

Transcriptomic response of *Solanum tuberosum* L. to potato spindle tuber viroid infection

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Potato spindle tuber viroid (PSTVd) causes diseases of *Solanaceae* crops, including tomato and potato, negatively affecting yields. Mechanisms underlying development of disease phenotypes remain elusive. PSTVd strain NicTr-3 causes severe disease symptoms in *S. tuberosum* cv Colomba. After three cycles of propagation in tomato, however, viroid caused very mild symptoms in potato. Analysis of potato leaves transcriptome at three time points showed significant changes of gene expression at 14 dpi and 30 dpi. Genes with decreased expression at 30 dpi are associated with DNA replication, regulation of cell cycle and cell wall-associated and microtubule-based processes, indicating suppression of growth and cell division. Additionally, genes associated with general metabolism lower their expression. Thus, transcriptomic changes point to plant dormancy in response to viroid inoculation.

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The main publications of authors on the subject of the abstract:

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Take-home message:

Transcriptomic changes in potato inoculated with PSTVd after three cycles of propagation in tomato are associated with negative regulation of cell cycle, metabolism retardation and general dormancy of leaves