Assay of a Recessive Gene for Resistance to Southern Leaf Blight in Maize. (C01-gao220630-Poster)

Authors:

- Z.Gao - *Kansas State University*
- H.Cai - *Japan Forage Seed Association*
- G.H.Liang - *Kansas State University*

Abstract:

Bipolaris maydis is the causal fungus of southern leaf blight in maize. Resistance to this disease has been determined to be controlled by a single recessive allele, designated as rhm. We established an assay method that clearly showed the scoring of the disease from seedling to mature plants in the field. The pairs of isogenic lines -- H95/H95rhm and B73/B73Htrhm, and the H95/H95rhm F2 population consisting of 687 individuals, also the 120 F3 families, were inoculated with conidia of B. maydis race O, and the disease ratings were analyzed together with the segregation scores for a single copy DNA probe p144 following hybridization. The disease data were obtained unequivocally from the four leaf stage until past flowering. Among 687 F2 plants from the cross H95/H95rhm, 161 plants were rated as being resistant and 526 susceptible to the pathogen. Among the 120 F3 families, the ratings showed 32 susceptible, 58 segregating, and 30 resistance (20 plants per row) indicating the segregation ratio fits the expected 1:3 or 1:2:1 for a single locus. The allelic segregation scores for the RFLP probe, p144, showed a 99.5% correspondence with the disease ratings in the field. The results indicated that p144 marker is tightly linked to the rhm allele.

Corresponding Author Information:

Zhensheng Gao
Kansas State Univ.
2004 Throckmorton
Manhattan, KS 66506-5501

phone: 785-532-7226
fax: 785-532-6094
e-mail: zgao@bear.agron.ksu.edu

Presentation Information:

Presentation Date: Monday, November 11, 2002
Presentation Time: 4:00-6:00 pm
Poster Board Number: 1213

Keywords:
Maize , Bipolaris maydis, rhm