REGISTRATION OF CROP GERMPLASMS

REGISTRATION OF KS153BA3P4 ALFALFA GERMPLASM

KS153BA3P4 alfalfa germplasm (Medicago sativa L.) (Reg. no. GP–223, PI 536014) was released by the USDA-ARS and the Kansas Agricultural Experiment Station on 7 July 1989. It provides resistance to anthracnose (Race 1) (caused by Colletotrichum trifolii Bain), bacterial wilt (caused by Clavibacter michiganense subsp. insidiosum (McCull.) Davis et al., 1984), downy mildew (caused by Peronospora trifoliorum d By.), Fusarium wilt (caused by Fusarium oxysporum Schlecht. f. sp. medicaginis (Weimer) Snyd. & Hans.), Phytophthora root rot (caused by Phytophthora megasperma Drechs. f. sp. medicaginis Kuan & Erwin), pea aphid ([Acyrthosiphon pisum] (Harris)], blue alfalfa aphid ([Acyrtosiphon kondoi Shinji]), and spotted alfalfa aphid ([Theroaphis maculata] (Buckton)].

KS153BA3P4 was derived from KS70AN4 BW2M5P1PA3SA3. The 96 parental plants of KS70 were selected from 20 experimental populations, based on superior growth in the fall. The parental plants were intercrossed by hand pollination in a greenhouse. The resultant population was subjected to recurrent phenotypic selection for resistance to anthracnose (4 cycles), bacterial wilt (2 cycles), downy mildew (5 cycles), Phytophthora root rot (1 cycle), pea aphid (3 cycles), and spotted alfalfa aphid (3 cycles). Independent culling was practiced, but all pests were not included in each cycle. Over 75 plants were intercrossed by hand pollination in a greenhouse to initiate each cycle of selection. Seed from the last cycle was designated KS70AN4BW2M5P1PA3SA3. Thirty-five plants, with tolerance to frost in the field, were selected from this population and intercrossed by hand pollination in the greenhouse to produce KS153. Two cycles of selection were conducted in KS153 for tolerance to frost in the field. Cyclic selection was conducted in the frost-tolerant population for resistance to the blue alfalfa aphid (3 cycles) and Phytophthora root rot (4 cycles). Seed from the last cycle was designated KS153BA3P4 Syn 1. The Syn 2 seed was produced by intercrossing approximately 250 Syn 1 plants in a field cage. Leafcutter bees (Megachile rotundata F.) were used for pollination. The estimated germplasm constitution of the population is: 58% Chilean, 16% Flemish, 13% M. varia, 6% Turkistan, 4% Ladak, and 3% M. falcata.

At St. Paul, MN, the average severity indexes for bacterial wilt were: KS153BA3P4 = 2.84, 'Ranger' (R)(1) = 2.61, and 'Narragansett' (S) = 3.67. Percentages of plants resistant to Fusarium wilt were: KS153BA3P4 = 55, 'Agate' (R) = 54, and 'Mn Gn-1' (S) = 1. Percentage of plants resistant to Phytophthora root rot were: KS153BA3P4 = 53, Agate (R) = 43, and 'Saranac' (S) = 8.

Seedling tests to evaluate resistance to anthracnose, downy mildew, blue alfalfa aphid—KS153BA3P4 = 79, 'Ranger' (R) = 84, and Ranger (S) = 8. KS153BA3P4 has no resistance for frost tolerance.

ASI scores in a fall dormancy trial at St. Paul were: KS153BA3P4 = 5.65, 'DuPuits' = 4.70, Ranger = 6.47.

Five grams of KS153BA3P4 seed are available upon written request. It is requested that appropriate credit be given when KS153BA3P4 contributes to the development of a new cultivar or hybrid.

Seed stocks of KS153BA3P4 are maintained by the Department of Agronomy, Kansas State University, Manhattan, KS 66506.

E. L. Sorensen,* D. L. Stuteville, AND E. K. Horber (2)

References and Notes

1. R = Resistant control; S = Susceptible control.

The authors gratefully acknowledge D.K. Barnes, U.S. Department of Agriculture, St. Paul, MN for the evaluations conducted.

REGISTRATION OF KS71AN2BA2M2P4PA2SA2 ALFALFA GERMPLASM

KS71AN2BA2M2P4PA2SA2 alfalfa (Medicago sativa L.) germplasm (KS71), (Reg. no. GP–224, PI 536015), was released by the USDA-ARS and the Kansas Agricultural Experiment Station in July 1989. This germplasm provides resistance to anthracnose (caused by Colletotrichum trifolii), bacterial wilt (caused by Clavibacter michiganense subsp. insidiosum (McCull.) Davis et al.), blue alfalfa aphid (Acyrthosiphon pisum (Harris)], pea aphid ([Acyrtosiphon kondoi Shinji), and spotted alfalfa aphid ([Theroaphis maculata] (Buckton)].

The 78 parental plants of KS71 were selected from 20 experimental populations, based on superior growth in the fall. The parental plants were interpollinated by hand in the greenhouse, and the resultant population was subjected to recurrent phenotypic selection for resistance to anthracnose (2 cycles), blue alfalfa aphid (2 cycles), downy mildew (2 cycles), Phytophthora root rot (1 cycle), pea aphid (3 cycles), and spotted alfalfa aphid (3 cycles). Independent culling was practiced, but all pests were not included in each cycle. Over 75 plants were intercrossed by hand pollination in a greenhouse to initiate each cycle of selection. Seed from the last cycle was designated KS71AN2BA2M2P4PA2SA2. Thirty-five plants, with tolerance to frost in the field, were selected from this population and intercrossed by hand pollination in the greenhouse to produce KS71. Two cycles of selection were conducted in KS71 for tolerance to frost in the field. Cyclic selection was conducted in the frost-tolerant population for resistance to the blue alfalfa aphid (3 cycles) and Phytophthora root rot (4 cycles). Seed from the last cycle was designated KS153BA3P4 Syn 1. The Syn 2 seed was produced by intercrossing approximately 250 Syn 1 plants in a field cage. Leafcutter bees (Megachile rotundata F.) were used for pollination. The estimated germplasm constitution of the population is: 58% Chilean, 16% Flemish, 13% M. varia, 6% Turkistan, 4% Ladak, and 3% M. falcata.

At St. Paul, MN, the average severity indexes for bacterial wilt were: KS153BA3P4 = 2.84, 'Ranger' (R)(1) = 2.61, and 'Narragansett' (S) = 3.67. Percentages of plants resistant to Fusarium wilt were: KS153BA3P4 = 55, 'Agate' (R) = 54, and 'Mn Gn-1' (S) = 1. Percentage of plants resistant to Phytophthora root rot were: KS153BA3P4 = 53, Agate (R) = 43, and 'Saranac' (S) = 8.

Seedling tests to evaluate resistance to anthracnose, downy mildew, blue alfalfa aphid—KS153BA3P4 = 79, 'Ranger' (R) = 84, and Ranger (S) = 8. KS153BA3P4 has no resistance for frost tolerance.

ASI scores in a fall dormancy trial at St. Paul were: KS153BA3P4 = 5.65, 'DuPuits' = 4.70, Ranger = 6.47.

Five grams of KS153BA3P4 seed are available upon written request. It is requested that appropriate credit be given when KS153BA3P4 contributes to the development of a new cultivar or hybrid.

Seed stocks of KS153BA3P4 are maintained by the Department of Agronomy, Kansas State University, Manhattan, KS 66506.

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References and Notes

1. R = Resistant control; S = Susceptible control.

The authors gratefully acknowledge D.K. Barnes, U.S. Department of Agriculture, St. Paul, MN for the evaluations conducted.

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