

عنوان مقاله:

The role of some agricultural crops and weeds on decline of potato cyst nematode *Globodera rostochiensis* and their possible use as trap crops

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خلاصه مقاله:

The potato cyst nematode *Globodera rostochiensis* (PCN) causes severe damage to potato production worldwide. The stimulatory effects of root diffusates of 9 plant families on hatch of second stage juveniles (J₂) of PCN and their possible use as trap crops were studied. In the laboratory, cysts were placed in leachates from roots and hatched J₂s were collected weekly; in addition, the selected plants were grown in soil for 3 months and the rates of decline of eggs from inoculated cysts, were determined in two experiments with various plant species. Species of Solanaceae, such as the susceptible potato cultivar Marfona, tomato and the resistant potato cultivar Agria, induced 84%, 75% and 65% hatch respectively. Moreover, considerable hatching (49%-70%) was caused by exposure to root exudates of weeds of *Solanum nigrum* and *S. villosum*. Among non-host and non-Solanaceae plants, 11-32% of J₂s hatched in root exudates of treatments of wheat, corn and barley in soil. There were differences in the rates of decline of J₂ populations caused by the different plant species examined. In *S. sisymbriifolium* (a non-host species of Solanaceae) treatment, the density of encysted eggs declined by 62%. The potential of aforementioned plant species, the resistant cv Agria and some other tested plant species as suitable trap crops are further discussed; and in conclusion, the use of the trap crops could be an important component of PCN management program in Iran.

کلمات کلیدی:

Decline rate, golden potato cyst nematode, non-Solanaceae plants, *Solanum sisymbriifolium*

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