

ABSTRACT

TAGGING A ROOT ROT RESISTANCE GENE IN PEPPER (CAPSICUM) USING DNA MAKERS

Using bulked segregant analysis and randomly amplified polymorphic DNA-polymerase chain reaction, we attempted to find DNA markers linked to a major *P. capsici* resistance gene in *Capsicum annuum*. Three hundred arbitrary 10-mer primers were screened between homozygous resistant and susceptible F₂ DNA pools and individual parental pepper cultivars. Four primers amplified polymorphic fragments between the pools and eighty-eight F₂ pepper plants segregating for *P. capsici* resistance. Ninety primers (30%) were polymorphic between parental CM334 and JEP, out of which 17 (6%) detected polymorphisms in the F₂ population. Linkage analysis placed UBC402₃₅₀, UBC432₄₀₀, and SCAR402 loosely (> 25cM) linked to the *P. capsici* resistance gene cluster. SCAR402 and UBC403₃₅₀ were both present in the susceptible JEP parent and UBC432₄₀₀ was present in the resistant CM334 parent. In order for these markers to be useful, further research is needed that will tightly link these makers to the *P. capsici* resistance gene.

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