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	Tomato chlorosis virus	
Short description	Detection of ToCV by RT-PCR in tomato leaves	
Laboratory contact details	Anses Plant Health Laboratory - Bacteriology, Virology and GMO Unit 7 rue Jean Dixméras, 49044 Angers, France	
Date and reference of the validation report	2011-07 - Loiseau M. et Cousseau P. 2011. Evaluation des méthodes de détection des jaunisses de la tomate – Tomato Infectious Chlorosis Virus (TICV) Tomato Chlorosis Virus (ToCV)	
Validation process according to EPPO Standard PM 7/98:	No	
Reference of the test description	0 Jacquemond M., Verdin E., Dalmon A., Guilbaud L., Gognalons P., 2009. Serological and molecular detection of Tomato chlorosis virus and Tomato infectious chlorosis virus in tomato. Plant pathology 58:210-220. Louro D., Accotto G.P., Vaira A.M., 2000. Occurrence and diagnosis of Tomato chlorosis virus in Portugal. European Journal of Plant Pathology, 106: 589-592	
Is the test the same as described in the EPPO DP?	No -	
Is the lab accredited for this test?	No	
Plant species tested (if relevant)	Solanum esculentum	
Matrices tested (if relevant)	leaves	
List of methods used		
Method for extraction / isolation / baiting of target organism from matrix	X	For the RNA extraction, leaf samples was grinded in the RLT buffer (quiagen)
Molecular methods, e.g. hybridization, PCR and real time PCR	X	RNA was extracted with the Plant RNeasy minikit from Qiagen. RT-PCR tests were carried out following the recommendation of the paper of Jacquemond et al (2009) et Louro et al (2000).
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?	Not relevant	
Diagnostic sensitivity		
Proportion of infected/infested samples tested positive compared to results from the standard test , see appendix 2 of PM 7/98	Simplex RT-PCR (Louro, 2000): 86.67% to 88.89%; Duplex RT-PCR (Jacquemond, 2009): 83.3%; Triplex Rt-PCR (with Cox) (Jacquemond, 2009): 49.02% to 54.9%	
Specify the standard test		
Analytical specificity		
Specificity value		
Number of strains/populations of target organisms tested	15 (see table as separate file or full validation report for detail)	
Number of non-target organisms tested	22 (see table as separate file or full validation report for detai	
Cross reacts with (specify the species)	Cross reaction observed with the triplex method	
Diagnostic Specificity		
Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test	Simplex RT-PCR (Louro, 2000): 100%; Duplex RT-PCR (Jacquemond, 2009): 100%; Triplex Rt-PCR (with Cox) (Jacquemond, 2009): 97.5% to 100%	
Specify the standard test		
Reproducibility		
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)		
Repeatability		
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)		
Test performance study		
Test performance study?	No	

Include brief details of the test performance study and its output.It available, provide a link to published article/report	
Other information	
Any other information considered useful **e.g. robustness, ease of performing the test, etc.**	
The following complementary files are available online:	• List of target strains and non-target organisms • Loiseau M. et Cousseau P. 2011. Evaluation des méthodes de détection des jaunisses de la tomate – Tomato Infectious Chlorosis Virus (TICV) Tomato Chlorosis Virus (ToCV)