

## عنوان مقاله:

Overexpression of thionin genes in Arabidopsis and resistance to *Heterodera schachtii*

## محل انتشار:

اولین همایش ملی پژوهش های جامعه محور در کشاورزی، منابع طبیعی و محیط زیست (سال: 1400)

تعداد صفحات اصل مقاله: 15

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## خلاصه مقاله:

Thionins and Thionin-like peptides are small cysteine-rich antimicrobial plant peptides that play an important role in resistance to plant pathogens and have been isolated from several plant species. The purpose of this study is overexpression of Thionin-like (*At1g12665* and *At1g20618*) genes for resistance to *H. schachtii*. *At1g12665* (*ThiL12*) and *At1g20618* (*ThiL20*) genes have isolated from *Arabidopsis thaliana* and transgenic plants were generated through *Agrobacterium*-mediated using the pMAA-red vector by the floral dips method. Expression of the thionin-like genes in overexpression lines were confirmed by RT-PCR and observation the red seeds and homozygous seeds of overexpression lines were planted and high overexpression of *ThiL12* and *ThiL20* peptides in plant indicated by quantitative RT-PCR. In order to investigate the resistance, *Arabidopsis* roots of 12-day old seedling were inoculated under sterile conditions with about 50-60 juveniles per plant on Knop medium. 15 days post infection, when females and males could be clearly distinguished, the number of males and females was counted and the results were compared with wild-type *Arabidopsis* (*Col-0*). Also, the results of the overexpression lines showed significant enhanced resistant to *H. schachtii* as compared to wild type. However, the results demonstrate that there was no significant difference in resistance against *H. schachtii* in the size of syncytia and females in *Arabidopsis* roots with the exception of the line for *At1g20618* gene.

## کلمات کلیدی:

*Arabidopsis*, Resistance, Thionin-like, Sugar beet nematode

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1265374>

