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Abstract Book

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Multiplex qPCR method for detection of *Verticillium* sp. and *Phytophthora* sp.

Jacek Panek, Dominika Malarczyk, Magdalena Frąc
Institute of Agrophysics, Polish Academy of Sciences, Lublin, Poland

Increasing consumer awareness of fungicides used in conventional agriculture has caused organic farming to become more common in recent years. Organic farming methods contribute the crops to exposure to pathogens due to the exclusion of disease management by chemical sprayings. The abandonment of conventional fungicides creates the need for early and effective detection methods of causal agents of plant diseases. Fungal pathogens are serious threat causing large economic losses in food industry. Phytopathogens may impact the food production by reducing yield and decrease quality of harvest. *Phytophthora* sp. and *Verticillium* sp. are considered as common and threatening phytopathogens. Both of them are not host specific and there are no universal symptoms of disease on the plant.

Early detection of soil-borne diseases is very important for economic reasons. Traditional methods of fungal identification are time consuming and often inaccurate. However, emergence of molecular techniques such as quantitative polymerase chain reaction (qPCR) may overcome this problem. These techniques allow to detect the crucial pathogens with high precision, even before manifestation of the disease.

The aim of the study was to develop multiplex qPCR method for detection of *Phytophthora* sp. and *Verticillium* sp. in single reaction.

To achieve this goal, universal primers amplifying region D2 of Large Subunit of fungal rDNA, had been designed. Next, two hydrolysis fluorescent probes specific to the *Phytophthora* sp. and *Verticillium* sp. had also been developed.

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