

# REGISTRATION OF GERMPLASMS

## REGISTRATION OF KS94GH6 GLANDULAR-HAIRED ALFALFA GERMPLASM WITH MULTIPLE PEST RESISTANCE

KS94GH6 alfalfa (*Medicago sativa* L.) germplasm, Reg. no. GP-194 was released by the USDA-ARS, and the Kansas Agricultural Experiment Station in January 1986.

KS94GH6 was derived from diploid ( $2n=2x=16$ ) *Medicago glandulosa* David., an *M. falcata* type with erect glandular hairs on peduncles, pedicels, and pods (where they are especially dense). We selected plants with glandular hairs on their vegetative parts. The population was subjected to six cycles of recurrent phenotypic selection to increase hair density and distribution. Twelve percent of plants in the first and 100% of those in the sixth cycle had erect glandular hairs on the vegetative parts. However, hair density and distribution varied widely among plants.

Plants demonstrating high resistance to alfalfa weevil [*Hypera postica* (Gyllenhal)] larvae and antixenosis and resistance to oviposition by potato leafhopper [*Empoasca fabae* (Harris)] and alfalfa weevil adults were easily selected from KS94GH6. Also, plants with high resistance to the blue alfalfa aphid [*Acyrtosiphon kondoi* Shinji], pea aphid [*Acyrtosiphon pisum* (Harris)], and spotted alfalfa aphid [*Therioaphis maculata* (Buckton)] were selected with frequentation.

We evaluated the population for resistance to four diseases. KS94GH6 and resistant and susceptible controls showed the following percentages of symptomless plants in tests with three downy mildew fungus (*Peronospora trifoliorum* d By.) isolates:

Isolate	KS94GH6	'Saranac'	'Kanza'
I5	76	42	3
I7	65	17	1
I8	62	58	1

Seedling resistance to rust (caused by *Uromyces striatus* Schroet.), summer black stem (caused by *Cercospora medicaginis* Ell. & Ev.), and anthracnose (caused by *Colletotrichum trifolii* Bain) was evaluated in growth chambers. Resistance scores were: rust (scale of 1 = no symptoms to 5 = many medium to large open pustules) - KS94GH6 = 2.0, MSACW3AW3 (resistant control) = 2.6, Saranac (susceptible control) = 4.0; summer black stem (scale of 1 = no symptoms to 5 = dead) - KS94GH6 = 3.4, 'Riley' (resistant control) = 3.6, 'Lahontan' (susceptible control) = 4.7; anthracnose (scale of 1 = no symptoms to 5 = dead) - KS94GH6 = 3.8, 'Arc' (resistant control) = 1.6, Saranac (susceptible control) = 3.9.

Two grams of KS94GH6 seed 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.

Seed stocks of KS94GH6 are maintained by the Dep. of Agronomy, Kansas State University, Manhattan, KS 66506.

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### References and Notes

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## REGISTRATION OF TWO COTTON GERMPLASM LINES WITH RESISTANCE TO BOLL WEEVIL

Two germplasm lines, MWR-1 and MWR-2, of cotton (*Gossypium hirsutum* L.) (Reg. no. GP-268 and GP-269) were released by USDA-ARS and the Mississippi Agricultural and Forestry Experiment Station in 1985. MWR-1 and MWR-2 carry resistance to the boll weevil, *Anthonomus grandis* Boh.

MWR-1 and MWR-2 were derived from the photoperiodic primitive race stocks T-326 and T-1180, respectively. The race stocks were grown in Mexico and evaluated for boll weevil resistance. Boll weevils laid 35.8 and 30.5%, respectively, as many eggs on the two race stocks as on the upland control M-8 in a laboratory test (1).

The two photoperiodic stocks were converted to day-neutral stocks following the procedure outlined by McCarty et al. (2). After the second backcross, seed cotton from one open-pollinated boll was harvested from each BC<sub>2</sub>F<sub>2</sub> plant which set fruit and seed was bulked for increase. Plants in the BC<sub>2</sub>F<sub>4</sub> generation (from open-pollinated BC<sub>2</sub>F<sub>3</sub> seed) were tested for resistance to boll weevil oviposition.

Boll weevils laid 57 and 54% as many eggs on the converted stocks as on 'Stoneville 213' (ST-213) in a no-choice laboratory test. In field plots at Baton Rouge, LA, the converted stocks sustained 65 and 59% as much damage as ST-213 and had 50 and 53% fewer squares that produced weevils (J.E. Jones, personal communication, 1985). The mechanism(s) of resistance are unknown. The two germplasm lines have lower lint percentages and smaller bolls than ST-213 but fiber properties are similar to those of ST-213. Lint yield is about one-half that of ST-213.

Small amounts of seed (open-pollinated BC<sub>2</sub>F<sub>3</sub>) of these germplasm lines may be obtained from USDA-ARS, Crop Science Research Laboratory, P.O. Box 5367, Mississippi State, MS 39762-5367.

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### References and Notes

1. Jenkins, J.N., W.L. Parrott, J.C. McCarty, and A.T. Earnheart. 1978. Evaluation of primitive races of *Gossypium hirsutum* L. for resistance to boll weevil. Mississippi Agric. For. Exp. Stn. Tech. Bull. 91.
2. McCarty, J.C., Jr., J.N. Jenkins, and W.L. Parrott, 1979. The conversion of photoperiodic primitive race stocks of cotton to day-neutral stocks. Mississippi Agric. For. Exp. Stn. Res. Rep. Vol. 4, no. 19.
3. Research agronomist, research geneticist, and research entomologist, respectively, USDA-ARS, Crop Science Res. Lab., P.O. Box 5367, Mississippi State, MS 39762. Cooperative investigation of USDA-ARS and the Mississippi Agric. Forestry Exp. Stn. Registration by the Crop Sci. Soc. of Am. Accepted 30 Apr. 1986.

## REGISTRATION OF C-22, C-29, C-37 CRAMBE GERMPLASM

C-22 (Reg. no. GP-1), C-29 (Reg. no. GP-2), and C-37 (Reg. no. GP-3) crambe (*Crambe abyssinica* Hochst. ex R.E. Fries) germplasm were developed and released (25 June 1985) by the USDA-ARS at Beltsville, MD as high yielding sources of erucic acid for the chemical industry. They were derived by introgressing germplasm from wild populations into the cultivar 'Indy' using the crossing schemes [(PI 384524 × PI 392327) × (PI 384527 × PI 384522)] × Indy and [(PI 384523 × PI 384529) × (PI 384530 × PI 370747)] × Indy to produce F<sub>1</sub> populations I-1 and I-2, respectively. PI's 370747