REGISTRATION OF GERMPLASM

Registration of MSFWRC Fusarium-Resistant Crimson Clover Germplasm

MSFWRC (Reg. no. GP-1, PI 561569, crimson clover (Trifolium incarnatum L.) germplasm was released by the USDA-ARS and the Mississippi Agricultural and Forestry Experiment Station in 1991. MSFWRC has a high level of resistance to Fusarium wilt caused by a host-specific form of Fusarium oxysporum Schlechtend. (1).

MSFWRC is registered as the second-generation synthetic derived from 18 resistant half-sib families that were intercrossed in isolation with honey bee (Apis mellifera L.) pollen vectors. These families were produced by intercrossing resistant S₄ lines. All resistant lines that contributed to MSFWRC were derived from three S₀ plants of cultivar Tibbee. In the development of resistant inbred lines, repeated cycles of selection and progeny testing were conducted by dipping roots of plants in inoculum of F. oxysporum and evaluating plant survival and the extent of vascular discoloration in roots after 8 wk in the greenhouse. In each cycle of selection, advanced lines were established by selfing 1 to 10 individual, phenotypically resistant plants of each parental line (2). Ninety-four S₄ lines from nonsegregating parents were intercrossed using bees to produce the Syn-1 generation. These were evaluated by half-sib families in 1989 and 1990. Plants were rated for disease severity on a 6-point scale, with 0 = no symptoms and 5 = plant killed by Fusarium wilt. Mean scores of the 18 most resistant families, used to produce MSFWRC, were 0.03 to 0.55 over both years, while mean scores of cultivars Auburn, Autauga, Chief, Dixie, Talladega and Tibbee ranged from 1.21 to 3.58. Disease scores of all 18 families were significantly lower than scores of all cultivars during both years.

Two grams of seed of MSFWRC will be provided to each applicant upon written request. It is requested that appropriate recognition of source will be given when MSFWRC contributes to development of a new germplasm or cultivar or is included in published studies. Seed may be requested from R. G. Pratt, USDA-ARS, Forage Research Unit, P.O. Box 5367, Mississippi State, MS 39762.

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References and Notes


were released jointly by the USDA-ARS and the University of Arizona in 1992. Line 8327 originated from the first cycle of selection within an F₂ population from a massed, extremely early-maturing Pima experimental strain 8327. 84514 originated from a cross of the Pima experimental strain H2067-GE (obtained from D.D. Davis, New Mexico State University), followed by single-plant selection in the F₂, F₃, and F₄ generations (1). 84524 originated from a cross of Pima experimental strain 8004-95-5 with strain H2067-GE (obtained from D.D. Davis, New Mexico State University), followed by single-plant selection in the F₂, F₃, and F₄ generations. All three lines were used for use as parental stocks in interspecific hybrid cultivar development. Each line is short statured, early-maturing Pima S-6 for use as parental stocks in interspecific hybrid cultivar development. Each line is short statured, early-maturing Pima S-6. The above yield levels reflect growing conditions and locations favoring the earlier strains.

Because the original intent was to develop interspecific hybrids, the fiber of the three lines was altered from a Pima ELS quality fiber. Fiber length (2.5% span length) of 8327, 84514, and 84524 were 287, 288, and 235 kN m kg⁻¹, respectively, compared with a strength of 302 kN m kg⁻¹ for Pima S-6. The above yield levels reflect growing conditions and locations favoring the earlier strains.

When used as interspecific hybrid parents, the three lines significantly reduced hybrid plant size and time to crop maturity. Seed (50 g) of 8327, 84514, and 84524 may be obtained from the Pima Breeding and Genetics Unit, USDA-ARS and the Mississippi Agricultural and Forestry Experiment Station in 1991. MSFWRC has a high level of resistance to Fusarium wilt caused by a host-specific form of Fusarium oxysporum Schlechtend. (1).

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