

EUROPEAN AND MEDITERRANEAN PLANT PROTECTION ORGANIZATION
ORGANISATION EUROPEENNE ET MEDITERRANEENNE POUR LA PROTECTION DES PLANTES
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.

Laboratory contact details	National Institute of Biology, Department of Biotechnology and Systems Biology Vecna pot 121, 1000 Ljubljana, Slovenia
Short description of the test	Test performance study on the detection of <i>Phyllosticta citricarpa</i> with real time PCR
Date, reference of the validation report	2022-07-07 - TPS NIB_Pcit
Validation process according to EPPO Standard PM7/98?	no
Is the lab accredited for this test?	no
Was the validated data generated in the framework of a project?	Euphresco
If yes, please specify	2019-A-318: CBS-Detect
Description of the test	
Organism(s)	<i>Phyllosticta citricarpa</i> (GUIGCI)
Detection / identification	detection and identification
Matrix(ces) tested	Fruits Selected set of DNA extracted from fungal isolates was diluted in DNA extracted from citrus fruit peel, to mimic non-symptomatic samples
Plant species tested	Citrus maxima, Citrus x aurantium var. sinensis, Citrus x limon
Method(s)	Molecular real time PCR Molecular real time PCR (2) Molecular real time PCR (3)
Method: Molecular real time PCR	
Reference of the test description	
As or adapted from an EPPO diagnostic protocol	yes
EPPO Diagnostic Protocol name	PM 7/017 <i>Phyllosticta citricarpa</i> (formerly <i>Guignardia citricarpa</i>) (version 3)
Name of the test	Real-time PCR (van Gent-Pelzer et al., 2007)
Is the test modified compared to the reference test	yes cycling conditions (elongation at 65°C)
Kit	

Is a kit used	no
Other information	
Reaction type	Simplex
Other details on the test	1x Universal Master Mix (Applied Biosystems)
Method: Molecular real time PCR (2)	
Reference of the test description	
As or adapted from an EPPO diagnostic protocol	no
New test being considered for inclusion in the next version of the EPPO diagnostic protocol?	no
As or adapted from an IPPC diagnostic protocol	no
Reference of the test	Zajc J., Kogej Z., Fišer S., Gostinčar C., Vicent A., Galvañ Domenech A., Ricconi L., Boonham N., Ravnikar M., Kogovšek P., et al. Highly Specific qPCR and Amplicon Sequencing Method for Detection of Quarantine Citrus Pathogen <i>Phyllosticta citricarpa</i> Applicable for Air Samples. Plant Pathol. 2023;72:548–563.
Is the test modified compared to the reference test	no
Kit	
Is a kit used	no
Other information	
Reaction type	Simplex
Other details on the test	1x Universal Master Mix (Applied Biosystems)
Method: Molecular real time PCR (3)	
Reference of the test description	
As or adapted from an EPPO diagnostic protocol	no
New test being considered for inclusion in the next version of the EPPO diagnostic protocol?	no
As or adapted from an IPPC diagnostic protocol	no
Reference of the test	Liu C.M., Kachur S., Dwan M.G., Abraham A.G., Aziz M., Hsueh P.R., Huang Y.T., Busch J.D., Lamit L.J., Gehring C.A., et al. FungiQuant: A Broad-Coverage Fungal Quantitative Real-Time PCR Assay. BMC Microbiol. 2012;12:255.
Is the test modified compared to the reference test	no
Other information	
Reaction type	Simplex

Other details on the test	Quantabio PerfeCTa® qPCR ToughMix® Low ROX
Are the performance characteristics included in the EPPO diagnostic protocol?	no
Performance Criteria :	
Organism 1.:	Phyllosticta citricarpa(GUIGCI)
<u>Diagnostic sensitivity</u>	
Proportion of infected/infested samples tested positive compared to results from the standard test, see appendix 2 of PM 7/98	Both test 99%
Standard test(s)	Panel of sample. See report
Cross-reacts with	
<u>Diagnostic Specificity</u>	
Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test	PC: 98% Pc-TEF1: 99%
Specify the test(s)	Panel of sample see report
<u>Reproducibility</u>	
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	Reproducibility for all tests: > 96%
<u>Repeatability</u>	
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	Repeatability for all tests: > 95%
<u>Test performance study</u>	
Test performance study?	yes
Brief details of the test performance study and its output.It available, link to published article/report	TPS involving 13 laboratories from 11 countries - see report and publication: Jakomin T, Žunič JZ, Kogovšek P. Test Performance Study on qPCR Assays for Detection of Phyllosticta citricarpa. Pathogens. 2025 Apr 24;14(5):413. doi: 10.3390/pathogens14050413. PMID: 40430734; PMCID: PMC12114453.
<u>Other information</u>	
Any other information considered useful	see report and publication: Jakomin T, Žunič JZ, Kogovšek P. Test Performance Study on qPCR Assays for Detection of Phyllosticta citricarpa. Pathogens. 2025 Apr 24;14(5):413. doi: 10.3390/pathogens14050413. PMID: 40430734; PMCID: PMC12114453.
The following complementary files are available online:	• Report_Pcit_TPS_final.pdf

Creation date: 2026-10-06 15:27:27 - Last update: 2026-10-08 11:11:57