conducted at Manhattan, Kan. KS145 and resistant and susceptible controls showed the following percentages of resistant plants in tests with three downy mildew isolates: KS145 = 84; Saranac = 44; ‘Kanza’ = 2 for isolate I-5; KS145 = 36, Saranac = 16; Kanza = 0 for isolate I-7; KS145 = 74, Saranac = 55, Kanza = 0 for isolate I-8. Percentages of plants resistant to bacterial wilt was KS145 = 45, ‘Vernal’ (resistant control) = 38, ‘Narragansett’ (suspectible control) = 1. Percentages of seedlings surviving after infestation with pea aphid biotypes found in Kansas were 77, 72, and 2 for KS145, Kanza (resistant control) and ‘Ranger’ (susceptible control), respectively. Percentages of seedlings resistant to the spotted alfalfa aphid were 90, 76, and 5 for the same entries.

Resistance evaluation tests for Fusarium wilt and Phytophthora root rot were conducted at St. Paul, Minn. Percentages of plants resistant to Fusarium wilt were 49, 83, 61, and 1 for KS145, ‘Moapa 69’, ‘Agate’, and ‘MNGN-1’ (susceptible, respectively. Percentages of plants resistant to Phytophthora root rot were: KS145 = 24, Agate (resistant) = 58, Saranac (susceptible) = 3.

KS145 and ‘Riley’ were similar in spring growth and recovery after cutting at Manhattan, Kan. Fall dormancy of KS145 and Ranger were similar in a trial at St. Paul, Minn.

Ten grams of KS145 syn 2 seed are available to each applicant upon written request and agreement to appropriately recognize its source as a matter of open record when this germplasm con-