

## Evaluation the reaction of some cultivars of common pepper in Iran to root-knot nematode (*Meloidogyne incognita* race-2) under greenhouse conditions

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### Abstract

Root-knot nematodes (*Meloidogyne* spp.) are one of the limiting factors in production of agricultural crops including pepper. *M. incognita* is widely distributed in the pepper fields of Guilan province, Iran. In this study, resistance of 11 cultivars of pepper including AA pepper (Hyb. Coyame- Petoseed, Hyb. Aziz- Petoseed, Hyb. Bounty- Petoseed) and bell pepper (California Wonder 301- Petoseed, Hyb. Camelot- Petoseed, Hyb. King Arthur- Petoseed, Hyb. Wizard- Petoseed, Hyb. Aristotle (SQ-R)- Petoseed, Hyb. Plato (SQ-R)- Petoseed, Hyb. Mercury- Petoseed and California Wonder 301- Canyon) against *M. incognita* race 2 was evaluated. The experiment was carried out in a greenhouse with temperature range of 22 to 28 °C, as a completely randomized design with four replications. The four-leaf seedlings were inoculated with 2000 second stage juveniles per kg of soil. Eight weeks after inoculation, growth indices (chlorophyll content of leaves, fresh and dry weight of shoot and root, root length and volume, length and diameter of stem and number of healthy leaves) and traits related to infection of nematodes (number of galls, egg mass, number of juveniles in the soil and reproductive factor) were evaluated. Final determination of reaction of the cultivars was based on reproduction factor, gall, egg mass and resistance indices. According to the results, pepper cultivars had different degrees of sensitivity to the nematodes. In the growth traits, Wizard hybrid, California Wonder 301, Bounty hybrid, Mercury hybrid and Camelot hybrid cultivars showed the least sensitivity to nematode infection. California Wonder 301, Bounty hybrid, Mercury hybrid and Camelot hybrid were less sensitive than other cultivars to nematode reproductive traits. In assessing the gall, egg mass and resistance indices, Camelot hybrid and Mercury hybrid were the most tolerant cultivars and King Arthur hybrid and Aziz hybrid were the most sensitive cultivars.

**Keywords:** Resistance index, Reproductive traits, Growth indices.

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