Registration of Soybean Germplasm Line D86-3429, Resistant to Root Knot Nematodes and Foliar Feeding Insects

D86-3429 soybean [Glycine max (L.) Merr. (Reg. no. GP-165, PI 574530)] was released as a germplasm line because of its agronomic qualities along with resistance to root knot nematodes and foliar feeding insects. It was developed by the USDA-ARS in cooperation with the Mississippi Agricultural and Forestry Experiment Station. It was approved for release in April 1993.

D86-3429 is the increase of an F7 line from the cross ‘Tracy-M’/F1 sel. (D71-9241/D75-10169) (2,3). D71-9241 is a breeding line resistant to Meloidogyne incognita (Kofoid & White) Chitwood and M. arenaria (Neal) Chitwood. The cross D71-9241/D7510169 was made at Stoneville, MS, in 1975. F1 lines were grown in a field cage in which a heavy population of soybean looper [Pseudoplusia includens (Walker)] moths were released. Defoliation among F3 lines ranged from >90% to <20%. An F3 line appearing equal to D75-10169 in resistance to feeding was a pollen parent in a cross with Tracy-M in 1978. In 1981, 600 F4 lines, each tracing to an individual F2 plant, were grown with a row in a field planting and a hill in the field cage. Plants in the field cage were challenged by soybean looper. Single plant selections were made from agronomically superior rows for which the single hill had shown a low level of feeding. F5 lines were handled in a similar manner.

D86-3429 has been further evaluated for insect in-cage plantings and in the Regional Insect Host Plant Resistance Test (unpublished data). In these plantings, D86-3429 received a low score for root galling in each replication and was rated resistant on the basis of plant vigor and to feeding by soybean looper. D86-3429 was slightly lower scores than D75-10169. In a 2-yr cage study with soybean looper and scoring on a 1 to 10 basis, D86-3429 was rated 88% of that for Sharkey. D86-3429 was of Group VII maturity, averaging 135 mg seed⁻¹. Seed protein and oil averaged 196 g kg⁻¹, compared with 414 and 202 g kg⁻¹, respectively.

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References and Notes


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