REGISTRATION OF INSECT RESISTANT SOYBEAN GERMPLASM LINES N80-53201, N79-2282, N80-50232

The soybean \( \textit{Glycine max} \) \((L.)\) Merr. lines, N80-53201 (Reg. no. GP-69), N79-2282 (Reg. no. GP-70), and N80-50232 (Reg. no. GP-71), were released in 1983 because of their resistance to foliar feeding by Mexican bean beetle (MBB) \((\textit{Epilachna varivestis})\) and by the corn earworm (CEW) \((\textit{Heliothis zea})\), and resistant to races 1 and 3 of the soybean cyst nematode (SCN) \((\textit{Heteroderma glycines})\). These lines were developed cooperatively by USDA-ARS and the North Carolina Agricultural Research Service, using a modified back-crossing procedure in which P1229358 served as the insect resistance source and the cultivar Forrest served as the primary recurrent parent and source of resistance to SCN. Forrest was initially mated with two lines, designated 4 and 6, obtained from Dr. E. E. Hartwig (1). The pedigrees of lines 4 and 6 were ‘Govan’ \( \times \) a selection from \( \text{('Bragg' \( \times \) PI229358)}\) and D68-216 \( \times \) a selection from \( \text{('Bragg' \( \times \) PI229358)}\), respectively. D68-216 is a sister line of Forrest.

N80-53201 is an \( F_5 \) line of Group V maturity derived from the second backcross of line 6 to Forrest. N80-53201 had 55 and 43% less foliar feeding than the susceptible parent, Forrest, under field infestations of CEW and MBB, respectively. In the same tests, P1229358 had 47 and 74% less foliar feeding by CEW and MBB, respectively, than Forrest. The mean days to pupation of MBB reared on N80-53201 was greater but not significantly different from larvae reared on Forrest. The line has Group V maturity, and averaged over two North Carolina environments, it yielded 2813 kg/ha compared to 3567 kg/ha for Forrest.

N79-2282 is an \( F_5 \) line of Group VII maturity derived from the second backcross of line 4 to Forrest. Under field infestations of CEW and MBB in 1980 and 1981, N79-2282 had 61 and 40% less foliar feeding than Forrest, respectively. Comparative feeding on P1229358 was that mentioned above. In cage tests, 14th day CEW larvae weights and MBB pupa weights were lower (by 41 and 11%, respectively) for those reared on N79-2282 than those reared on Forrest. Those CEW larvae reared on P1229358 had 68% lower 14th day weights than Forrest. In the 1983 Group VII Regional Preliminary Soybean tests, N78-2282 was greater but not significantly different from Forrest. N79-2282 received a rating 56% lower than the Braxton check for feeding by soybean looper. In those tests, the average of the line was 2013 kg/ha compared to 2413 kg/ha for Braxton.

N80-53201 was greater but not significantly different from Forrest. Those CEW larvae reared on PI229358 had 55 and 43% less foliar feeding than the susceptible parent, Forrest, under field infestations of CEW and MBB, relatively. In those tests, the yield averaged over two North Carolina environments, it yielded 2813 kg/ha compared to 3567 kg/ha for Forrest.

There are no references or notes provided in the text.