Over 1000 plants of PR-Mo2 were infested with four European corn borer (ECB) egg masses/plant during anthesis (ECB that feed on plants at this stage of development are considered the second generation). Approximately 400 plants were selfed and about 200 of these plants were dissected to evaluate for extent of ECB damage at post-physiological maturity. Seed was saved from the 20 plants (10% selection intensity) with the least amount of stalk tunneling. An equal number of seed from ears of each of the selected selfed plants was bulked, planted, and plants were intermated to produce the subsequent cycle (two generations/cycle). This procedure was repeated through the six cycles and the final population was designated Mo-2 ECB-2.

The first three cycles were evaluated for progress from selection in 1980 by growing all cycles in the same environment. Plants were hand-infested with ECB egg masses at anthesis and, after physiological maturity, plants were dissected to determine the amount of stalk tunneling by the insect. These results showed that tunneling by the second generation ECB was reduced by an average of 7.3% per cycle. Mo-2 ECB-2 was evaluated in Missouri, Georgia, and Iowa in 1983 for resistance to the second generation of ECB. Mo-2 ECB-2 had an average of 12 cm of stalk tunneling compared to 30 cm for the intermediate check WF9 X W182E. The amount of stalk tunneling in Mo-2 ECB-2 was similar to the stalk tunneling in PR-Mo2 X MoSQB that has previously been released for resistance to ECB. Mo-2 ECB-2 was evaluated in Missouri, Georgia, and Iowa in 1983 for resistance to the second generation ECB. Mo-2 ECB-2 had an average of 12 cm of stalk tunneling compared to 30 cm for the intermediate check WF9 X W182E. The amount of stalk tunneling in Mo-2 ECB-2 was similar to the stalk tunneling in PR-Mo2 X MoSQB that has previously been released for resistance to the second generation ECB (1).

Seed of Mo-2 ECB-2 is available in lots of 300 kernels each from the Missouri Foundation Seed Project, 135 Mumford Hall, Columbia, MO 65211.

DEAN BARRY, M. S. ZUBER, AND L. L. DARRAH (3)

References and Notes

REGISTRATION OF DE811 GERMLASM LINE OF MAIZE

DE811 is a yellow dent (Zea mays L.) (Reg. no. GP-142) inbred line developed by the maize breeding program of the University of Delaware Agricultural Experiment Station. This line was released as a source of resistance to both generations of European corn borer (Ostrinia nubilalis Hüb.

DE811 first generation rating was 3.4 for B73 [scale 1 to 9 developed by Guthrie et al. (1)] and 2.7 compared to 8.1 for B73 [scale 1 to 9 developed by Guthrie et al. (1)] for response to manual second generation ECB. DE811 averaged 8 cm tunneling/plant compared to 30 cm for B73 at Delaware. In Iowa, DE811 averaged 19 cm tunneling/plant compared to 84 cm for W182E. On a 1-9 sheath-collar scale (2), ratings of 3 and 9 were obtained on DE811 in Iowa. DE811 was released because they possess unique combinations of genes for resistance at Delaware and Iowa (Iowa studies conducted by Dr. W.D. Guthrie, USDA-ARS, Corn Insects Research Unit, Ankney, IA). DE811 is resistant to both generations of ECB and should be tested with inbreds of both Southern corn leaf blight [incited by Colletotrichum graminicola (Ces.) Schw.] and common leaf rust [caused by Puccinia coronata Cda. var. Avenae].

DE811 plants have upright leaves and flowering synchrony, and two-eared tiller densities. Pollen production is rated good and seed quality is average. This inbred has purple silky, lowish-brown (bronze) kernels. DE811 silked 1 to 2 days later than B73 in tests in Delaware, and 5 days later than B73 at Missouri (1982 North Central Corn Breeding Regional Evaluation). AES maturity rating is 700 to 800. Plant height is 130 cm, and DE811 averaged 8 cm tunneling/plant compared to 19 cm for B73 [scale 1 to 9 developed by Guthrie et al. (1)] in Delaware. In Iowa, DE811 averaged 5 cm tunneling/plant compared to 8 cm for B73 at Missouri and 25 cm higher than B73 at Missouri (1982 North Central Corn Breeding Regional Evaluation). Disease evaluations of DE811 showed it to be resistant to Southern corn leaf blight and is susceptible to anthracnose stalk rot [incited by Colletotrichum graminicola (Ces.) Schw.] and common leaf rust [caused by Puccinia coronata Cda. var. Avenae]. DE811 is average. This inbred has purple silky, lowish-brown (bronze) kernels. DE811 silked 1 to 2 days later than B73 in tests in Delaware, and 5 days later than B73 at Missouri (1982 North Central Corn Breeding Regional Evaluation). AES maturity rating is 700 to 800. Plant height is 130 cm, and DE811 averaged 8 cm tunneling/plant compared to 19 cm for B73 [scale 1 to 9 developed by Guthrie et al. (1)] in Delaware. In Iowa, DE811 averaged 5 cm tunneling/plant compared to 8 cm for B73 at Missouri and 25 cm higher than B73 at Missouri (1982 North Central Corn Breeding Regional Evaluation). Disease evaluations of DE811 showed it to be resistant to Southern corn leaf blight and is susceptible to anthracnose stalk rot [incited by Colletotrichum graminicola (Ces.) Schw.] and common leaf rust [caused by Puccinia coronata Cda. var. Avenae].

DE811 will be maintained and distributed in 100 kernel quantities by the author.

References and Notes

REGISTRATION OF OAT GERMPLASM LINE OF MAIZE

IA H677, AND IA H681 RESISTANT TO THE CROWN RUST FUNGUS

Oat (Avena sativa L.) germplasm lines IA H677 (Reg. no. 31), and IA H681 (Reg. no. 32), were released by USDA-ARS in cooperation with the Iowa State University Department of Agronomy. These germplasm lines are resistant to the crown rust fungus (Puccinia coronata Cda. var. Avenae) and exhibit high genetic diversity. IA H677 and IA H681 are adapted to the northern Great Plains and are used as parental lines in breeding programs to develop germplasm lines for seed production. These lines are particularly useful for developing germplasm lines that are resistant to crown rust and are well-adapted to the northern Great Plains.

DE811 first generation rating was 3.4 for B73 [scale 1 to 9 developed by Guthrie et al. (1)] and 2.7 compared to 8.1 for B73 [scale 1 to 9 developed by Guthrie et al. (1)] for response to manual second generation ECB. DE811 averaged 8 cm tunneling/plant compared to 30 cm for B73 at Delaware. In Iowa, DE811 averaged 19 cm tunneling/plant compared to 84 cm for W182E. On a 1-9 sheath-collar scale (2), ratings of 3 and 9 were obtained on DE811 in Iowa. DE811 was released because they possess unique combinations of genes for resistance at Delaware and Iowa (Iowa studies conducted by Dr. W.D. Guthrie, USDA-ARS, Corn Insects Research Unit, Ankney, IA). DE811 is resistant to both generations of ECB and should be tested with inbreds of both Southern corn leaf blight [incited by Colletotrichum graminicola (Ces.) Schw.] and common leaf rust [caused by Puccinia coronata Cda. var. Avenae].

DE811 plants have upright leaves and flowering synchrony, and two-eared tiller densities. Pollen production is rated good and seed quality is average. This inbred has purple silky, lowish-brown (bronze) kernels. DE811 silked 1 to 2 days later than B73 in tests in Delaware, and 5 days later than B73 at Missouri (1982 North Central Corn Breeding Regional Evaluation). AES maturity rating is 700 to 800. Plant height is 130 cm, and DE811 averaged 8 cm tunneling/plant compared to 19 cm for B73 [scale 1 to 9 developed by Guthrie et al. (1)] in Delaware. In Iowa, DE811 averaged 5 cm tunneling/plant compared to 8 cm for B73 at Missouri and 25 cm higher than B73 at Missouri (1982 North Central Corn Breeding Regional Evaluation). Disease evaluations of DE811 showed it to be resistant to Southern corn leaf blight and is susceptible to anthracnose stalk rot [incited by Colletotrichum graminicola (Ces.) Schw.] and common leaf rust [caused by Puccinia coronata Cda. var. Avenae].