

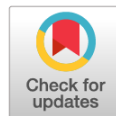
## Approaches for the protection of *Solanum tuberosum* from late blight through the regulation of *inf1* and *inf4* elicitor genes

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Late blight is a disease affecting economically important crops, which is caused by the oomycete *Phytophthora infestans*. Mainly, fungicides are used against it, however they may harm the environment when used in large quantities. Spray-induced gene silencing (SIGS) can become an alternative to the classical fungicides in the fight against *P. infestans*. SIGS involves the treatment of plants with double-stranded RNA (dsRNA) which triggers the RNA interference mechanism to suppress translation of the target gene. So, it is possible to suppress the expression of genes.

We have chosen two *P. infestans* genes, *inf1* and *inf4* involved in the different stages of the parasite development. For the production of dsRNA in *E. coli* HT115 two expression vectors were constructed on the basis of the L4440 plasmid, each carrying a cDNA fragment of these genes between two T7 phage promoters oriented in the opposition to each other.

To evaluate the protective effect of the dsRNA potato explants were treated with a solution containing dsRNA of one of the genes or their combination. 24 hours later, phytophthora zoospores were inoculated with the registration of the effect after 5 days.

According to the measurement results, the lesion area was significantly larger in plants treated with water than in the other three experimental groups that were treated with dsRNA.

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