References and Notes


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REGISTRATION OF PL-PhR ALFALFA GERMPLASM

PL-PhR alfalfa germplasm (Reg. no. GP-0221; PI 531505) was developed at the U.S. Regional Pasture Research Laboratory and released jointly by the USDA-ARS and Nevada Agricultural Experiment Station in October 1988. PL-PhR germplasm provides resistance to leaf loss caused by Phoma medicaginis Malbr. & Roum. var medicaginis (Pmm).

The germplasm is from a polycross of approximately 40 plants from experimental line A102Px and approximately 10 plants each from experimental single crosses A102-5 x A106-4 and A148-2 x A107-4. The parents of the germplasm trace to topcross progenies used in a study of reciprocal recurrent selection reported by Rowe and Hill (1). In that study, individual plants were produced by pollination of plants from MSA-CW3An3 (2) with a bulk of pollen from Apalachee alfalfa. Remnant seed from this study were used to establish a polycross nursery. The resulting polycross progeny were evaluated in a greenhouse for reaction to Pmm, and the most resistant plants within the most resistant families were selected. Single crosses between selected plants were made with the restriction that sibs were not used in the same cross. One family, A102, had a mean score of 1.75 (score scale of 1-5, 1 = resistant) in a trial with a mean score of 4.16. Additional plants from this family were selected and intercrossed to produce A102Px. The single crosses and A102Px were reevaluated for reaction to Pmm, and all plants from A102Px and the above two single crosses were intercrossed in cages in Reno, NV. This seed increase constitutes the germplasm being released.

PL-PhR was evaluated with 59 other experimental lines and cultivars in greenhouse and inoculation-chamber facilities in 1987 at the U.S. Regional Pasture Research Laboratory. It had a mean score of 3.83 on a scale of 1 = clean foliation. PL-PhR was the most resistant entry in the test, with a mean score of 3.83 on a scale of 1 = clean foliation. PL-PhR was developed using recurrent selection reported by Rowe and Hill (1). In Beltsville laboratory tests, B16-PLH had significantly less feeding damage and lower nymphal populations than B16, MSA-CW3AN3, and 'Ranger'. Nymphal populations constituting from each of the screening cycles) were selected for phenotypic selection procedures. A minimum of 75 plants were screened in each of two screening cycles, each with six replications. Twelve clones (six originating from each of the two single crosses) were selected for each of two screening cycles, each with six replications. In Beltsville laboratory tests, B16-PLH had significantly less feeding damage and lower nymphal populations than B16, MSA-CW3AN3, and 'Ranger'. Nymphal populations constituting from each of the screening cycles) were selected for phenotypic selection procedures. A total of 36 plants demonstrating minimal feeding damage and nymphal development were ultimately selected. These were grown in a walk-in growth chamber. Four hundred seedlings of B16, grown in soil-filled flats, were screened in a replicated plant-row field study in 1987 and 1988. The resistance in B16-PLH is thought to be correlated to the development of a new cultivar.

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