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Characterization of miRNA involved in apple (*Malus ×domestica* Borkh.) resistance to apple scab caused by *Venturia inaequalis* (Cooke) G. Winter

Toms Bartulsons, Gunārs Lācis

Institute of Horticulture, Latvia University of Agriculture
Graudu iela 1, Ceriņi, Krimūnu pag., Dobeles nov., LV-3701, Latvia,
email: toms.bartulsons@llu.lv

Apple is one of the most important fruit crops in Europe and Latvia, which sustainable growing is significantly affected by scab, caused by *Venturia inaequalis*. Current knowledge on plant resistance genetics, changes in pathogen populations and variability as well as field observations show some inconsistencies and do not explain clearly plant-pathogen interactions, thereby limiting the development and selection of new resistance sources. Recent studies on model plant species as well as some crops, including apple, showed involvement of miRNA (microRNA) in resistance reactions. Therefore was stated following study aim — identify and characterize miRNA potentially involved in the apple resistance reaction to scab infection. Gene *RPM1* and linked miRNA were selected based on available scientific information, obtained in other apple pathosystems. Isolation of mRNA and miRNA, following by qPCR and determination of relative expression differences were used as main research methods. Gene expression differences were tested on selected apple cultivar set with known field resistance to scab. Although significant expression differences for gene *RPM1* and its modifying miRLn11 were not identified among apple genotypes with different resistance to scab, cultivars 'Antonovka' and 'Gloster' were selected for further studies and were developed new primers for *RPM1* gene characterization.

Keywords: gene expression, miRLn11, miRNA, *RPM1*

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