Registration of Germplasms

REGISTRATION OF KS167 ALFALFA GERMPLASM

KS167 ALFALFA germplasm (Medicago sativa L.) (Reg. no. GP133) was released by the Kansas Agricultural Experiment Station and the USDA-ARS in April 1983. It provides resistance to anthracnose caused by Colletotrichum trifolii Bain, bacterial wilt caused by Corynebacterium insidiosum (McCull.) H. L. Jens., downy mildew caused by Peronospora trifoliorum d By., Fusarium wilt caused by Fusarium oxysporum Schlecht f. sp. medicaginis (Mong.) Snyder and Hans, Phytophthora root rot caused by Phytophthora megasperma Drechs. f. sp. medicaginis Kuan and Erwin, pea aphid [Acyrthosiphon pisum (Harris)], and spotted alfalfa aphid [Theroaphis maculata (Buckton)].

KS167 was derived from NC-83-2, a broad-based alfalfa population released by members of the NC-83 Regional Project (1). The population was subjected to recurrent phenotypic selection for resistance to anthracnose (4 cycles), bacterial wilt (2 cycles), downy mildew (7 cycles), Fusarium wilt (2 cycles), Phytophthora root rot (6 cycles—4 in greenhouse, 2 in field), pea aphid (5 cycles), and spotted alfalfa aphid (5 cycles). Independent culling was practiced but all pests were not included in each cycle.

Approximately 102 plants from the last cycle were intercrossed by hand pollination in the greenhouse. Syn 2 seed was produced by intercrossing approximately 250 syn 1 plants in a field cage. Honeybees (Apis mellifera L.) were used for pollination.

In an anthracnose (race 1) seedling resistance test at Raleigh, NC, the percentage of resistant plants for KS167, the resistant control 'Arc', and the susceptible control 'Saranac' were 80, 76, 4, respectively. Resistance evaluation tests for bacterial wilt, Fusarium wilt and Phytophthora root rot were conducted at St. Paul, Minn. Percentages of plants resistant to bacterial wilt were 38, 33, 0.0 for KS167, 'Vernal' (resistant) and 'Narrangansett' (susceptible), respectively. Percentages of plants resistant to Fusarium wilt were 77, 68, 5 for KS167, 'Agate' (resistant), and MNGN-1 (susceptible), respectively. Percentages of plants resistant to Phytophthora root rot were 33, 35, 3.0 for KS167, Agate (resistant), and Saranac (susceptible), respectively.

Seedling tests to evaluate resistance to downy mildew, pea aphid and spotted alfalfa aphid were conducted at Manhattan, Kans. KS167 and resistant and susceptible controls showed the following percentages of resistant plants in tests with three downy mildew isolates: KS167 = 86, Saranac = 44, 'Kanza' = 2, for isolate 1-5; KS167 = 72, Saranac = 16, Kanza = 0, for isolate 1-7; KS167 = 69, Saranac = 55, Kanza = 0, for isolate 1-8. Percentages of seedlings surviving after infestation with pea aphid biotypes found in Kansas were 88, 78, 2 for KS167, Kanza (resistant control), and 'Saranac' (susceptible control), respectively.

References and Notes


REGISTRATION OF LEAF RUST RESISTANT BARLEY COMPOSITE CROSS XLI

A SIX-ROWED spring barley (Hordeum vulgare L.) GP63) male sterile-facilitated recurrent selection, designated Composite Cross (CC) XLI was released by the Montana Agricultural Experiment Station. This population contains numerous sources of resistance to Puccinia hordei Otth., the causal organism in a background of diverse agronomic types.

CC XLI contains the following germplasm: 'Germ' (CI 2930) msg 10, a genetic male sterile line with good combining ability; (2) fifteen six-rowed cultivars, selected for their agronomic characteristics and adaptability of environments ['Atsel' (CI 6250), 'Beem', 'Germ' (CI 7248), 'Onitani' (CI 10421), 'CM 67' (CI 13782), 'Atlas 68' (CI 13821), 'Nordic' (CI 15216), 'Stensrud M21' (CI 15481), 'Arimont' (CI 15509), 'Rainless Vantage', and 'Waxy Titan']; and (3) thirty-seven lines selected for their resistance to isolates of P. hordei from U.S. and the Mediterranean region (1) (CI nos. 1016, 1021, 1249, 1257, 2524, 3390, 3391, 3410, 3634, 3730, 3737, 4974, 4978, 5051, 6193, 6483, 6654, 6748, 10081, 11420, 11533, 11577, 11801, 11808, 13821, 14048; P.I. 371630, Ford 1203, CCIM-13, 386-16-2, 7480, 1016, 1021, 1249, 1257, 2524, 3390, 3391, 3410, 3634, 3730, 3737, 4974, 4978, 5051, 6193, 6483, 6654, 6748, 10081, 11420, 11533, 11577, 11801, 11808, 13821, 14048; P.I. 371630, Ford 1203, CCIM-13, 386-16-2, 'Mari/Athenais', RCB 9, RCB 10, and 14048). The resistant lines were added in several stages up to the third cycle of recurrent selection.

Four cycles of recurrent selection have been conducted yearly at locations in Texas and the Mediterranean region. In 1982 the population was grown at locations in Texas, the Mediterranean region, and 14048; P.I. 371630, Ford 1203, CCIM-13, 386-16-2, 'Mari/Athenais', RCB 9, RCB 10, and 14048. Selection was based on natural infection by P. hordei; leaf rust resistance. Selection was based on natural infection by P. hordei; leaf rust resistance.