EUROPEAN AND MEDITERRANEAN PLANT PROTECTION ORGANIZATION
ORGANISATION EUROPEENNE ET MEDITERRANEENNE POUR LA PROTECTION DES PLANTES
(11-17239)
Summary sheet of validation data for a diagnostic test

The EPPO Standard PM 7/98 *Specific requirements for laboratories preparing accreditation for a plant pest diagnostic activity* describes how validation should be conducted. It also includes definitions of performance criteria.

Target Organism	Erwinia amylovora	
Short description	Detection of Erwinia amylovora from plant material by Real time PCR	
Laboratory contact details	Bacteriology. Instituto Valenciano de Investigaciones Agrarias CV-315, km. 10.7, 46113 Moncada, Spain	
Date and reference of the validation report	2012-03 - Not specified	
Validation process according to EPPO Standard PM 7/98:	Yes	
Reference of the test description	PM 7/020(1) For inclusion in the revision Pirc et al. (2009). Improved fire blight diagnostics using quantitative real-time PCR detection of Erwinia amylovora chromosomal DNA. Plant Pathology 58, 872-881.	
Is the test the same as described in the EPPO DP?	No For inclusion in the revision Pirc et al. (2009). Improved fire blight diagnostics using quantitative real-time PCR detection of Erwinia amylovora chromosomal DNA. Plant Pathology 58, 872-881.	
Is the lab accredited for this test?	No	
Plant species tested (if relevant)	Several plant species from the Rosaceae family	
Matrices tested (if relevant)	Shoots, leaves	
List of methods used		
Method for extraction / isolation / baiting of target organism from matrix		
Molecular methods, e.g. hybridization, PCR and real time PCR	X	Real time PCR according to Pirc et al. (2009).
Serological methods: IF, ELISA, Direct Tissue Blot Immuno Assay		
Plating methods: selective isolation		
Bioassay methods: selective enrichment in host plants, baiting, plant test and grafting.		
Pathogenicity test		

Fingerprint methods: protein profiling, fatty acid profiling & DNA profiling		
Morphological and morphometrical methods intended for identification		
Biochemical methods: e.g. enzyme electrophoresis, protein profiling		
Other		
Analytical sensitivity (= limit of detection)		
What is smallest amount of target that can be detected reliably?	10^3-10^4 CFU/mL plant extract after DNA extraction following Llop et al (1999), Taylor et al (2001) and RED-extract-N-Amp T kit.	
Diagnostic sensitivity		
Proportion of infected/infested samples tested positive compared to results from the standard test , see appendix 2 of PM 7/98	Proportion of true positives/total number of samples: 0.67; 0.58 and 0.71 after DNA extraction following Llop et al (1999), Taylor et al (2001) and RED-extract-N-Amp T kit, respectively (in samples from 1 to 10^6 CFU/mL and healthy samples in ring test 2010).	
Specify the standard test		
Analytical specificity		
Specificity value		
Number of strains/populations of target organisms tested	235 strains: all positive	
Number of non-target organisms tested	37 strains: all negative	
Cross reacts with (specify the species)	None	
Diagnostic Specificity		
Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test	Proportion of true negatives/total number of samples: 0.93; 0.93 and 0.98 after DNA extraction following Llop et al (1999), Taylor et al (2001) and RED-extract-N-Amp T kit, respectively (in samples from 1 to 10^6 CFU/mL and healthy samples in ring test 2010).	
Specify the standard test		
Reproducibility		
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	94% in IVIA assays when tested with different operators:	
Repeatability		
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	98% in IVIA assays	
Test performance study		
Test performance study?	Yes	
Include brief details of the test	Yes (14 laboratories from Europe, Morocco, USA and New	

performance study and its output.It available, provide a link to published article/report	Zealand) analysed 12 samples each (from 1 to 10^6 CFU/mL plant extract and healthy samples). Details about ring test protocol available.
Other information	
Any other information considered useful **e.g. robustness, ease of performing the test, etc.**	