Seed (25 g) of this germplasm line may be obtained from the corresponding author. Recipients of seed are asked to appropriately acknowledge the source of the germplasm if it is used in the development of new germplasm, cultivars, or hybrids.

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References and Notes

Registration of LS-G96 Soybean Germplasm Resistant to Soybean Sudden Death Syndrome and Soybean Cyst Nematode Race 3

Soybean germplasm line LS-G96 [Glycine max (L.) Merr.] (Reg. no. GP-188, PI 603218) was developed by Southern Illinois University at Carbondale from the cross ‘Essex’ × ‘Forrest’ (5,10). LS-G96 was one of eight recombinant inbred lines (RILs) developed with resistance to soybean sudden death syndrome (SDS) [caused by Fusarium solani (Mart.) Sacc. f. sp. glycine] and to soybean cyst nematode (SCN) (Heterodera glycines Ichinohe) Race 3 (9). It was released in 1996 to provide for marker-assisted selection for SDS resistance (7). LS-G96 is a redesignation for RIL ExF78 and descends from an F5 plant selected from a population advanced via the single-pod descent method (1). It has been selected for germplasm release because it is the highest yielding and most SDS resistant of these RILs. Alleles that confer SDS resistance have been tagged to four genomic regions. DNA markers SAT122 on linkage group G, OE02100 on linkage group G, and OC01650 on linkage group N indicate that LS-G96 inherited three resistance alleles from Forrest, and RFLP marker K455D on linkage group C2, indicates a fourth resistance allele inherited from Essex (3,6).

There is no other germplasm that has been released with these four alleles in coupling. Marker-assisted selection for these alleles have been described (2,3,6). DNA marker SAT122c also tags RhgL for SCN resistance to linkage group G.

SDS disease incidence (DI) and disease severity (DS) scores, yield, maturity, height, and lodging were evaluated in five F. solani infested field environments in southern Illinois during 1990 to 1993. Field trials were managed and scored as described earlier (4). Evaluation of F. solani root rot was conducted in cornmeal-sand greenhouse assay (8). The SCN resistance score was determined by greenhouse evaluation utilizing SCN Race 3 infested soil collected from a field near Elkville, IL, and confirmed by greenhouse evaluation at the University of Missouri using a SCN Race 3 culture maintained on Essex.

LS-G96 is significantly (P < 0.05) more SDS resistant than Forrest or Essex by DI with a score of 4.4, compared with 16.5 for Forrest and 58.9 for Essex. The SDS DS score was 1.1 for LS-G96, compared with 1.2 for Forrest and 1.6 for Essex. FSA root rot score was 50 for LS-G96, compared with 72 for Forrest and 65 for Essex. Seed yield of LS-G96 on F. solani infested soils was 10% greater than for Forrest and 6% greater than for Essex. LS-G96 is determinate in growth habit, has white flowers, tawny pubescence, and tan pod walls. Seedcoats are shiny with black hilum. It matures 4 d later than Essex and 3 d earlier than Forrest. Lodging score averages 1.2, compared with 2.7 for Forrest.

Seed of LS-G96 may be obtained from the corresponding author for a period of at least 5 years.


References and Notes