Registration of Germplasms

REGISTRATION OF KS108GH5 GLANDULAR-HAIRED ALFALFA GERMPLASM WITH MULTIPLE PEST RESISTANCE

KS108GH5 alfalfa germplasm Reg. no. GP-190 was released by the USDA-ARS, and the Kansas Agricultural Experiment Station in February 1985. It is resistant to the blue alfalfa aphid (Acyrthosiphon kondoi Shinji), pea aphid [Acyrthosiphon pisum (Harris)], spotted alfalfa aphid [Theroaphis maculata (Buckton)], potato leafhopper, Epposca fa-bae (Harris), anthracnose (caused by Colletotrichum trifolii Bain), and downy mildew (caused by Peronospora trifoliorum d By).

KS108GH5 was derived from the original seed of P1346919, a plant introduction from Russia. It was labeled Medicago glutinosa. Later, Gunn et al. (1) identified it as a mixture of the following Medicago sativa L. subspecies: sativa, praefalcata, glornerata, and X varia. The population was characterized by erect glandular hairs on the seed pods and eglandular vegetative organs. We conducted five cycles of recurrent phenotypic selection for erect glandular hairs on the seed parts. Seven percent of the first and 100% of the fifth-cycle plants had erect glandular hairs on the seed parts. Hair density varied widely among plants in the KS108GH5 population but plants with a high density of hairs on the vegetative parts were prevalent.

Seedling tests to evaluate resistance to the blue alfalfa aphid, pea aphid, spotted alfalfa aphid, and downy mildew were conducted at Manhattan, KS.

Percentages of resistance to aphid biotypes in Kansas were: spotted alfalfa aphid—KS108GH5 = 89, 'Kanza' (resistant control) = 80, 'Ranger' (susceptible control) = 10; blue alfalfa aphid—KS108GH5 = 43, 'CUF 101' (susceptible control) = 10, 'Buffalo' (susceptible control) = 0; pea aphid—KS108GH5 = 69, Kanza (resistant control) = 56, Ranger (susceptible control) = 0.

Germplasm KS108GH5, resistant control Kanza showed the following percent-
ages of resistant plants in tests with the fungus isolates: I5—KS108GH5 = 44, Sar-
anae = 2, I7—KS108GH5 = 16, Saranac = 10, I8—KS108GH5 = 59, Saranac = 58, anthracnose (race 1) seedling test at Reno, NV, the per-
centages of resistant plants were: KS108GH5 (the resistant control) = 76, and the Saranac (susceptible control) = 10.

The KS108GH5 germplasm has not shown resistance to the potato leafhopper. However, hair density of 5 per mm² on the stem was seriously damaged by leafhoppers in the field or in growth chambers, while those without hairs were severely damaged.

Two grams of KS108GH5 seed are available to each applicant upon written request and agreement to appropriately recognize its source as a matter of open record. This germplasm contributes to the development of a new cultivar or hybrid.

Seed stocks of KS108GH5 syn 2 are maintained by the Agronomy, Kansas State University, Manhattan, KS 66506.

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References and Notes
