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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