Single Gene Confers Resistance to Different Strains of Soybean Mosaic Virus in Soybean. (C01-chen205743-Oral)

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Abstract:

There are seven strains (G1 to G7) of soybean mosaic virus (SMV) in the U.S. Soybean may exhibit resistant, susceptible, or necrotic reaction upon interacting with different SMV strains. This research was conducted to investigate whether differential reactions to two divergent SMV strains are controlled by the same gene or by separate genes. Two SMV-resistant soybean lines, 'LR1' and 'LR2', were crossed with the susceptible cultivar 'Lee 68'. Seeds from each F2 plant were randomly divided into two sub-samples. Two hundred F2:3 progenies from LR1 x Lee 68 and 262 F2:3 progenies from LR2 x Lee 68 were inoculated with either G1 (the least virulent strain) or G7 (the most virulent strain) in the greenhouse. The results showed that all the F2:3 lines from both crosses exhibited the same reaction to G1 and G7. No recombinants were found in all the progenies. The results provided strong evidence that reactions to both G1 and G7 were controlled by either the same gene or very closely linked genes.

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