Interlaboratory tests for the detection of Clavibacter michiganensis ssp. sepedonicus (potato ring rot) and Ralstonia solanacearum (potato brown rot)

Research consortium

Belgium: ILVO, CORDER; Bulgaria: CLPQ; Czech Republic: SPA; Denmark: PDIR; Estonia: ARC-LPHM; Finland: EVIRA; France: LNPV; Germany: JKI, LFL, LVLF, PSA; Ireland: SL; Italy: UNIMORE; Latvia: SPSS-NPL; Lithuania: SPSS-PRL; Malta: PHD; Netherlands: NAK, PD; Norway: BIOFORSK; Poland: PIORIN; Portugal: INRB; Russia: ARCPQ; Slovakia: CCTIA; Slovenia: NIB; Spain: IVIA; Turkey: ZMMAE; UK: Fera, SASA.

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Objectives

- Evaluation of the harmonised test methodology used in European plant health laboratories for a range of methods for detection of both pathogens.
- Assessment of the relative accuracy of immunofluorescence (IF), PCR, real-time PCR, selective plating and flow immunoassays for the detection of Clavibacter michiganensis ssp. sepedonicus and Ralstonia solanacearum in potato tuber extracts.

Goals

To verify the performance of test methods from EU Directives 2006/56 and 2006/63, of real-time PCR and of rapid screening tests for the detection of Clavibacter michiganensis ssp. sepedonicus (potato ring rot) and Ralstonia solanacearum (potato brown rot) through interlaboratory comparison.

Key outputs and results

- EU test protocols for IF, PCR and selective plating were used by all consortium laboratories.
- Real-time PCR for detection of Clavibacter michiganensis ssp. sepedonicus and Ralstonia solanacearum was performed in the majority of the consortium laboratories.
- High levels of accuracy of IF, PCR and real-time PCR were achieved for detection of both pathogens.
- Reliable detection of ring rot and brown rot infected potato tubers, also of latent infections, by flow immunoassays.