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	Fera Sand Hutton, YO41 1LZ York, United Kingdom	
Short description of the test	Identification of Bemisia tabaci using crude DNA extraction and Loop-mediated isothermal amplification (LAMP)	
Date, reference of the validation report	2024-03-08 - Val/065 Identification of Bemisia tabaci using crude DNA extraction and Loop- mediated isothermal amplification (LAMP)	
Validation process according to EPPO Standard PM7/98?	yes	
Is the lab accredited for this test?	no	
Was the validated data generated in the framework of a project?	no	
Description of the test		
Organism(s)	Bemisia tabaci (BEMITA)	
Detection / identification	identification	
Method(s)	Molecular Extraction DNA RNA Molecular LAMP	
Method: Molecular Extraction DNA RNA		
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	Alkaline (KOH) lysis method (Blaser et al., 2018).	
Is the test modified compared to the reference test	no	
Kit		
Is a kit used	no	
Other information		
Method: Molecular LAMP		

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	Blaser et al., 2018.	
Is the test modified compared to the reference test	yes The LAMP assay for the identification of B. tabaci was developed by Blaser et al. (2018). At FERA, this assay was further validated to use crude extraction methods like Chelex and KOH, followed by targeted gene amplification using duplex and triplex LAMP kits provided by Optigene Ltd.	
Kit		
Is a kit used	yes	
Manufacturer name	OptiGene	
Specify the kit used	Bemisia tabaci LAMP kit	
Kit used following the manufacturer's instructions?	yes	
Other information		
Reaction type	Duplex - Triplex	
Performance Criteria :		
Organism 1.:	Bemisia tabaci(BEMITA)	
Analytical sensitivity		
What is smallest amount of target that can be detected reliably?	Single insect sample	
Diagnostic sensitivity		
Proportion of infected/infested samples tested positive compared to results from the standard test, see appendix 2 of PM 7/98	100%	
Standard test(s)	Fera lab taxonomy identification	
Analytical specificity - inclusivity		
Number of strains/populations of target organisms tested	3 species of B. tabaci were tested- MEAM1, MED and Asia1	
Specificity value	100%	
Analytical specificity - exclusivity		
Number of non-target organisms tested	6 non-target species were tested	
Specificity value	100%	
Diagnostic Specificity		
Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test	100% (Fera lab validation)	

Specify the test(s)	Fera lab Entomological identification	
Reproducibility		
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	100% (Fera lab validation)	
Repeatability		
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	100% (Fera lab validation)	
Test performance study		
Test performance study?	no	
The following complementary files are available online:	 Identification of Bemisia tabaci using crude DNA extraction and Loop-mediated isothermal amplification (LAMP) 	

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