

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 | Anses Plant Health Laboratory - Nematology Unit Domaine de la Motte au Viconte BP 35327, 35653 Le Rheu, France |
| Short description of the test | identification of Meloidogyne graminicola by Molecular real time PCR in juveniles |
| Date, reference of the validation report | 2024-08-21 - Identification of Meloidogyne graminicola by real-time PCR Htay et al 2016 on isolated juveniles |
| Link to other validation data | - Identification of Meloidogyne graminicola by real- time PCR Mattos et al., 2019 on isolated juveniles identification of Meloidogyne graminicola by Molecular real time PCR in juveniles |
| 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? | EURL |
| If yes, please specify | EU funded project EURLs-EURCs 2023-2024 (grant Project 101143591) |
| Description of the test | |
| Organism(s) | Meloidogyne graminicola(MELGGC) |
| Detection / identification | identification |
| Method(s) | Molecular Extraction DNA RNA Molecular real time PCR |
| 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? | yes |
| As or adapted from an IPPC diagnostic protocol | no |
| Reference of the test | Ibrahim et al. 1994 |
| Is the test modified compared to the reference test | yes |

| | |
|---|---|
| Kit | |
| Is a kit used | no |
| Other information | |
| Other details on the test | -Based on the use of a lysis buffer (see details in the report and EPPO diagnostic protocol). Final volume 100 microliter evaluated. |
| Method: Molecular real time PCR | |
| 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? | yes |
| As or adapted from an IPPC diagnostic protocol | no |
| Reference of the test | Htay et al 2016 |
| Is the test modified compared to the reference test | yes The reference test is in conventional PCR, which was adapted for a real-time PCR |
| Kit | |
| Is a kit used | no |
| Other information | |
| Reaction type | Simplex |
| Other details on the test | The test was developed by Htay et al., 2016, and further adapted by INIAV during an EURL TPS (Report 22MG), and validated by the EURL for Plant Parasitic Nematode |
| Performance Criteria : | |
| Organism 1.: | Meloidogyne graminicola(MELGGC) |
| Analytical sensitivity | |
| What is smallest amount of target that can be detected reliably? | 1 nematode (J2) 100% |
| Analytical specificity - inclusivity | |
| Number of strains/populations of target organisms tested | Population from Italy amplified (1, 2, 5 and 10 J2) |
| Specificity value | 100% |
| Analytical specificity - exclusivity | |
| Number of non-target organisms tested | 22 populations (2 of M. minor, 3 of M. hapla, 2 of M. chitwoodi, 2 of M. fallax, 2 of M. arenaria, 2 of M. artiellia, 2 of M. enterolobii, 2 of M. incognita, 2 of M. javanica, 2 of M. naasi, one of M. hispanica, and one of M. oryzae. |
| Specificity value | cross-reaction with M. oryzae (Ct < 27). Other species Ct > 35 or no amplification |
| Cross reacts with | Meloidogyne oryzae |

| | |
|---|--|
| Reproducibility | |
| Provide the calculated % of agreement for a given level of the pest (see PM 7/98) | 8 replicates were analyzed in 2 different trials, performed on different days and/or using two real-time PCR machines: 100% for 1, 2, and 5 J2 of M. graminicola (8 replicates x 2 PCR trials x 3 modalities = 48 tests) |
| Repeatability | |
| Provide the calculated % of agreement for a given level of the pest (see PM 7/98) | Evaluated using 8 replicates in 3 PCR trials: 100% for 1, 2, and 5 J2 of M. graminicola (8 replicates x 3 PCR trials x 3 modalities = 72 tests) |
| Test performance study | |
| Test performance study? | yes |
| Brief details of the test performance study and its output. It available, link to published article/report | TEST PERFORMANCE STUDY REPORT 22MG Identification of Meloidogyne graminicola by molecular conventional PCR Htay et al 2016 in juveniles |
| Other information | |
| Any other information considered useful | Report available on the EURL website for the NRLs or available on request to the EURL. |

Creation date: 2024-08-21 12:45:26 - Last update: 2024-08-21 15:35:14