Registration of Germplasms

REGISTRATION OF DANEB I, DANEB I BW1, AND DANEB I P2, ALFALFA GERMPLASMS WITH MULTIPLE PEST RESISTANCE

Daneb I (Reg. no. GP 157), Daneb I BW1 (Reg. no. GP 158), and Daneb I P2 (Reg. no. GP 159) winter-hardy alfalfa germplasms (*Medicago sativa* L.) were released by the Nebraska, Minnesota, and South Dakota Agricultural Experiment Stations and USDA-ARS 6 Mar. 1984. They provide resistance to bacterial wilt [caused by *Corynebacterium insidiosum* (McCull.) H. L. Jens.], Phytophthora root rot (caused by *Phytophthora megasperma* Drechs. f. sp. *medicaginis* Kuan and Erwin), pea aphid [*Acyrthosiphon pisum* (Harris)], and spotted alfalfa aphid [*Therioaphis maculata* (Buckton)].

Daneb I was produced by intercrossing 70 clones (selected at the South Dakota Agricultural Experiment Station) resistant in greenhouse tests to each of three leafspot diseases: common leafspot [caused by *Pseudopeziza medicaginis* (Lib.) Sacc.], yellow leaf blotch (caused by *Pseudopeziza jonesii* Nannf.), and summer blackstem (caused by *Cercospora medicaginis* Ell. and Ev.). Of the 70 clones, 33 were selected from seven broad-based experimental synthetics developed at the Nebraska Agricultural Experiment Station from three or four cycles of phenotypic selection for pest resistance and vigor, and 37 were selected from seven experimental synthetics developed at the South Dakota Agricultural Experiment Station for disease resistance combined with broad-crowned, rhizomatous, root proliferation or creeping-rooted types. The South Dakota synthetics included selections from *M. falcata* L., 'Travois', and 'Vernal'. Daneb I BW1 and Daneb I P2 were developed by one and two cycles of phenotypic recurrent selection for resistance to bacterial wilt and to Phytophthora root rot, respectively, in cooperation with the Minnesota, Nebraska, and South Dakota Agricultural Experiment Stations.

Percentages of plants resistant to bacterial wilt for Daneb I, Daneb I BW1, 'Narragansett', 'Ranger', and Vernal were 34, 80, 3, 11, and 36%, respectively, in a Minnesota test. Percentages of plants resistant to Phytophthora root rot for Daneb I, Daneb I P2, 'Saranac', and 'Agate', were 9, 38, 7, and 53%, respectively, in a Minnesota test. Seedling tests for resistance to pea aphids and spotted alfalfa aphids were conducted in Nebraska. Percentages of plants resistant to pea aphids for Daneb I, 'Dawson', and Vernal were 53, 64, and 2%, respectively; and for spotted alfalfa aphid biotypes collected in Nebraska were 44, 46, and 0%, respectively. Percentages of plants resistant to pea aphids for Daneb I P2, Dawson, and Vernal were 40, 55, and 0%, respectively; and for spotted alfalfa aphid biotypes collected in Nebraska were 29, 42, and 0%, respectively.

Daneb I 4-year average forage yields were 96% of Vernal at Highmore, S. Dak. Daneb I and Daneb I P2 2-year average forage yields were 104% of the average of four check cultivars 'Baker', Dawson, 'Riley', and Vernal at Mead, NE. Daneb I P2 2-year average seed yields were in the same range as those of Dawson, Saranac, and Vernal at Fresno, CA, and Caldwell, ID.

Ten grams of seed of Daneb I, Daneb I BW1, and Daneb I P2 are available to each applicant upon written request and agreement to appropriately recognize its source as a matter of open record when this germplasm contributes to the development of a new cultivar or hybrid. Submit seed requests to the Dep. of Agronomy, Univ. of Nebraska, Lincoln, NE 68583.

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References and Notes

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REGISTRATION OF A169, A224, A603, A604, N.S. 31, N.S. 33, N.S. 46, AND N.S. 47 BROAD-CROWNED OR CREEPING-ROOTED ALFALFA GERMPLASMS

A169 (Reg. no. GP 160), A224 (GP 161), A603 (GP 162), A604 (GP 163), N.S. 31 (GP 164), N.S. 33 (GP 165), N.S. 46 (GP 166) and N.S. 47 (GP 167) winter-hardy alfalfa germplasms (*Medicago sativa* L.) were released by the Nebraska Agricultural Experiment Station and USDA-ARS 6 Mar. 1984. They are broad-crowned, root-proliferating or creeping-rooted types of alfalfa.

A169 is a synthetic that originated in 1940 from four plants selected from hybrids that involved *M. falcata* L., *M. glutinosa* M.S., a Turkish selection, and a creeping-rooted alfalfa from Turkey, PI 107298.

A224 is a four-clone synthetic that originated at the Nebraska Agricultural Experiment Station from two clones selected in Nebraska and one clone each from Iowa and Pennsylvania. The parentage traces to various crosses among *M. falcata, M. glutinosa,* PI 107298, 'Cossack', 'Grimm', Kansas Common, 'Ladak', and 'Turkistan'. It has a rhizomatous growth type.

A603 and A604 are synthetics that originated from 5 and 10 clones, respectively, which survived best in 1965 and 1964, respectively, after transplanting in 1960 in a very dry and rough area of native pasture sod near Woodward, OK. A603 originated from one clone selected in Kansas and four clones selected in Oklahoma. A604 originated from four clones selected in Kansas, two from Nebraska, and four from Oklahoma. Origin of the clones has not been completely described. The germplasm came from Canadian creeping-rooted clones, France, Turkey, polycross progeny from selected creeping-rooted clones and crosses of broad-crowned and creeping-rooted plants.

N.S. 31 and 33 are 7-clone and 12-clone synthetics, respectively. Parental clones were creeping-rooted. The clones were selected either from crosses between clones of high general combining ability for forage yield × the best creeping-rooted clones from a large group obtained from Canada and evaluated in Nebraska, or from polycross seed harvested from the best Canadian creepers in a polycross