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Evaluation of some cucurbitaceous rootstocks for resistance or susceptibility to root-knot nematode and fusarium wilt under greenhouse conditions

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Abstract

Southern root-knot nematode, *Meloidogyne incognita* and Fusarium wilt *Fusarium oxysporum* are the most serious soil borne diseases of cucumber. The present study aimed to evaluate some cucurbit rootstocks for their resistance and/or susceptibility to root-knot nematode and fusarium wilt fungus in two successive seasons (2009 and 2010) under greenhouse conditions. Data indicated that in autumn season, winter squash (*Cucurbita maxima*) was highly resistant and resistant when the pots were inoculated with *M. incognita* only or nematode plus fungus, respectively. *Lagenaria sicenaria* rootstock was moderately resistant in both cases of inoculation. Other rootstocks were susceptible to nematode or nematode plus fungus except *Cucurbita ficifolia* and *Luffa aegyptiaca*, which were highly susceptible to nematode only. While, in spring season, *Benincasa hispida* and hybrid 6001 were moderately resistant to infection by the root-knot nematode. Other rootstocks were susceptible to nematode or nematode plus fungus except *Luffa acutangula* and *Cucumis sativus* var. Hesham which were highly susceptible. The results obtained on the enzyme content showed that some cucurbit rootstocks exhibited the highest content of polyphenoloxidase, peroxidase and lignin contents being the lowest in some rootstocks. Significant and highly significant reductions in shoot and root fresh weights, root and shoot lengths were recorded in most cucurbit rootstocks in autumn and spring seasons as a result of nematode, nematode plus fungus or fungus infections compared to non-infected rootstocks.