عنوان مقاله:

Evaluation of Citrus Cultivars Resistance to Alternaria alternata, the Causal Agent of Brown Spot Disease, Using RAPD-PCR

محل انتشار:

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خلاصه مقاله:

Alternaria brown spot is one of the most important worldwide diseases of citrus. This disease causedby Alternaria alternata (Fr.:Fr.) Kessl, and causing serious economical losses in citrus yield. Citruscultivars vary genetically in their degree of brown spot resistance. In this research, susceptibility of 13citrus cultivars including "Orlando tangelo, Minneloa tangelo, Clementine mandarin, Fortune, Page,Unesi, Kino, Local tangerine, Sweet orange (Thomson and Local orange), Sweet lemon, Lime andSour orange to Alternaria brown spot was analyzed. The results revealed that Page, Orlando tangeloand Mineola tangelo were highly susceptible to A. alternata and showed severe brown spot symptomson leaves. Based on Disease rating Index (DRI) these cultivars were placed in sensitive class (S).However, Sour orange and Clementine with the least DRI were designated as resistance varieties (R).In molecular method, the total DNA was extracted from leaves with CTAB-phenol chloroform methodand DNA fragments were amplified by RAPD-PCR using 2 single, random 10mer oligonucleotideprimers; AL3 and P12. In sour orange and Clementine mandarin an 850 bp fragment by P12 and a1250 bp fragment by AL3 primer were amplified and there was not observed any fragment in theseregions in other citrus cultivars. Based on results of molecular marker and pathogenicity test, sourorange and Clementine are resistance to Alternaria brown spot and have resistant gene (amplified byP12 and AL3 primers). This is the first report of resistant gene in citrus cultivars to Alternariaalternata in Iran.

کلمات کلیدی:

Alternaria alternata, Resistance gene, Citrus cultivars, Sour orange, RAPD-PCR