

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.

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| Laboratory contact details | Council for Agricultural Research and Economics– Research Centre for Plant Protection and Certification Via Carlo Giuseppe Bertero, 22, 00156 Rome, Italy |
| Short description of the test | detection of <i>Xanthomonas hortorum</i> pv. <i>gardneri</i> , <i>Xanthomonas euvesicatoria</i> pv. <i>perforans</i> , <i>Xanthomonas vesicatoria</i> , <i>Xanthomonas</i> <i>euvesicatoria</i> pv. <i>euvesicatoria</i> <i>Xanthomonas</i> <i>euvesicatoria</i> pv. <i>euvesicatoria</i> by Molecular real time RT PCR in Seeds |
| Date, reference of the validation report | 2022-02-10 - Validation_ASPROPI_2017_pp143-166 |
| Link to other validation data | - Validation_ASPROPI_2017_pp143-166 detection of <i>Xanthomonas euvesicatoria</i> pv. <i>euvesicatoria</i> , <i>Xanthomonas hortorum</i> pv. <i>gardneri</i> , <i>Xanthomonas</i> <i>euvesicatoria</i> pv. <i>perforans</i> , <i>Xanthomonas</i> <i>vesicatoria</i> <i>Xanthomonas vesicatoria</i> by Molecular Conventional PCR in Seeds |
| 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? | Other_project |
| If yes, please specify | ASPROPI (Founded by MIPAAF_Italy) |
| Description of the test | |
| Organism(s) | <i>Xanthomonas hortorum</i> pv. <i>gardneri</i> (XANTGA) <i>Xanthomonas euvesicatoria</i> pv. <i>perforans</i> (XANTPF) <i>Xanthomonas vesicatoria</i> (XANTVE) <i>Xanthomonas euvesicatoria</i> pv. <i>euvesicatoria</i> (XANTEU) |
| Detection / identification | detection |
| Method(s) | Molecular real time RT PCR |
| Method: Molecular real time RT PCR | |
| Reference of the test description | |
| New test being considered for inclusion in the next version of the EPPO diagnostic protocol? | yes |
| Kit | |

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| Is a kit used | no |
| Other information | |
| Reaction type | Multiplex (>3) |
| Other details on the test | Quadruplex real-time PCR |
| Performance Criteria : | |
| Organism 1.: | Xanthomonas hortorum pv. gardneri(XANTGA) |
| Organism 2.: | Xanthomonas euvesicatoria pv. perforans(XANTPF) |
| Organism 3.: | Xanthomonas vesicatoria(XANTVE) |
| Organism 4.: | Xanthomonas euvesicatoria pv. euvesicatoria(XANTEU) |
| Analytical sensitivity | |
| What is smallest amount of target that can be detected reliably? | 10 ⁴ cfu/mL (evaluated on tomato seed extracts spiked with bacterial suspensions at known concentration) 100 fg/ul (evaluated on bacterial DNA) |
| Diagnostic sensitivity | |
| Proportion of infected/infested samples tested positive compared to results from the standard test, see appendix 2 of PM 7/98 | 92% |
| Standard test(s) | Comparison of samples with known status |
| Analytical specificity - exclusivity | |
| Number of non-target organisms tested | Among 30 non-target strains false positive occurred on: CREA-DC 1032 Xanthomonas campestris pv. campestris, CREA-DC 1033 Xanthomonas hortorum pv. pelargonii, CREA-DC 1264 Xanthomonas citri pv. citri, NCPPB 1832 Xanthomonas arboricola pv. populi, NCPPB 1946 Xanthomonas campestris pv. raphani, CREA-DC 1495 unknown saprophyte strain from tomato seeds, LMG849 Xanthomonas axonopodis pv. poinsetticola. |
| Specificity value | 76,6% |
| Diagnostic Specificity | |
| Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test | 73% |
| Specify the test(s) | Comparison of samples with known status |
| Reproducibility | |
| Provide the calculated % of agreement for a given level of the pest (see PM 7/98) | 72% |
| Repeatability | |
| Provide the calculated % of agreement for a given level of the pest (see PM 7/98) | 75% |

| Test performance study | |
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| Test performance study? | yes |
| Brief details of the test performance study and its output. It available, link to published article/report | Test performance study organized in the frame of a National Project (ASPROPI) involving seven Italian laboratories |
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| The following complementary files are available online: | <ul style="list-style-type: none"> • VALIDATION_Xanthomonas_spp_ASPROPI_2017 |

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