References and Notes


Registration of ORARHR-G93 and ORARHR-M93 Italian Ryegrass Germplasm with Tolerance to Diclofop-Methyl

Two Italian ryegrass (Lolium multiflorum Lam.) germplasms, ORARHR-G93 (Reg. no. GP-72, PI 593742) and ORARHR-M93 (Reg. no. GP-73, PI 593743), with high levels of tolerance to diclofop-methyl ([(+)-2-[(4,4-diclorophenox)phenoxy]propanoic acid] were developed at the USDA-ARS National Forage Seed Production Research Center in cooperation with Oregon State University. The two germplasms were developed through a backcross selection program to obtain near-isofrequent populations with desirable agronomic and seed production traits for Oregon and other northern states. ORARHR-G93 and ORARHR-M93 are different from parental cultivars in frequency of genes conditioning herbicide tolerance in grasses. The germplasms were released on 25 Mar. 1996 by the USDA-ARS and the Oregon, Idaho, and Washington Agricultural Experiment Stations.

ORARHR-G93 and ORARHR-M93 were developed from plants collected in Italian ryegrass populations surviving several treatments of diclofop-methyl in two commercial wheat (Triticum aestivum L.) fields grown near Salem, OR. Open-pollinated seed was harvested from 20 individual plants originating along diagonal transects in one field and from a composite seed sample from the other field. Commercial certified seed of Gulf (1) and Marshall (2) were obtained and used as recurrent maternal parents. Inheritance of tolerance to diclofop at recommended field application rates, but similar to recurrent parents in frequency of genes conditioning all other traits. Diclofop is an aryloxyphenylpropionate, a class of herbicides developed to control grasses in broadleaf crops and some cereals. These germplasms will be useful for further breeding and for studies on development of herbicide tolerance in grasses. The germplasms were released on 25 Mar. 1996 by the USDA-ARS and the Oregon, Idaho, and Washington Agricultural Experiment Stations.

Seed of ORARHR-G93 and ORARHR-M93 will be stored by the USDA-ARS National Forage Seed Production Research Center, and limited quantities of each germplasm will be made available upon request. Appropriate recognition should be given to the source of this germplasm when it contributes to development of a new cultivar or is used in scientific studies. Request seed from the corresponding author.


Registration of Javanese Root-Knot Nematode Resistant Soybean Germplasm Line G93-9223

The soybean [Glycine max (L.) Merr.] germplasm line G93-9223 (GP-181, PI 595099) was developed by the Georgia Agricultural Experiment Stations and released in March of 1995 because of its high level of resistance to the Javanese root-knot nematode [Meloidogyne javanica (Treub) Chitwood] (Mj). G93-9223 has a similar level of resistance to Mj as PI 230977, but higher seed yield. PI 230977 has the highest level of resistance to Mj that has been identified in soybean (1).

G93-9223 is an F1-derived line from the cross G83-559 × (G80-1515 × PI 230977). G80-1515 is a selection from 'Pickett 71' × 'Bedford' (2,3). G83-559 is a selection from D77-6103 × F77-6903. The parentage of D77-6103 is 'Centennial' × J74-47 (4). J74-47 is from the same cross as Bedford. F77-6903 was selected from the cross of 'Forrest' × ('Cobb' × D68-216) (5,6). D68-216 has the same parentage as Forrest.

The F2 plants from the original cross were evaluated for resistance to Mj using greenhouse screening (1). Resistant plants were backcrossed to G80-1515, and the BC1 F2 plants were evaluated for resistance to Mj. Resistant plants were crossed to G83-559, and F2 plants were evaluated for resistance to Mj. The F2,3 and 'Tetrelite' 3.0%, 'Bison' 2.6%, 'Prominade' 2.0%, 'Jackson' 1.5%, 'Caramba' 1.0%, 'Surrey' 0.9%, 'Florida 80' 0.4%, and 'Multimo' 0.0%. With four crosses to the recurrent parent, and by using 60 or more different plants in each crossing cycle, ORARHR-G93 and ORARHR-M93 should have 93.75% of their genetic background in common with Gulf and Marshall, respectively.

The primary difference from the recurrent parent cultivars should be the frequency of genes controlling tolerance to diclofop-methyl. When compared with the recurrent parent cultivars, these germplasms should aid in research related to development of herbicide tolerance in grasses. Seed of ORARHR-G93 and ORARHR-M93 will be stored by the USDA-ARS National Forage Seed Production Research Center, and limited quantities of each germplasm will be made available upon request. Appropriate recognition should be given to the source of this germplasm when it contributes to development of a new cultivar or is used in scientific studies. Request seed from the corresponding author.
