Virus Disease Tolerance in Arrowleaf Clover. (C06-smith112730-Poster)

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Abstract:

Arrowleaf clover (Trifolium vesiculosum Savi.) is an annual forage legume that is cross-pollinated and self-sterile. Bean yellow mosaic virus (BYMV) causes severe damage to arrowleaf clover with symptoms ranging from plant death to stunting, chlorosis and reduction in forage yield. 'Apache' arrowleaf clover was developed through six cycles of selection for tolerance to BYMV. The base population for the development of Apache was 78 half-sib families from a field selection program that used the arrowleaf cultivars 'Yuchi', 'Meechee' and 'Amclo' as initial germplasm. Four cycles of recurrent selection were conducted under greenhouse conditions using mechanical inoculation with BYMV-KY204-1. Two additional cycles of selection were made under field conditions, also using mechanical inoculation with BYMV. Twenty-one plants were identified in Cycle 6 that survived BYMV infection in combination with severe root rot disease. These selections were evaluated for seed production, which ranged from none to 81 g/plant. Based on seed production, the best eight families were bulked and breeder seed was produced in 1999.

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Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 4:00-6:00 pm
Poster Board Number: 833

Keywords:

clover, disease, virus, breeding