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	Pospiviroid	
Short description	Detection of pospiviroids by means of one-step real-time PCR method	
Laboratory contact details	ILVO Institute for Agricultural and Fisheries Research Burg. Van Gansberghelaan 96, 9820 Merelbeke - Melle, Belgium	
Date and reference of the validation report	last version - 12/02/2018 -	
Validation process according to EPPO Standard PM 7/98:	Yes	
Reference of the test description	0 PM7/6 CSVd PM7/33 PSTVd Botermans et al. 2013 Monger et al. 2010	
Is the test the same as described in the EPPO DP?	Yes	
Is the lab accredited for this test?	Yes	
Plant species tested (if relevant)	Solanum lycopersicum (tomato) and Chrysanthemum	
Matrices tested (if relevant)	leaves and seeds	
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	one-step real-time PCR procedure according to Botermans et al. 2013 and Monger et al 2010
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?		
Diagnostic sensitivity		
Proportion of infected/infested samples tested positive compared to results from the standard test , see appendix 2 of PM 7/98		
Specify the standard test		
Analytical specificity		
Specificity value		
Number of strains/populations of target organisms tested	25 Potato spindle tuber viroid pospiviroid Solanum jasminoides – Belgium GBVdC_PSTVd_03 Potato spindle tuber viroid pospiviroid Solanum jasminoides – import Italy GBVdC_PSTVd_07 Potato spindle tuber viroid pospiviroid Tomato – the Nederlands GBVdC_PSTVd_08 Potato spindle tuber viroid pospiviroid Solanum jasminoides in vitro – Belgium GBVdC_PSTVd_09 Potato spindle tuber viroid pospiviroid Tomato – CRA-W (stam A) – Belgium GBVdC_PSTVd_04 Tomato chlorotic dwarf viroid pospiviroid Tomato – CRA-W (10/00085/VI) – Belgium GBVdC_TCDVd_01 Tomato chlorotic dwarf viroid pospiviroid Tomato – the Nederlands (mixed infection with PepMV) GBVdC_TCDVd_02 Tomato chlorotic dwarf viroid pospiviroid Surfinia Hot Pink – Belgium GBVdC_TCDVd_03 Tomato apical stunt viroid pospiviroid Solanum rantonetti (Lycianthes rantonetti - Belgium GBVdC_TASVd_01 Tomato apical stunt viroid pospiviroid Tomaat – Tunesië (menginfectie met PepMV) GBVdC_TASVd_02 Tomato apical stunt viroid pospiviroid Solanum jasminoides - België GBVdC_TASVd_03 Tomato apical stunt viroid pospiviroid Tomato – Italy (CRA-PAV, F. Fagioli) GBVdC_TASVd_04 Chrysanthemum stunt viroid pospiviroid Petunia Mirage Yellow – Belgium GBVdC_CSVd_03 Chrysanthemum stunt viroid pospiviroid Chrysanthemum cv Reagan – Belgium GBVdC_CSVd_03 Chrysanthemum stunt viroid pospiviroid chrysanthemum – Belgium GBVdC_CSVd_03 Chrysanthemum stunt viroid pospiviroid Chrysanthemum - Belgium GBVdC_CSVd_03 Columnea latent viroid pospiviroid Tomato – France (via CRA-W) GBVdC_CLVd_01 Citrus exocortis viroid pospiviroid Solanum jasminoides –

	Belgium GBVdC_CEVd_02 Chrysanthemum chlorotic mottle viroid Pelamoviroid (Avsunviroidae) Chrysanthemum – Germany (DSMZ) GBVdC_CChMVd_01 Pepper chat fruit viroid Pospiviroid bell pepper – the Nederlands (stam NVWA 3259237) GBVdC_PCFVd_02 Mexican papita viroid Pospiviroid Solanum cardiophyllum – the Nederlands (stam OG1) GBVdC_MPVd_01 Hop stunt viroid Hostuviroid (pospiviroidae) Hop – Nederland (Ko Verhoeven, stam 4912347) GBVdC_HSVd_01 Hop stunt viroid Hostuviroid (pospiviroidae) Hop – Italië (CRA-PAV, F. Faggioli) GBVdC_HSVd_01 Iresine viroid Pospiviroid Celosia – the Nederlands (stam 4416011) GBVd_IrVd_01 Dahlia latent viroid Dahlia – the Nederlands (stam 3294243) GBVd_DLVd_01
Number of non-target organisms tested	
Cross reacts with (specify the species)	
<u>Diagnostic Specificity</u>	
Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test	
Specify the standard test	
<u>Reproducibility</u>	
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	100%
<u>Repeatability</u>	
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	100%
<u>Test performance study</u>	
Test performance study?	Yes
Include brief details of the test performance study and its output.It available, provide a link to published article/report	Detection in seeds: Olivier et al. (2015; EJPP; DOI 10.1007/s10658-015-0803-8)
<u>Other information</u>	
Any other information considered useful e.g. robustness, ease of performing the test, etc.	