

**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.

<b>Laboratory contact details</b>	ILVO Institute for Agricultural and Fisheries Research Burg. Van Gansberghelaan 96, 9820 Merelbeke, Belgium
<b>Short description of the test</b>	Identification of <i>Meloidogyne graminicola</i> by molecular conventional PCR Bellafiore et al. 2015 in juveniles
<b>Date, reference of the validation report</b>	2023-07-31 - TEST PERFORMANCE STUDY REPORT 22MG
<b>Link to other validation data</b>	- TEST PERFORMANCE STUDY REPORT 22MG Identification of <i>Meloidogyne graminicola</i> by molecular conventional PCR Htay et al 2016 in juveniles - TEST PERFORMANCE STUDY REPORT 22MG Identification of <i>Meloidogyne graminicola</i> by molecular conventional PCR Mattos et al 2019 (oryzae primers) in juveniles - Validation report for the molecular identification of <i>Meloidogyne graminicola</i> Identification of <i>Meloidogyne graminicola</i> by molecular conventional PCR Htay et al., 2016 in juveniles - Validation report for the molecular identification of <i>Meloidogyne graminicola</i> Identification of <i>Meloidogyne graminicola</i> by molecular conventional PCR Bellafiore et al. 2015 in juveniles
<b>Validation process according to EPPO Standard PM7/98?</b>	yes
<b>Is the lab accredited for this test?</b>	no
<b>Was the validated data generated in the framework of a project?</b>	EURL
<b>If yes, please specify</b>	EU-funded project EURLs-EURCs 2021-2022 (grant SI2.870859)
<b>Description of the test</b>	
<b>Organism(s)</b>	<i>Meloidogyne graminicola</i> (MELGGC)
<b>Detection / identification</b>	identification
<b>Method(s)</b>	Molecular Extraction DNA RNA Molecular Conventional PCR Molecular Conventional PCR (2)

<b>Method: Molecular Extraction DNA RNA</b>	
<b>Reference of the test description</b>	
<b>Kit</b>	
<b>Is a kit used</b>	yes
<b>Manufacturer name</b>	
<b>Specify the kit used</b>	
Kit used following the manufacturer's instructions?	
<b>Other information</b>	
<b>Other details on the test</b>	Check TPS report
<b>Method: Molecular Conventional PCR</b>	
<b>Reference of the test description</b>	
<b>As or adapted from an EPPO diagnostic protocol</b>	no
<b>New test being considered for inclusion in the next version of the EPPO diagnostic protocol?</b>	yes
<b>As or adapted from an IPPC diagnostic protocol</b>	no
<b>Reference of the test</b>	Mattos et al., 2019
<b>Other information</b>	
<b>Reaction type</b>	Simplex
<b>Other details on the test</b>	M. oryzae primers
<b>Method: Molecular Conventional PCR (2)</b>	
<b>Reference of the test description</b>	
<b>As or adapted from an EPPO diagnostic protocol</b>	no
<b>New test being considered for inclusion in the next version of the EPPO diagnostic protocol?</b>	yes
<b>As or adapted from an IPPC diagnostic protocol</b>	no
<b>Reference of the test</b>	Bellafiore et al. 2015
<b>Kit</b>	
<b>Is a kit used</b>	no
<b>Other information</b>	
<b>Reaction type</b>	Simplex
<b>Other details on the test</b>	SCAR primers
<b>Are the performance characteristics included in the EPPO diagnostic protocol?</b>	no
<b>Performance Criteria :</b>	
<b>Organism 1.:</b>	<b>Meloidogyne graminicola(MELGGC)</b>

<b>Analytical sensitivity</b>	
<b>What is smallest amount of target that can be detected reliably?</b>	Analytical sensitivity for 1 nematode: amplification in 6 out of 18 replicates: 33% Analytical sensitivity for 2 nematodes: amplification in 8 out of 18 replicates: 44% Analytical sensitivity for 5 nematodes: amplification in 10 out of 18 replicates: 56% Analytical sensitivity for 10 nematodes: amplification in 16 out of 18 all replicates: 89%
<b>Diagnostic sensitivity</b>	
<b>Proportion of infected/infested samples tested positive compared to results from the standard test, see appendix 2 of PM 7/98</b>	Results from 7 laboratories when the test was used in combination with Mattos (2019) M.oryzae primers: DSE=98%
<b>Analytical specificity - inclusivity</b>	
<b>Number of strains/populations of target organisms tested</b>	Population from Italy and the Philippines amplified
<b>Specificity value</b>	
<b>Analytical specificity - exclusivity</b>	
<b>Number of non-target organisms tested</b>	TPS: M. incognita, M. naasi, M. oryzae
<b>Specificity value</b>	
<b>Cross reacts with</b>	Meloidogyne oryzae
<b>Diagnostic Specificity</b>	
<b>Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test</b>	Results from 7 laboratories when the test was used in combination with Mattos (2019) M.oryzae primers: DSP=100%
<b>Test performance study</b>	
<b>Test performance study?</b>	yes
<b>Brief details of the test performance study and its output.It available, link to published article/report</b>	TPS studies involving 9 laboratories, 6 target samples (2 populations, 3 samples per populations), 9 non target samples (3 samples for each 3 species M nassi, M. oryzae and M incognita).
<b>Other information</b>	
<b>Any other information considered useful</b>	TPS report available on the EURL website: <a href="https://sites.anses.fr/en/system/files/TestPerformanceStudy_Report_Meloidogyne_graminicola.pdf">https://sites.anses.fr/en/system/files/TestPerformanceStudy_Report_Meloidogyne_graminicola.pdf</a>

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