REGISTRATION OF SOYBEAN GERMPLASM LINES LN86-1595 AND LN86-1947 RESISTANT TO BROWN STEM ROT

Soybean [Glycine max (L.) Merr.] line LN86-1595 (Reg. no. GP-119, PI 533656) and LN86-1947 (Reg. no. GP-120, PI 533657) were released as parent stock for soybean breeding and genetics programs because they have a new source of resistance to brown stem rot (BSR) [caused by Phialophora gregata (Allington and Chamberlain) W. Gams] (2) different from that of 'Chancellor' (4) in Illinois. They were selected at the Illinois Agricultural Experiment Station.

LN86-1595 is an F1 plant selection from the cross 'Hack' × PI 437833 that was made at the Illinois Agricultural Experiment Station (5). PI 437833 was identified as being resistant to BSR (2). The F1 and F2 generations were advanced by single-seed descent at the University of Puerto Rico Agricultural Experiment Station. In 1985, seedlings from the F2 bulk population were inoculated and transplanted to the field using the brown stem rot root-dip technique (6). Plants with leaf symptoms of brown stem rot were removed from the F2 population during the growing season. In the fall of 1985, single plants F3, without brown stem rot leaf symptoms were selected. In 1986, seed from the selected plants were planted in short rows and also ten seedlings from each selected plant were inoculated with P. gregata using the root-dip technique (6) and transplanted from the greenhouse to the field into hills. Based upon the reaction to P. gregata in hills, the corresponding BSR resistant plant rows were selected. During the winter of 1986 to 1987, progenies from each selected plant row were evaluated in the greenhouse for resistance to BSR (6). In 1987, the BSR resistant line, LN86-1595, was evaluated in the field for agronomic performance.

LN86-1595 is an Fx plant selection from the cross PI 437833 × 'Elgin' (1). In comparison with Elgin, LN86-1595 averages 18% lower seed yield in the absence of brown stem rot and is similar in lodging, height, and seed quality. In comparison with 'BSR 201, LN86-1595 is 4 d later and is similar in yield, lodging, height, and seed quality in the absence of brown stem rot. LN86-1595 is resistant to Race 1 of phytophthora rot (Phytophthora megasperma f. sp. glycinea Kuan and Erwin). LN86-1947 is of Maturity Group I, averaging 10 d earlier than Elgin and 18 d later than PI 437833 (1). In comparison with Elgin, LN86-1595 averages 18% lower seed yield in the absence of brown stem rot and is similar in lodging, height, and seed quality. In comparison with 'BSR 201, LN86-1595 is 4 d later and is similar in yield, lodging, height, and seed quality in the absence of brown stem rot. LN86-1595 is resistant to Race 1 of phytophthora rot (Phytophthora megasperma f. sp. glycinea Kuan and Erwin).

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References and Notes