

Development of multiplex RT-PCR and real-time RT-PCR assays to detect three potato viruses

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Due to the vegetative way of propagation, the potato plant is a host to more than forty viruses. Among them, the most important is potato virus Y (PVY), which can reduce the tuber yield up to 80%. Similarly, a devastating impact can be also imposed by potato leafroll virus (PLRV). The dependence of this virus on its aphid vector facilitated effective control through the use of aphicides. However, it is still circulating in the environment and can propagate in seed tubers. Potato virus M (PVM) is less dangerous in terms of direct yield losses but infected plants attract fungal and bacterial pathogens contributing to the economic importance of this virus. Production of healthy seed tubers requires testing for the most important viruses, usually by DAS-ELISA. Here, we present our data on the development and optimization of sensitive and simultaneous detection of PVY, PLRV and PVM by multiplex RT-PCR and real-time RT-PCR assays.