2024 FIRST CONSULTATION 1 July – 30 September 2024

Compiled comments for Draft annex to ISPM 27: *Meloidogyne mali.* (2018-019) - Discipline lead’s response

Participants

|  |  |
| --- | --- |
| Name | Summary |
| Eswatini | The Kingdom of Eswatini is fine with the draf standard |
| Gabon | Nous validons ce projet d'annexe à la NIMP 27. |
| Malawi | We support Wet the Draft Annex |

**T** (Type) - B = Bullet, C = Comment, P = Proposed Change, R = Rating
**S** (Status) - A = Accepted, C = Closed, O = Open, W = Withdrawn, M = Merged

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| sequential number | Para | Text | T | Comment | Discipline lead’s response |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(383) Costa Rica (30 Sep 2024 11:22 PM)**No comments I agrred | *Acknowledged* |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(380) Belarus (30 Sep 2024 3:00 PM)**The Republic of Belarus would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System | *Acknowledged* |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(377) Barbados (30 Sep 2024 11:32 AM)**Barbados has no objections to this draft. | *Acknowledged* |
|  | G | (General Comment) | C | *Category : TECHNICAL***(372) Peru (29 Sep 2024 6:07 PM)**Peru agrees with COSAVE comments | *Acknowledged* |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(359) Nigeria (28 Sep 2024 1:48 AM)**NO COMMENTS | *Acknowledged* |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(358) Germany (27 Sep 2024 6:00 PM)**Germany would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System. | *Acknowledged* |
|  | G | (General Comment) | C | *Category : TECHNICAL***(357) Chile (27 Sep 2024 4:24 PM)**Chile agrees with COSAVE comments | *Acknowledged* |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(335) Benin (26 Sep 2024 1:48 PM)**Pas de commentaire | *Acknowledged* |
|  | G | (General Comment) | C | *Category : TECHNICAL***(311) Kenya (26 Sep 2024 10:53 AM)**Kenya is in agreement with the draft standard | *Acknowledged* |
|  | G | (General Comment) | C | *Category : TECHNICAL***(297) European Union (25 Sep 2024 6:39 PM)**We compared the draft DP with EPPO PM 7/136 (1). We think the "Fig 1 Flow diagram for the detection and identification of Meloidogyne" in EPPO standard can be added here.But we understand that flow diagrams are not included in all protocols. | *Considered but not incorporated.**Flow diagram are included when absolutely necessary.* |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(296) Guyana (25 Sep 2024 4:56 PM)**Guyana supports this draft annex. | *Acknowledged* |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(294) United Kingdom (24 Sep 2024 4:45 PM)**The UK would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System. EPPO have submitted these comments on behalf of the UK and as such they should be considered as UK national comments. | *Acknowledged* |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(293) Switzerland (24 Sep 2024 12:18 PM)**Switzerland would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System | *Acknowledged* |
|  | G | (General Comment) | C | *Category : TECHNICAL***(271) Uruguay (21 Sep 2024 1:24 PM)**Uruguay agrees with COSAVE comments | *Acknowledged* |
|  | G | (General Comment) | C | *Category : TECHNICAL***(269) EPPO (17 Sep 2024 4:24 PM)**We compared the draft DP with EPPO PM 7/136 (1). I think the "Fig 1 Flow diagram for the detection and identification of Meloidogyne" in EPPO standard can be added here.But we understand that flow diagrams are not included in all protocols. | *Considered but not incorporated**Flow diagram are included when absolutely necessary.* |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(97) New Zealand (10 Sep 2024 11:44 PM)**New Zealand supports this protocol with modifications. Thanks to the authors who developed this very useful diagnostic protocol | *Acknowledged* |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(95) Mexico (6 Sep 2024 12:42 AM)**Mexico supports the DRAFT ANNEX TO ISPM 27: Meloidogyne mali (2018-019). Some proposals are included | *Acknowledged* |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(85) Senegal (29 Aug 2024 11:47 AM)**We suppot the draft annex | *Acknowledged* |
|  | G | (General Comment) | C | *Category : EDITORIAL***(63) South Africa (20 Aug 2024 12:00 PM)**No comment. | *Acknowledged* |
|  | G | (General Comment) | C | *Category : TECHNICAL***(16) Colombia (15 Aug 2024 6:40 PM)**It is suggested to include a glossary of terms for clarity, because terminology used in this document may vary | *Considered but not incorporated.**This diagnostic protocol is dedicated to experts in nematology, who are familiar with theses terms. If needed a reference to EPPO gloassary of terms (online document) could be made* [*https://www.eppo.int/media/uploaded\_images/ACTIVITIES/plant\_quarantine/TD\_1056\_EPPO\_Glossary\_2023-05.pdf*](https://www.eppo.int/media/uploaded_images/ACTIVITIES/plant_quarantine/TD_1056_EPPO_Glossary_2023-05.pdf) |
|  | G | (General Comment) | C | *Category : SUBSTANTIVE***(1) Nigeria (22 Jul 2024 11:54 AM)**The protocol has been sufficiently dealt with, There are no comments from this end. | *Acknowledged* |
|  | 1 | **DRAFT ANNEX TO ISPM 27*: Meloidogyne mali*(2018-019)** | C | *Category : SUBSTANTIVE***(381) Russian Federation (30 Sep 2024 5:19 PM)**‘General comment’: “The Russian Federation would like toformally endorse the EPPO comments submitted via the IPPC Online Comment System” | *Acknowledged* |
|  | 1 | **DRAFT ANNEX TO ISPM 27*: Meloidogyne mali*(2018-019)** | C | *Category : SUBSTANTIVE***(371) Malawi (29 Sep 2024 10:46 AM)**We support the Draft Annex | *Acknowledged* |
|  | 1 | DRAFT ANNEX TO ISPM 27: Meloidogyne mali (2018-019) | C | *Category : TECHNICAL***(295) Canada (24 Sep 2024 8:17 PM)**Canada supports the DRAFT ANNEX TO ISPM 27: Meloidogyne mali (2018-019). | *Acknowledged* |
|  | 1 | **~~DRAFT ANNEX TO ISPM 27~~PROYECTO DE ANEXO A LA NIMF  27 *~~: Meloidogyne mali~~ : Meloidogyne mali* ~~(2018-019)~~(2018-019)** | P | *Category : SUBSTANTIVE*like_depressed.pngHonduras**(96) Honduras (8 Sep 2024 10:33 PM)**Honduras apoya el PROYECTO DE ANEXO A LA NINF 27 Meloidogyne mali (2018-019) | *Acknowledged* |
|  | 1 | **DRAFT ANNEX TO ISPM 27*: Meloidogyne mali*(2018-019)** | C | *Category : SUBSTANTIVE***(47) Malawi (16 Aug 2024 4:42 AM)**We support the draft Annex | *Acknowledged* |
|  | 15 | 2018-11 SC ~~added~~ adicionou *Meloidognye mali* (2018-009) ~~to work programme~~ao programa de trabalho, ~~priority~~prioridade   3. | P | *Category : TECHNICAL***(68) Guinea-Bissau (20 Aug 2024 5:01 PM)**Nome cietifico deve ser italico ou sublinhado | *Considered but not incorporated**The scientific names are already in italic.* |
|  | 15 | 2018-11 SC ~~added~~ adicionou *Meloidognye mali* (2018-009) ~~to work programme~~ao programa de trabalho, ~~priority~~prioridade   3. | P | *Category : SUBSTANTIVE***(67) Guinea-Bissau (20 Aug 2024 4:57 PM)**priorrizado | *Considered but not incorporated**The document is only edited in english for the consultation step.* |
|  | 15 | 2018-11 SC added *Meloidognye mali*(2018-009) to work programme, priority 3. | C | *Category : EDITORIAL***(51) South Africa (20 Aug 2024 11:32 AM)**Proposal to write genus and species in full for the first time when this is used in the text. | *Incorporated**Applied to the whole document.* |
|  | 15 | 2018-11 SC added *~~Meloidognye~~ Meloidogyne mali* (2018-009) to work programme, priority 3. | P | *Category : EDITORIAL***(12) Colombia (15 Aug 2024 5:41 PM)**Corrected spelling mistake for "Meloidognye" to "Meloidogyne". | *Incorporated* |
|  | 19 | ~~20204-06~~ 2024-06 SC approved the draft DP for consultation | P | *Category : EDITORIAL***(298) European Union (25 Sep 2024 6:47 PM)** | *Incorporated* |
|  | 19 | ~~20204-06~~ 2024-06 SC approved the draft DP for consultation | P | *Category : EDITORIAL***(208) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 31 | Evelyn van Heese ~~(NIVIP~~(NVWA-NIVIP, ~~Kingdom of the Netherlands)~~NL) | P | *Category : EDITORIAL***(299) European Union (25 Sep 2024 6:50 PM)** | *Incorporated* |
|  | 31 | Evelyn van Heese ~~(NIVIP~~(NVWA-NIVIP, ~~Kingdom of the~~ The Netherlands) | P | *Category : EDITORIAL***(209) EPPO (17 Sep 2024 4:24 PM)**additional comment: The Netherlands should be NL | *Modified**Affiliation was corrected. Name of country is according to IPPC/FAO rules.* |
|  | 32 | Dr ~~Aphorio~~ Daniel Apolonio Silva de Oliveira ~~(~~(NVWA-NIVIP~~NVWA~~, ~~Kingdom of the Netherlands~~NL) | P | *Category : EDITORIAL***(300) European Union (25 Sep 2024 6:52 PM)**Pls verify name of contributors. Please refer to the institute as NVWA-NIVIP, in line with previous comment. | *Incorporated* |
|  | 32 | Dr ~~Aphorio~~ Daniel Apolonio Silva de Oliveira (~~NVWA~~NVWA-NIVIP, ~~Kingdom of the~~ The Netherlands) | P | *Category : EDITORIAL***(210) EPPO (17 Sep 2024 4:24 PM)**Pls verify name of contributors. Please refer to theb institute as NVWA-NIVIP, in line with previous comment. | *Modified**Affiliation was corrected. Name of country is according to IPPC/FAO rules.* |
|  | 33 | Yiwu Fang (Technical Center of Ningbo Customs, ~~China)~~CN) | P | *Category : EDITORIAL***(301) European Union (25 Sep 2024 6:52 PM)** | *Incorporated* |
|  | 33 | Yiwu Fang (Technical Center of Ningbo Customs, ~~China)~~CN) | P | *Category : EDITORIAL***(211) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 46 | The annex is a prescriptive part of ISPM 27 (*Diagnostic protocols for regulated pests*). | C | *Category : TECHNICAL***(382) Congo, DR (30 Sep 2024 9:33 PM)**nous soutenons ce projet de document et attendons d'autres clarifications | *Acknowledged* |
|  | 48 | The root-knot nematode genus *Meloidogyne* comprises at present more than 100 formally described species. All species are endoparasitic and some are well known for their negative impact on crops worldwide ~~(Karssen,~~ (Karssen *et al*.~~Wesemael and Moens~~, 2013). | P | *Category : EDITORIAL***(131) Japan (17 Sep 2024 12:03 PM)** | *Considered but not incorporated**IPPC rule is to procide all names of a reference when the number of authors is a maximum of 3.* |
|  | 48 | The root-knot nematode genus *Meloidogyne* comprises at present more than 100 formally described species. All species are endoparasitic and some are well known for their negative impact on crops worldwide ~~(Karssen,~~ (Karssen et al ~~Wesemael and Moens~~2013).~~, 2013).~~ | P | *Category : TECHNICAL***(98) New Zealand (11 Sep 2024 12:16 AM)**Reference added. Karssen G, Wesemael W, Moens M. (2013) Root-knot nematodes. In: Perry RN, Moens M. (Eds) Plant Nematology. 2nd edition, CAB International, Wallingford, UK, 73-108. | *Considered but not incorporated**IPPC rule is to procide all names of a reference when the number of authors is a maximum of 3.* |
|  | 48 | The root-knot nematode genus *Meloidogyne* comprises at present more than 100 formally described species. All species are endoparasitic and some are well known for their negative impact on crops worldwide (Karssen, Wesemael and Moens, 2013). | C | *Category : SUBSTANTIVE***(86) Mexico (6 Sep 2024 12:18 AM)**It is suggested to update species information considering Subbotin et al, 2021 who mention 98 valid species, seven species inquerendae and six species nomina nuda. Subbotin, S. A., Rius, J. E. P., and Castillo, P. 2021. Systematics of root-knot nematodes (Nematoda: Meloidogynidae). Leiden, the Netherlands: Brill. | *Incorporated* |
|  | 48 | The root-knot nematode genus *Meloidogyne* comprises at present more than 100 formally described species. All species are endoparasitic and some are well known for their negative impact on crops worldwide (Karssen, Wesemael and Moens, 2013). | C | *Category : SUBSTANTIVE***(73) Guinea-Bissau (21 Aug 2024 12:17 PM)**We do not have the coments, it can be like it is | *Acknowledged* |
|  | 48 | The root-knot nematode genus *Meloidogyne* comprises at present more than 100 formally described species. All species are endoparasitic and some are well known for their negative impact on crops worldwide (Karssen, Wesemael and Moens, 2013). | C | *Category : EDITORIAL***(52) South Africa (20 Aug 2024 11:33 AM)**Proposal to write the reference as “Karssen et al., 2013” as there are more than two authors. | *Considered but not incorporated**IPPC rule is to procide all names of a reference when the number of authors is a maximum of 3.* |
|  | 49 | A relatively small number of the described species are known to parasitize trees and shrubs (Jepson, 1987). One such species is *Meloidogyne mali* Itoh, Ohshima and Ichinohe, 1969 – a species described from *Malus domestica* (apple) in Japan (Itoh, Ohshima and Ichinohe, 1969). *Meloidogyne ~~M.~~mali* is a polyphagous and economically important pest species that induces large root galls on host plants, affecting the ability of the plant to take up water and nutrients from the soil. It was added to the European and Mediterranean Plant Protection Organization’s *List of pests recommended for regulation as quarantine pests* (EPPO A2 List: EPPO, n.d.(a)) in 2017. | P | *Category : EDITORIAL***(133) Japan (17 Sep 2024 12:07 PM)**If the scientific name comes at the beginning of the sentence, the genus name should not be omitted. | *Incorporated* |
|  | 49 | A relatively small number of the described species are known to parasitize trees and shrubs (Jepson, 1987). One such species is *Meloidogyne mali* Itoh, Ohshima and Ichinohe, 1969 – a species described from *Malus domestica* (apple) in Japan ~~(Itoh,~~ (Itohet *et al*.~~Ohshima and Ichinohe~~, 1969). *M. mali* is a polyphagous and economically important pest species that induces large root galls on host plants, affecting the ability of the plant to take up water and nutrients from the soil. It was added to the European and Mediterranean Plant Protection Organization’s *List of pests recommended for regulation as quarantine pests* (EPPO A2 List: EPPO, n.d.(a)) in 2017. | P | *Category : EDITORIAL***(132) Japan (17 Sep 2024 12:05 PM)** | *Considered but not incorporated**IPPC rule is to procide all names of a reference when the number of authors is a maximum of 3.* |
|  | 49 | A relatively small number of the described species are known to parasitize trees and shrubs (Jepson, 1987). One such species is *Meloidogyne mali* Itoh, Ohshima and Ichinohe, 1969 – a species described from *Malus domestica* (apple) in Japan (Itoh, Ohshima and Ichinohe, 1969). *M. mali*is a polyphagous and economically important pest species that induces large root galls on host plants, affecting the ability of the plant to take up water and nutrients from the soil. It was added to the European and Mediterranean Plant Protection Organization’s *List of pests recommended for regulation as quarantine pests* (EPPO A2 List: EPPO, n.d.(a)) in 2017. | C | *Category : TECHNICAL***(100) New Zealand (11 Sep 2024 12:24 AM)**Steward to consider adding a reference. | *Incorporated**Reference added, text amended to ‘M. mali is a polyphagous and economically important pest species that induces large root galls on host plants (Ahmed et al, 2013)’.**The statement ‘affecting the ability of the plant to take up water and nutrients from the soil’ has been referenced with Lawrence and Prior (2025).*  |
|  | 49 | A relatively small number of the described species are known to parasitize trees and shrubs (Jepson, 1987). One such species is *Meloidogyne mali* Itoh, Ohshima and Ichinohe, 1969 – a species described from *Malus domestica* (apple) in ~~Japan (Itoh,~~ Japan~~Ohshima and Ichinohe~~. ~~, 1969).~~ *M. mali* is a polyphagous and economically important pest species that induces large root galls on host plants, affecting the ability of the plant to take up water and nutrients from the soil. It was added to the European and Mediterranean Plant Protection Organization’s *List of pests recommended for regulation as quarantine pests* (EPPO A2 List: EPPO, n.d.(a)) in 2017. | P | *Category : TECHNICAL***(99) New Zealand (11 Sep 2024 12:23 AM)**Remove as it is a duplication of a reference | *Consider but not included.**The first citation of the three authors correspond to the descriptors of the species, whereas the second citation is a reference in fact.* |
|  | 49 | ~~A relatively small number of the described species are known to parasitize trees and shrubs (Jepson, 1987). One such species is~~ *~~Meloidogyne mali~~* ~~Itoh, Ohshima and Ichinohe, 1969 – a species described from~~ *~~Malus domestica~~* ~~(apple) in Japan (Itoh, Ohshima and Ichinohe, 1969).~~ *~~M. mali~~* ~~is a polyphagous and economically important pest species that induces large root galls on host plants, affecting the ability of the plant to take up water and nutrients from the soil. It was added to the European and Mediterranean Plant Protection Organization’s~~ *~~List of pests recommended for regulation as quarantine pests~~* ~~(EPPO A2 List: EPPO, n.d.(a)) in 2017.~~Um número relativamente pequeno das espécies descritas é conhecido por parasitar árvores e arbustos (Jepson, 1987). Uma dessas espécies é *Meloidogyne mali* Itoh, Ohshima e Ichinohe, 1969 - uma espécie descrita de *Malus domestica* (maçã) no Japão (Itoh, Ohshima e Ichinohe, 1969). *M. mali* é uma espécie de praga polífaga e economicamente importante que induz grandes galhas radiculares nas plantas hospedeiras, afetando a capacidade da planta de absorver água e nutrientes do solo. Foi adicionado à lista da Organização Europeia e Mediterrânea *de Proteção de Plantas recomendadas para regulamentação como pragas de quarentena* (Lista A2 da EPPO: EPPO, s.d.(a)) em 2017. | P | *Category : EDITORIAL***(66) Guinea-Bissau (20 Aug 2024 4:52 PM)**da aproteçao das Plantas | *Considred but not included**This protocol for consultation is only available in English.*  |
|  | 49 | ~~A relatively small number of the described species are known to parasitize trees and shrubs (Jepson, 1987). One such species is~~ *~~Meloidogyne mali~~* ~~Itoh, Ohshima and Ichinohe, 1969 – a species described from~~ *~~Malus domestica~~* ~~(apple) in Japan (Itoh, Ohshima and Ichinohe, 1969).~~ *~~M. mali~~* ~~is a polyphagous and economically important pest species that induces large root galls on host plants, affecting the ability of the plant to take up water and nutrients from the soil. It was added to the European and Mediterranean Plant Protection Organization’s~~ *~~List of pests recommended for regulation as quarantine pests~~* ~~(EPPO A2 List: EPPO, n.d.(a)) in 2017.~~Um número relativamente pequeno das espécies descritas é conhecido por parasitar árvores e arbustos (Jepson, 1987). Uma dessas espécies é *Meloidogyne mali* Itoh, Ohshima e Ichinohe, 1969 - uma espécie descrita de *Malus domestica* (maçã) no Japão (Itoh, Ohshima e Ichinohe, 1969). *M. mali* é uma espécie de praga polífaga e economicamente importante que induz grandes galhas radiculares nas plantas hospedeiras, afetando a capacidade da planta de absorver água e nutrientes do solo. Foi adicionado à lista da Organização Europeia e Mediterrânea *de Proteção de Plantas recomendadas para regulamentação como pragas de quarentena* (Lista A2 da EPPO: EPPO, s.d.(a)) em 2017. | P | *Category : TECHNICAL***(65) Guinea-Bissau (20 Aug 2024 4:46 PM)**no tenhs comentarioa | *Considred but not included**This protocol for consultation is only available in English.* |
|  | 50 | *M. mali* is widely distributed in Japan, where the stunting and severe decline of infected trees in orchards has been reported (Nyczepir and Halbrendt, 1993). It has been recorded parasitizing a large number of ~~host~~ trees, shrubs and herbaceous plants, as listed in the EPPO (2017) pest risk analysis for *M. mali*. To date, very little information is available on yield losses in cultivated plants. As this is ~~an emerging~~ a pest on many tree and ornamental ~~plant hosts~~plants, the economic impacts of the damage or loss ~~of these hosts~~ in natural environments have also not yet been established.. The following examples, however, may provide an indication of the impact: | P | *Category : EDITORIAL***(302) European Union (25 Sep 2024 6:56 PM)**Suggestion to call this "an emerging pest" only when recently new or more findings have been reportedCreated by merging other changes together | *Modified**The therm emerging was deleted and replaced by pest of concern.* |
|  | 50 | *M. mali* is widely distributed in Japan, where the stunting and severe decline of infected trees in orchards has been reported (Nyczepir and Halbrendt, 1993). It has been recorded parasitizing a large number of host trees, shrubs and herbaceous plants, as listed in the EPPO (2017) pest risk analysis for *M. mali*. To date, very little information is available on yield losses in cultivated plants. As this is an emerging pest on many ~~tree~~ trees and ornamental plant hosts, the economic impacts of the loss of these hosts in natural environments have also not yet been established.~~.~~  The following examples, however, may ~~provide an indication of~~ indicate the impact: | P | *Category : EDITORIAL***(272) Kuwait (24 Sep 2024 7:31 AM)** | *Incorporated* |
|  | 50 | *M. mali* is widely distributed in Japan, where the stunting and severe decline of infected trees in orchards has been reported (Nyczepir and Halbrendt, 1993). It has been recorded parasitizing a large number of ~~host~~ trees, shrubs and herbaceous plants, as listed in the EPPO (2017) pest risk analysis for *M. mali*. To date, very little information is available on yield losses in cultivated plants. As this is ~~an emerging~~ a pest on many tree and ornamental ~~plant hosts~~plants, the economic impacts of the damage or loss ~~of these hosts~~ in natural environments have also not yet been established~~.~~. The following examples, however, may provide an indication of the impact: | P | *Category : EDITORIAL***(212) EPPO (17 Sep 2024 4:24 PM)**Suggestion to call this "an emerging pest" only when recently new or more findings have been reportedCreated by merging other changes together | *Modified**The therm emerging was deleted and replaced by pest of concern.* |
|  | 50 | *~~M.~~Meloidogyne mali* is widely distributed in Japan, where the stunting and severe decline of infected trees in orchards has been reported (Nyczepir and Halbrendt, 1993). It has been recorded parasitizing a large number of host trees, shrubs and herbaceous plants, as listed in the EPPO (2017) pest risk analysis for *M. mali*. To date, very little information is available on yield losses in cultivated plants. As this is an emerging pest on many tree and ornamental plant hosts, the economic impacts of the loss of these hosts in natural environments have also not yet been established.~~.~~  The following examples, however, may provide an indication of the impact: | P | *Category : EDITORIAL***(134) Japan (17 Sep 2024 12:07 PM)** | *Incorporated* |
|  | 50 | *M. mali* is widely distributed in Japan, where the stunting and severe decline of infected trees in orchards has been reported (Nyczepir and Halbrendt, 1993). It has been recorded parasitizing a large number of host trees, shrubs and herbaceous plants, as listed in the EPPO (2017) pest risk analysis for *M. mali*. To date, very little information is available on yield losses in cultivated plants. As this is an emerging pest on many ~~tree~~ horticultural and ornamental plant hosts, the economic impacts of the loss of these hosts in natural environments have also not yet been established.. The following examples, however, may provide an indication of the impact: | P | *Category : EDITORIAL***(101) New Zealand (11 Sep 2024 12:26 AM)**Tree is a more general term, suggest revising to Horticulture to be more specific. | *Considered but not incorporated**The text is maintained in respect of the citations.* |
|  | 50 | *M. mali* is widely distributed in Japan, where the stunting and severe decline of infected trees in orchards has been reported (Nyczepir and Halbrendt, 1993). It has been recorded parasitizing a large number of host trees, shrubs and herbaceous plants, as listed in the EPPO (2017) pest risk analysis for *M. mali*. To date, very little information is available on yield losses in cultivated plants. As this is an emerging pest on many tree and ornamental plant hosts, the economic impacts of the loss of these hosts in natural environments have also not yet been established.~~.~~  The following examples, however, may provide an indication of the impact: | P | *Category : EDITORIAL***(87) Mexico (6 Sep 2024 12:19 AM)**Delet final point | *Incorporated* |
|  | 51 | *Morus* sp. (mulberry): In a pot trial, up to 50% crop loss was shown in young trees, depending on the level of M. mali infestation (Toida, 1991).  | P | *Category : SUBSTANTIVE***(102) New Zealand (11 Sep 2024 12:29 AM)**Add scientific name | *Incorporated* |
|  | 52 | *Malus domestica* (apple): *M. mali* is described as one of the most damaging nematodes for apples in northern Japan, causing ~~the~~ stunting and severe decline of trees in orchards (Itoh, Ohshima and Ichinohe, 1969; Nyczepir and Halbrendt, 1993). *M. mali* reduces apple tree growth by 15–43% and fruit yield is reduced on heavily infested trees (Nyczepir and Halbrendt, 1993). | P | *Category : EDITORIAL***(303) European Union (26 Sep 2024 12:12 AM)** | *Incorporated* |
|  | 52 | *Malus domestica* (apple): *~~M.~~Meloidogyne mali* is described as one of the most damaging nematodes for apples in northern Japan, causing the stunting and severe decline of trees in orchards ~~(Itoh,~~ (Itoh *et al*.~~Ohshima~~ , 1969; Nyczepir and ~~Ichinohe~~Halbrendt, 1993). *Meloidogyne* ~~, 1969; Nyczepir and Halbrendt, 1993).~~ *~~M.~~mali* reduces apple tree growth by 15–43% and fruit yield is reduced on heavily infested trees (Nyczepir and Halbrendt, 1993). | P | *Category : EDITORIAL***(135) Japan (17 Sep 2024 12:09 PM)** | *Modified**The citation of authors is maintained as it respects IPPC style.* |
|  | 52 | *Malus domestica* (apple): *M. mali* is described as one of the most damaging nematodes for apples in northern Japan, causing ~~the~~ stunting and severe decline of trees in orchards (Itoh, Ohshima and Ichinohe, 1969; Nyczepir and Halbrendt, 1993). *M. mali* reduces apple tree growth by 15–43% and fruit yield is reduced on heavily infested trees (Nyczepir and Halbrendt, 1993). | P | *Category : EDITORIAL***(213) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 52 | *Malus domestica* (apple): *M. mali* is described as one of the most damaging nematodes for apples in northern Japan, causing the stunting and severe decline of trees in orchards (Itoh, Ohshima and Ichinohe, 1969; Nyczepir and Halbrendt, 1993). *M. mali* reduces apple tree growth by 15–43% and fruit yield ~~is~~ was reduced on heavily infested trees (Nyczepir and Halbrendt, 1993). | P | *Category : EDITORIAL***(103) New Zealand (11 Sep 2024 12:29 AM)** | *Incorporated* |
|  | 53 | This species is considered to have been introduced into the ~~Kingdom of the~~ Netherlands, during ~~which time~~ a breeding programme that involved importing a large amount of *Ulmus sp.* (elm) material ~~(seeds~~including seeds, cuttings and occasionally rooted ~~material) was imported~~material. In 1992, rooted elm seedlings were sent to several other European countries (Heybroek, 1993). The nematode was reported from elm trees in Italy by Palmisano and Ambrogioni (2000) as a new species *Meloidogyne ulmi*, which was later synonymized to *M. mali* (Ahmed *et al*., 2013). To date, in addition to Japan, *M. mali* has been reported locally in Europe, the Republic of Korea and the United States of America (EPPO, n.d.(b)). Based on a pest risk analysis, *M. mali* is regulated in many countries (EPPO, n.d.(b)).  | P | *Category : EDITORIAL***(304) European Union (26 Sep 2024 12:23 AM)** | *Incorporated* |
|  | 53 | This species is considered to have been introduced into the ~~Kingdom of the~~ Netherlands, during ~~which time~~ a breeding programme that involved importing a large amount of *Ulmus sp.* (elm) ~~material (seeds~~material, including seeds, cuttings and occasionally rooted ~~material) was imported~~material. In 1992, rooted elm seedlings were sent to several other European countries (Heybroek, 1993). The nematode was reported from elm trees in Italy by Palmisano and Ambrogioni (2000) as a new species *Meloidogyne ulmi*, which was later synonymized to *M. mali* (Ahmed *et al*., 2013). To date, in addition to Japan, *M. mali* has been reported locally in Europe, the Republic of Korea and the United States of America (EPPO, n.d.(b)). Based on a pest risk analysis, *M. mali* is regulated in many countries (EPPO, n.d.(b)).  | P | *Category : EDITORIAL***(214) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 53 | This species is considered to have been introduced into the Kingdom of the Netherlands, during which time a large amount of *Ulmus sp.* (elm) ~~material~~ propagation materials (seeds, cuttings and occasionally rooted material) was imported. In 1992, rooted elm seedlings were sent to several other European countries (Heybroek, 1993). The nematode was reported from elm trees in Italy by Palmisano and Ambrogioni (2000) as a new species *Meloidogyne ulmi*, which was later synonymized to *M. mali* (Ahmed *et al*., 2013). To date, in addition to Japan, *M. mali* has been reported locally in Europe, the Republic of Korea and the United States of America (EPPO, n.d.(b)). Based on a pest risk analysis, *M. mali* is regulated in many countries (EPPO, n.d.(b)).  | P | *Category : EDITORIAL***(105) New Zealand (11 Sep 2024 12:31 AM)**to be more specific about type of material | *Incorporated* |
|  | 53 | This species is considered to have been introduced into the Kingdom of the Netherlands, during which time a large amount of *Ulmus sp.* (elm) material (seeds, cuttings and occasionally rooted material) was imported. In 1992, rooted elm seedlings were sent to several other European countries (Heybroek, 1993). The nematode was reported from elm trees in Italy by Palmisano and Ambrogioni (2000) as a new species *Meloidogyne ulmi*, which was later synonymized to *M. mali* (Ahmed *et al*., 2013). To date, in addition to Japan, *M. mali* has been reported locally in Europe, the Republic of Korea and the United States of America (EPPO, n.d.(b)). Based on a pest risk analysis, *M. mali* is regulated in many countries (EPPO, n.d.(b)).  | C | *Category : SUBSTANTIVE***(104) New Zealand (11 Sep 2024 12:31 AM)**For this paragraph consider revising the geographical distribution where it is not directly relevant for diagnosis. | *Incorporated* |
|  | 53 | This species is considered to have been introduced into the Kingdom of the Netherlands, during which time a large amount of *Ulmus sp.* (elm) material (seeds, cuttings and occasionally rooted material) was imported. In 1992, rooted elm seedlings were sent to several other European countries (Heybroek, 1993). The nematode was reported from elm trees in Italy by Palmisano and Ambrogioni (2000) as a new species *Meloidogyne ulmi*, which was later synonymized to *M. mali* (Ahmed *et al*., 2013). To date, in addition to Japan, *M. mali* has been reported locally in Europe, the Republic of Korea and the United States of America (EPPO, n.d.(b)). Based on a pest risk analysis, *M. mali* is regulated in many countries (EPPO, n.d.(b)).  | C | *Category : SUBSTANTIVE***(88) Mexico (6 Sep 2024 12:20 AM)**Include reference: Eisenback et al, 2017. | *Incorporated* |
|  | 53 | This species is considered to have been introduced into the Kingdom of the Netherlands, during which time a large amount of *Ulmus sp.* (elm) material (seeds, cuttings and occasionally rooted material) was imported. In 1992, rooted elm seedlings were sent to several other European countries (Heybroek, 1993). The nematode was reported from elm trees in Italy by Palmisano and Ambrogioni (2000) as a new species *Meloidogyne ulmi*, which was later synonymized to *M. mali* (Ahmed *et al*., 2013). To date, in addition to Japan, *M. mali* has been reported locally in Europe, the Republic of Korea and the United States of America (EPPO, n.d.(b)). Based on a pest risk analysis, *M. mali* is regulated in many countries (EPPO, n.d.(b)).  | C | *Category : EDITORIAL***(54) South Africa (20 Aug 2024 11:36 AM)**Proposal for addition of “from where the elm material was imported” and source information. | *Considered but not included**The current available information does not provide enough evidence f the country/countries of origin.* |
|  | 53 | This species is considered to have been introduced into the Kingdom of the Netherlands, during which time a large amount of *Ulmus sp.* (elm) material (seeds, cuttings and occasionally rooted material) was imported. In 1992, rooted elm seedlings were sent to several other European countries (Heybroek, 1993). The nematode was reported from elm trees in Italy by Palmisano and Ambrogioni (2000) as a new species *Meloidogyne ulmi*, which was later synonymized to *M. mali* (Ahmed *et al*., 2013). To date, in addition to Japan, *M. mali* has been reported locally in Europe, the Republic of Korea and the United States of America (EPPO, n.d.(b)). Based on a pest risk analysis, *M. mali* is regulated in many countries (EPPO, n.d.(b)).  | C | *Category : EDITORIAL***(53) South Africa (20 Aug 2024 11:35 AM)**Proposal for replacement of “time” with “a time period”. | *Considered but not included**The text has changed following previous comment and this comment in no longer relevant in the new sentence.* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *Maluspumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage ~~(J2)~~ juveniles ~~in those egg masses~~ (J2) in takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | P | *Category : SUBSTANTIVE***(373) Korea, Republic of (30 Sep 2024 6:34 AM)**Since second-stage juvenile is generally expressed as J2, it is suggested to express the whole thing as J2, and delete in those egg masses as it is redundant. | *Incorporated* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *Maluspumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles in those egg masses takes approximately two weeks. Further generations ~~in~~ may develop during the growing ~~season may develop~~season, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | P | *Category : EDITORIAL***(360) China (29 Sep 2024 2:59 AM)** | *Incorporated* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *~~Maluspumila~~Malus pumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) ~~juveniles in those egg masses~~ juveniles takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible ~~(G. Karssen, personal communication, 2024). It has also been suspected that~~ *~~M. mali~~* ~~overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known~~ (Ahmed *et al.*, 2013).  | P | *Category : TECHNICAL***(308) European Union (26 Sep 2024 12:41 AM)**The results of Ahmed et al 2013 and Karssen pers communication are the same: See Ahmed et al: ‘Regarding this, a very interesting observation was made during early spring of 2013 at the trial field “Mierenbos”. Egg-laying females were already found in most galls that were examined, a rare phenomenon known to occur only in M. ardenensis (Stephan and Trudgill 1982). The only plausible explanation to why egg-laying females can be observed so early in the year is that, like reported for M. ardenensis, the nematodes overwintered in the roots. ‘ | *Incorporated**With consideration of answer to comment 74.* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *Maluspumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles in those egg masses takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | C | *Category : TECHNICAL***(306) European Union (26 Sep 2024 12:29 AM)**This sentence is not very clear. Does it mean that the development from eggs to J2 juveniles takes place in the egg masses? Otherwise please delete "in those egg masses".additional comment: See also next comment, J1 is in the egg, J2 is motile outside the egg. Check the reference what juvenile stage is meant or, delete it. | *Modified (see comment 69 and 71)* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *~~Maluspumila~~Malus pumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles in those egg masses takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | P | *Category : TECHNICAL***(307) European Union (26 Sep 2024 12:34 AM)**J1 is in the egg, J2 is motile outside the egg.Please verify the reference on what juvenile stage is meant | *Incorporated**With consideration of answer to comment 74* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *~~Maluspumila~~Malus pumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles in those egg masses takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | P | *Category : TECHNICAL***(305) European Union (26 Sep 2024 12:25 AM)**Is Malus domestica not the prefered name? Also used in alinea 52 | *Incorporated*Malus pumila *replaced by* Malus domestica*.* |
|  | 54 | *~~M.~~Meloidogyne mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *Maluspumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage ~~(J2)~~ juveniles (J2s) in those egg masses takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | P | *Category : EDITORIAL***(136) Japan (17 Sep 2024 12:19 PM)** | *Incorporated* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *Maluspumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles in those egg masses takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | C | *Category : TECHNICAL***(218) EPPO (17 Sep 2024 4:24 PM)**Is Malus domestica not the prefered name? Also used in alinea 52 | *Incorporated*Malus pumila *replaced by* Malus domestica*.* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *Maluspumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles in those egg masses takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | C | *Category : TECHNICAL***(217) EPPO (17 Sep 2024 4:24 PM)**This sentence is not very clear. Does it mean that the development from eggs to J2 juveniles takes place in the egg masses? Otherwise please delete "in those egg masses".additional comment: See also next comment, J1 is in the egg, J2 is motile outside the egg. Check the reference what juvenile stage is meant or as here and by NL suggested, delete it | *Modified (see answer to comment 69)* |
|  | 54 | *M. mali*has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *Maluspumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles in those egg masses takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | C | *Category : TECHNICAL***(216) EPPO (17 Sep 2024 4:24 PM)**J1 is in the egg, J2 is motile outside the egg.Please verify the reference on what juvenile stage is meant | *Modified (see answer to comment 69)* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *~~Maluspumila~~Malus pumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles ~~in those egg masses~~ takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible ~~(G. Karssen, personal communication, 2024). It has also been suspected that~~ *~~M. mali~~* ~~overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known~~ (Ahmed *et al.*, 2013).  | P | *Category : TECHNICAL***(215) EPPO (17 Sep 2024 4:24 PM)**The results of Ahmed et al 2013 and Karssen pers communication are the same: See Ahmed et al: ‘Regarding this, a very interesting observation was made during early spring of 2013 at the trial field “Mierenbos”. Egg-laying females were already found in most galls that were examined, a rare phenomenon known to occur only in M. ardenensis (Stephan and Trudgill 1982). The only plausible explanation to why egg-laying females can be observed so early in the year is that, like reported for M. ardenensis, the nematodes overwintered in the roots. ‘ | *Incorporated**With consideration of answer to comment 74.* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are ~~common~~common in this species, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *Maluspumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg ~~masses~~ to second-stage (J2) ~~juveniles in those egg masses~~ juvenile takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the ~~roots~~ root galls of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | P | *Category : EDITORIAL***(106) New Zealand (11 Sep 2024 12:36 AM)**to clarify that in this species males are common compared with other nematode species.development is from an egg not from an egg mass | *Modified**The statement on the frequency of males has been adjusted.**See answer to comment 69* |
|  | 54 | *M. mali* has ~~sedentary endoparasitic habits. Males are common, as~~  (Janssen *~~M. mali~~* ~~is a sexually reproducing nematode (Janssen~~ *et al*., 2017). In Japan, the life cycle of *M. mali* on *Maluspumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles in those egg masses takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | P | *Category : SUBSTANTIVE***(55) South Africa (20 Aug 2024 11:38 AM)**Proposal for deletion of “has sedentary endoparasitic habits. Males are common, as M. mali is a sexually reproducing nematode” because it was mentioned in the first paragraph. | *Modified**The sedentary status was indeed mentionned in the first paragraph, but not the fact that M. mali is a sexually reproducing nematode.* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *Maluspumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles in those egg masses takes approximately two weeks. Further generations ~~in~~ during the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | P | *Category : EDITORIAL***(34) China (16 Aug 2024 1:44 AM)** | *Incorporated* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *~~Maluspumila~~Malus pumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles in those egg masses takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | P | *Category : EDITORIAL***(13) Colombia (15 Aug 2024 5:42 PM)**Suggested to review the spelling of "Maluspumila" and check the italics for scientific names. | *Incorporated* |
|  | 54 | *M. mali* has sedentary endoparasitic habits. Males are common, as *M. mali* is a sexually reproducing nematode (Janssen *et al*., 2017). In Japan, the life cycle of *M. mali* on *Maluspumila* has been observed to last 18–22 weeks, with one generation per year (Sakurai *et al.*, 1973; Inagaki, 1978). The development from egg masses to second-stage (J2) juveniles in those egg masses takes approximately two weeks. Further generations in the growing season may develop, depending on the temperature and the presence of perennial host plants; this is also reported for the related species *M. ardenensis*. Egg-laying females of *M. mali* (and *M. ardenensis*) have been observed in the Kingdom of the Netherlands in early March, which may indicate that overwintering of young females is possible (G. Karssen, personal communication, 2024). It has also been suspected that *M. mali* overwinters within the roots of infested plants, although the developmental stage at which this occurs is not yet known (Ahmed *et al.*, 2013).  | C | *Category : EDITORIAL***(33) CA (15 Aug 2024 11:44 PM)**hjkhkjhkllhh COMENTARIO | *Considered but not incorporated**No change suggested and no comment as such* |
|  | 55 | *M. mali* shares geographical areas and hosts with ~~five~~ four other species of *Meloidogyne* for which it could be confused on the basis of its morphology: *M. ardenensis* in Europe (on *Quercus robur* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. camelliae* in ~~Japan and Thailand~~Japan(on *Solanum lycopersicum* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. paramali* in Japan (on *Acer palmatum* (Gu *et al.*, 2023)), and *M. suginamiensis* in Japan (on *Acer* sp., *Morus* sp., *Prunus* sp., *Ulmus* sp.(Toida and Yaegashi, 1984; Brown, Dalmasso and Trudgill, 1993; Subbotin, Palomares-Rius and Castillo, 2021)) ~~and~~ *~~M. vitis~~* ~~in Japan (on~~ *~~Vitis vinifera~~* ~~(Yang~~ *~~et al.~~*~~, 2021))~~. | P | *Category : TECHNICAL***(289) Japan (24 Sep 2024 11:23 AM)**Meloidogyne vitis is not distributed in Japan, so the description "M. vitis in Japan (on Vitis vinifera (Yang et al., 2021)) " is incorrect.Meloidogyne mali is not distributed in Thailand. | *Modified** *The number of five other species sharing the same geographical areas and hosts is confirmed by the drafting team*
* *The status of Thailand is unclear according to sequences of M. camelliae available in the NCBI genetics database and refering to Thailand. Contact is currently made with the author of these sequences to confirm the origin of the specimens used for sequencing activities.*
* *The statement of M. vitis in Japan is not correct.*
* *Consequently the reference of countries or region for each species was deleted.*
 |
|  | 55 | *M. mali* shares geographical ~~areas~~ distribution and hosts with five species of *Meloidogyne* for which it could be confused on the basis of its morphology: *M. ardenensis* in Europe (on *Quercus robur* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. camelliae* in Japan and Thailand(on *Solanum lycopersicum* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. paramali* in Japan (on *Acer palmatum* (Gu *et al.*, 2023)), *M. suginamiensis* in Japan (on *Acer* sp., *Morus* sp., *Prunus* sp., *Ulmus* sp.(Toida and Yaegashi, 1984; Brown, Dalmasso and Trudgill, 1993; Subbotin, Palomares-Rius and Castillo, 2021)) and *M. vitis* in Japan (on *Vitis vinifera* (Yang *et al.*, 2021)). | P | *Category : EDITORIAL***(309) European Union (26 Sep 2024 12:44 AM)** | *Incorporated* |
|  | 55 | *M. mali* shares geographical areas and hosts with five species of *Meloidogyne* for which it could be confused on the basis of its morphology: *M. ardenensis* in Europe (on *Quercus robur* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. camelliae* in Japan and Thailand(on *Solanum lycopersicum* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. paramali* in Japan (on *Acer palmatum* (Gu *et al.*, 2023)), *M. suginamiensis* in Japan (on *Acer* sp., *Morus* sp., *Prunus* sp., *Ulmus* sp.(Toida and Yaegashi, 1984; ~~Brown, Dalmasso and Trudgill, 1993;~~ Subbotin, Palomares-Rius and Castillo, 2021)) and *M. vitis* in Japan (on *Vitis vinifera* (Yang *et al.*, 2021)). | P | *Category : TECHNICAL***(291) Japan (24 Sep 2024 11:29 AM)**Brown, Dalmasso and Trudgill, 1993 does not provide any information on the distribution of M. suginamiensis in Japan. | *Modified**Deletion of the refernce from Brown et al.**The reference format is the one from IPPC and is not changed according to the comment.* |
|  | 55 | *~~M.~~Meloidogyne mali* shares geographical areas and hosts with five species of *Meloidogyne* for which it could be confused on the basis of its morphology: *M. ardenensis* in Europe (on *Quercus robur* ~~(Subbotin,~~ (Subbotin *et al*~~Palomares-Rius and Castillo~~, 2021)), *M. camelliae* in Japan and Thailand(on *Solanum lycopersicum* ~~(Subbotin,~~ (Subbotin *et al*~~Palomares-Rius and Castillo~~, 2021)), *M. paramali* in Japan (on *Acer palmatum* (Gu *et al.*, 2023)), *M. suginamiensis* in Japan (on *Acer* sp., *Morus* sp., *Prunus* sp., *Ulmus* sp.(Toida and Yaegashi, 1984; Brown, Dalmasso and Trudgill, 1993; ~~Subbotin,~~ Subbotin *et al*~~Palomares-Rius and Castillo~~, 2021)) and *M. vitis* in Japan (on *Vitis vinifera* (Yang *et al.*, 2021)). | P | *Category : EDITORIAL***(290) Japan (24 Sep 2024 11:24 AM)** | *Modified**Genus name written in full at the beginning of the sentence**The reference format is the one from IPPC and is not changed according to the comment.* |
|  | 55 | *M. mali* shares geographical ~~areas~~ distribution and hosts with five species of *Meloidogyne* for which it could be confused on the basis of its morphology: *M. ardenensis* in Europe (on *Quercus robur* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. camelliae* in Japan and Thailand(on *Solanum lycopersicum* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. paramali* in Japan (on *Acer palmatum* (Gu *et al.*, 2023)), *M. suginamiensis* in Japan (on *Acer* sp., *Morus* sp., *Prunus* sp., *Ulmus* sp.(Toida and Yaegashi, 1984; Brown, Dalmasso and Trudgill, 1993; Subbotin, Palomares-Rius and Castillo, 2021)) and *M. vitis* in Japan (on *Vitis vinifera* (Yang *et al.*, 2021)). | P | *Category : EDITORIAL***(219) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 55 | *M. mali* shares geographical areas and hosts with five other species of *Meloidogyne* for which it could be confused based on ~~the basis of~~ its morphology: *M. ardenensis* in Europe (on *Quercus robur* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. camelliae* in Japan and Thailand(on *Solanum lycopersicum* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. paramali* in Japan (on *Acer palmatum* (Gu *et al.*, 2023)), *M. suginamiensis* in Japan (on *Acer* sp., *Morus* sp., *Prunus* sp., *Ulmus* sp.(Toida and Yaegashi, 1984; Brown, Dalmasso and Trudgill, 1993; Subbotin, Palomares-Rius and Castillo, 2021)) and *M. vitis* in Japan (on *Vitis vinifera* (Yang *et al.*, 2021)). | P | *Category : EDITORIAL***(107) New Zealand (11 Sep 2024 12:38 AM)**Clarify that there are five species in additional to the species in this diagnostic standard | *Incorporated* |
|  | 55 | *M. mali* shares geographical areas and hosts with five species of *Meloidogyne*for which it could be confused on the basis of its morphology: *M. ardenensis*in Europe (on *Quercus robur* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. camelliae*in Japan and Thailand(on *Solanum lycopersicum*(Subbotin, Palomares-Rius and Castillo, 2021)), *M. paramali*in Japan (on *Acer palmatum*(Gu *et al.*, 2023)), *M. suginamiensis*in Japan (on *Acer* sp.,*Morus*sp.,*Prunus*sp.,*Ulmus*sp.(Toida and Yaegashi, 1984; Brown, Dalmasso and Trudgill, 1993; Subbotin, Palomares-Rius and Castillo, 2021)) and *M. vitis*in Japan (on *Vitis vinifera*(Yang *et al.*, 2021)). | C | *Category : SUBSTANTIVE***(57) South Africa (20 Aug 2024 11:40 AM)**Proposal that an authority name and year be stated since mentioning for the first time if necessary. | *For the TPDP, is it needed to include the authority of each confusing species mentionned in this pest information section? I am not sure that we used to do so inprevious DP.* |
|  | 55 | *M. mali* shares geographical areas and hosts with five species of *Meloidogyne*for which it could be confused on the basis of its morphology: *M. ardenensis*in Europe (on *Quercus robur* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. camelliae*in Japan and Thailand(on *Solanum lycopersicum*(Subbotin, Palomares-Rius and Castillo, 2021)), *M. paramali*in Japan (on *Acer palmatum*(Gu *et al.*, 2023)), *M. suginamiensis*in Japan (on *Acer* sp.,*Morus*sp.,*Prunus*sp.,*Ulmus*sp.(Toida and Yaegashi, 1984; Brown, Dalmasso and Trudgill, 1993; Subbotin, Palomares-Rius and Castillo, 2021)) and *M. vitis*in Japan (on *Vitis vinifera*(Yang *et al.*, 2021)). | C | *Category : SUBSTANTIVE***(56) South Africa (20 Aug 2024 11:39 AM)**Proposal that an authority name and year be stated since mentioning for the first time if necessary. | *See comment 91* |
|  | 55 | *M. mali* shares geographical areas and hosts with five species of *Meloidogyne* for which it could be confused on the basis of its morphology: *M. ardenensis* in Europe (on *Quercus robur* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. camelliae* in ~~Japan and Thailand~~Japan(on *Solanum lycopersicum* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. paramali* in Japan (on *Acer palmatum* (Gu *et al.*, 2023)), *M. suginamiensis* in Japan (on *Acer* sp., *Morus* sp., *Prunus* sp., *Ulmus* sp.(Toida and Yaegashi, 1984; Brown, Dalmasso and Trudgill, 1993; Subbotin, Palomares-Rius and Castillo, 2021)) and *M. vitis* in Japan (on *Vitis vinifera* (Yang *et al.*, 2021)). | P | *Category : SUBSTANTIVE***(50) Thailand (19 Aug 2024 3:35 AM)**Thailand is of the view that we are very concerned in the text specifing the occurrence of M. camelliae in Thailand. This is because M. camelliae is notified as quarantine pest in our country and the referenced document (Subbotin, Palomares-Rius and Castillo, 2021) has no scientific information to confirm the presence of this pest in Thailand. So, we would like to delete "and Thailand" from this paragraph and we do appreciate if TPDP can provide more scientific evidence to support the original text. Please see our notification at the link below (page 12 Sub-clause no.308).https://www.doa.go.th/ard/wp-content/uploads/2019/10/G\_SPS\_N\_THA\_151\_ENG-no6.pdf | *Modified** *The status of Thailand is unclear according to sequences of M. camelliae available in the NCBI genetics database and refering to Thailand. Contact is currently made with the author of these sequences to confirm the origin of the specimens used for sequencing activities.*

*Consequently the reference of countries or region for each species was deleted.* |
|  | 55 |  *M~~. mali~~. mali*  ~~shares geographical areas~~ is widely distributed in Japan and ~~hosts with five species~~ has also been reported in Europe, the Republic of Korea, and the United States is limited, but its potential for spread remains a concern. *M. mali* shares geographical areas and hosts with five species of *Meloidogyne* for which it could be confused on the basis of its morphology: *M. ardenensis* in Europe (on *Quercus robur* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. camelliae* in Japan and Thailand(on *Solanum lycopersicum* (Subbotin, Palomares-Rius and Castillo, 2021)), *M. paramali* in Japan (on *Acer palmatum* (Gu *et al.*, 2023)), *M. suginamiensis* in Japan (on *Acer* sp., *Morus* sp., *Prunus* sp., *Ulmus* sp.(Toida and Yaegashi, 1984; Brown, Dalmasso and Trudgill, 1993; Subbotin, Palomares-Rius and Castillo, 2021)) and *M. vitis* in Japan (on *Vitis vinifera* (Yang *et al.*, 2021)). | P | *Category : EDITORIAL***(14) Colombia (15 Aug 2024 5:44 PM)**Suggest rephrasing for clarity. | *Considered but not incorporated**See answer to comment 65.**The protocol was amended to present data at regional level.* |
|  | 59 | **Taxonomic position:** Nematoda, ~~Tylenchida~~Rhabditida Chitwood (1933), ~~Meloidogynidae~~Tylenchina Thorne (1949), Tylenchomorpha De Ley & Blaxter (2002), Tylenchoidea Örley (1880), Hoplolaimidae (Filipjev (1934), Meloidogyninae Skarbilovich 1959 | P | *Category : EDITORIAL***(74) United States of America (27 Aug 2024 4:12 PM)** | *Modified**The taxonomical position is included but not the authorities, according to IPPC style.* |
|  | 63 | *M. mali* induces galls up to 0.5 cm in diameter on young roots (Figure 1); however, on older ~~roots~~ roots, these galls become larger (1–2 cm in diameter; Figure 2). These large galls are typical for *M. mali* (see also the original description of *M. mali* in Itoh, Ohshima and Ichinohe (1969) and Palmisano and Ambrogioni (2000)). | P | *Category : EDITORIAL***(273) Kuwait (24 Sep 2024 7:33 AM)** | *Incorporated* |
|  | 63 | *~~M.~~Meloidogyne mali* induces galls up to 0.5 cm in diameter on young roots (Figure 1); however, on older roots these galls become larger (1–2 cm in diameter; Figure 2). These large galls are typical for *M. mali* (see also the original description of *M. mali* in Itoh, Ohshima and Ichinohe (1969) and Palmisano and Ambrogioni (2000)). | P | *Category : EDITORIAL***(138) Japan (17 Sep 2024 12:28 PM)** | *Incorporated* |
|  | 64 | Above-ground symptoms in trees are only visible when the trees become heavily infested. Then, they will show yellowing, early leaf fall and reduced growth. ~~In the Kingdom~~ Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). In the Netherlands, several cases have been reported of heavily infested elms being uprooted during (or following) storms (EPPO, 2017, 2018). | P | *Category : EDITORIAL***(312) European Union (26 Sep 2024 11:29 AM)**First sentence of paragraph 67 (in section 3.2 (Extraction)), which rather belongs to section 3.1 (Hosts and symptoms). | *Incorporated* |
|  | 64 | Above-ground symptoms in trees are only visible when the trees become heavily infested. Then, they will show yellowing, early leaf fall and reduced growth. ~~In the Kingdom~~ Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). In the Netherlands, several cases have been reported of heavily infested elms being uprooted during (or following) storms (EPPO, 2017, 2018). | P | *Category : EDITORIAL***(220) EPPO (17 Sep 2024 4:24 PM)**First sentence of paragraph 67 (in section 3.2 (Extraction)), which rather belongs to section 3.1 (Hosts and symptoms). | *Incorporated* |
|  | 64 | ~~Above-ground~~ A~~symptoms in trees are only visible when the trees become heavily infested~~d. Then, they will show early leaf fall and reduced growth. In the Kingdom of the Netherlands, several cases have been reported of heavily infested elms being uprooted during (or following) storms (EPPO, 2017, 2018). | P | *Category : SUBSTANTIVE***(58) South Africa (20 Aug 2024 11:42 AM)**Proposal for deletion of “Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2).” | *Considered but not incorporated**See answer to comments 98 and 99* |
|  | 64 | ~~Above-ground~~ The above-ground symptoms in trees are only visible when the trees become heavily infested. Then, they will show early leaf fall and reduced growth. In the Kingdom of the Netherlands, several cases have been reported of heavily infested elms being uprooted during (or following) storms (EPPO, 2017, 2018)~~.~~.  | P | *Category : SUBSTANTIVE***(2) Lesotho (8 Aug 2024 11:54 AM)**Affected trees will exhibit early leaf fall and reduced growth. In the Netherlands, there have been several reported cases of heavily infested elms being uprooted during or after storms (EPPO, 2017, 2018). | *Considered but not incorporated**See answer to comments 98 and 99* |
|  | 65 | The principal hosts of *M. mali* are *Malus* spp. ~~(ornamental~~ (*Malus domestica* and ornamental apple species), *Ulmus* spp. (elms) and *Morus* spp. (mulberry). It has also been recorded parasitizing a wide range of other plants, including trees, shrubs and herbaceous plants, such as *Acer* ~~spp~~ *palmatum*. (Japanese maple), *Apium graveolens* (celery), *Arctium lappa* (greater burdock), *Castanea crenata* (Japanese chestnut), *Cucumis sativus* (cucumber) and *Euonymus fortunei* (wintercreeper) and *Lagerstroemia indica* (Indian crape myrtle) (EPPO, 2017, n.d.(b)). | P | *Category : TECHNICAL***(313) European Union (26 Sep 2024 11:34 AM)**1) See paragraph 52.2) More precise (see the EPPO PRA, 2017).Additional comment: If Japanese maple is in brackets as common name then it’s also better to specifiy the Acer species, or another option is Acer spp (e.g. Japanese maple) as several more Acer’s are hosts | *Incorporated* |
|  | 65 | The principal hosts of *M. mali* are *Malus* spp. ~~(ornamental~~ (*Malus domestica* and ornamental apple species), *Ulmus* spp. (elms) and *Morus* spp. (mulberry). It has also been recorded parasitizing a wide range of other plants, including trees, shrubs and herbaceous plants, such as *Acer palmatum* ~~spp.~~ (Japanese maple), *Apium graveolens* (celery), *Arctium lappa* (greater burdock), *Castanea crenata* (Japanese chestnut), *Cucumis sativus* (cucumber) and *Euonymus fortunei* (wintercreeper) and *Lagerstroemia indica* (Indian crape myrtle) (EPPO, 2017, n.d.(b)). | P | *Category : TECHNICAL***(221) EPPO (17 Sep 2024 4:24 PM)**1) See paragraph 52.2) More precise (see the EPPO PRA, 2017).Additional comment: If Japanese maple is in brackets as common name then it’s also better to specifiy the Acer species, or another option is Acer spp (e.g. Japanese maple) as several more Acer’s are hosts | *Incorporated* |
|  | 65 | The principal hosts of *M. mali* are *Malus* spp. (ornamental apple species), *Ulmus* spp. (elms) and *Morus* spp. (mulberry). It has also been recorded parasitizing a wide range of other plants, including trees, shrubs and herbaceous plants, such as *Acer* spp. (Japanese maple), *Apium graveolens* (celery), *Arctium lappa* (greater burdock), *Castanea crenata* (Japanese chestnut), *Cucumis sativus* ~~(cucumber) and~~ (cucumber), *Euonymus fortunei* (wintercreeper) and *Lagerstroemia indica* (Indian crape myrtle) (EPPO, 2017, n.d.(b)). | P | *Category : EDITORIAL***(139) Japan (17 Sep 2024 12:29 PM)** | *Incorporated* |
|  | 65 | The principal hosts of *M. mali* are *Malus* spp. (ornamental apple species), *Ulmus* spp. (elms) and *Morus* spp. (mulberry). It has also been recorded parasitizing on a wide range of other plants, including trees, shrubs and herbaceous plants, such as *Acer* spp. (Japanese maple), *Apium graveolens* (celery), *Arctium lappa* (greater burdock), *Castanea crenata* (Japanese chestnut), *Cucumis sativus* (cucumber) and *Euonymus fortunei* (wintercreeper) and *Lagerstroemia indica* (Indian crape myrtle) (EPPO, 2017, n.d.(b)). | P | *Category : EDITORIAL***(108) New Zealand (11 Sep 2024 12:40 AM)** | *Incorporated* |
|  | 66 | **3.2** **Extraction** | C | *Category : TECHNICAL***(59) South Africa (20 Aug 2024 11:44 AM)**The sieving and sugar centrifugation method can also be used for extraction from soil (Marais et al., 2017). | *Considered but not incorporated**Many extraction methods can be used. The reference EPPO (2013) (available online) is included on purpose to provide more extraction methods without expanding too much the diagnostic protocol.* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females ~~can~~ may be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles ~~can~~ may be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : SUBSTANTIVE***(361) China (29 Sep 2024 3:01 AM)**Mature or unmature swollen females, males and J2 second juveniles (J2) are not always present in the galls at the same time.And the males and J2 are not always present in plant issues or soil at the same time. | *Incorporated* |
|  | 67 | ~~Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)).~~Soil sample sizes depend on what is sampled and the accuracy that is preferred. Often the laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all types of samples a modified Baermann funnel method (e.g. a Whitehead tray) can be used for nematode extraction (EPPO, 2013). Root galls, if present, can be analysed using a dissecting microscope. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution (preferably on ice) in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : TECHNICAL***(314) European Union (26 Sep 2024 11:44 AM)**1) "types" in plural.2) Unecessary comma.In EPPO 2013 also mentioned that efficacy of Bearmann funnel method is less compared to other methods. Better not make a remark on this? Could other extraction methods be cited refering to their efficacy?Regarding the sentence: "These galls may have associated egg masses" : Egg masses are associated with the swollen females in the galls, not with the galls itself. Therefore it is suggested to be omitted.Suggestion to move this sentence to section 3.1 (Hosts and symptoms) where it belongs. Please see the associated comment on paragraph 64.What is the reference for the described soil sample size? Although this is not described in EPPO 2013, it is supported her to give an indication of the sample size in this DP.Although we think more host plants should be used, our suggestion: minimum of 5 host plants. | *Incorporated**With modifications according to the following comments on para 67* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while ~~below ground~~ below-ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all ~~type~~ types of samples, a modified Baermann funnel method (e.g. a Whitehead ~~tray),~~ tray) can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine ~~paint brush~~ paintbrush to a 0.9% NaCl solution ~~in order~~ to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : EDITORIAL***(274) Kuwait (24 Sep 2024 7:37 AM)** | *Considered but nor incorporated**See answer to comment 108* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and ~~J2 juveniles~~ J2s recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and ~~J2 juveniles~~ J2s can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and ~~third- (J3)~~ third-stage juveniles (J3s) and ~~fourth- (J4) stage juveniles)~~ fourth-stage juveniles (J4s)) and eggs (Araya ~~and Caswell-Chen~~*et al*., 1993). Males and ~~J2 juveniles~~ J2s can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : EDITORIAL***(140) Japan (17 Sep 2024 12:31 PM)** | *Modified**Suggestions for J3 and J4 incorporated* |
|  | 67 | Soil sample sizes depend on what is sampled and the accuracy that is preferred. Often the laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all types of samples a modified Baermann funnel method (e.g. a Whitehead tray) can be used for nematode extraction (EPPO, 2013). Root galls, if present, can be analysed using a dissecting microscope. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution (preferably on ice) in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)).~~Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)).~~ | P | *Category : TECHNICAL***(222) EPPO (17 Sep 2024 4:24 PM)**1) "types" in plural.2) Unecessary comma.In EPPO 2013 also mentioned that efficacy of Bearmann funnel method is less compared to other methods. Better not make a remark on this? Could other extraction methods be cited refering to their efficacy?Regarding the sentence: "These galls may have associated egg masses" : Egg masses are associated with the swollen females in the galls, not with the galls itself. Therefore it is suggested to be omitted.Suggestion to move this sentence to section 3.1 (Hosts and symptoms) where it belongs. Please see the associated comment on paragraph 64.What is the reference for the described soil sample size? Although this is not described in EPPO 2013, it is supported her to give an indication of the sample size in this DP.Although we think more host plants should be used, our suggestion: minimum of 5 host plants. | *Incorporated**With modifications according to the following comments on para 67* |
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|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | C | *Category : TECHNICAL***(110) New Zealand (11 Sep 2024 12:42 AM)**To improve readability suggest creating a separate section for ‘sampling’ | *Considered but not incorporated**The IPPC diagnostic protocol format does not include a dedicated section on sampling.* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | C | *Category : TECHNICAL***(109) New Zealand (11 Sep 2024 12:41 AM)**This sentence fits better under 3.1 hosts and symptoms | *Considered but not incorporated**See answer to comment 108* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution ~~in order~~ to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : EDITORIAL***(75) United States of America (27 Aug 2024 4:16 PM)**Beeter wording | *Incorporated* |
|  | 67 | Above-ground symptoms of heavily infested plants include ~~stunting~~ stunting, yellowing and ~~yellowing~~death, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : SUBSTANTIVE***(72) Guinea-Bissau (20 Aug 2024 6:30 PM)** | *Considered but not incorporated**See answer to comment n°108* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of plant parasitic nematodes nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : TECHNICAL***(60) South Africa (20 Aug 2024 11:45 AM)**Proposal to add “plant-parasitic”. | *Considered but not incorporated**See answer to comment n°108* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles ~~can~~ may be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : SUBSTANTIVE***(37) China (16 Aug 2024 1:47 AM)**And the males and J2 are not always present in plant issues or soil at the same time. | *Incorporated* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females ~~can~~ may be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : SUBSTANTIVE***(36) China (16 Aug 2024 1:46 AM)**Mature or unmature swollen females, males and J2 second juveniles (J2) are not always present in the galls at the same time. | *Incorporated* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles ~~can~~ may be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : SUBSTANTIVE***(35) China (16 Aug 2024 1:46 AM)** | *Incorporated* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil (ggggggg Sampling should be done using soil traps and root sampling) or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Soil samples collected from the rhizosphere of infested plants should be processed using detailed nematode extraction methods such as the Baermann funnel technique, which utilizes a funnel filled with water to extract nematodes from the soil, or centrifugal flotation, where samples are mixed with a flotation solution and centrifuged to separate nematodes. Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : TECHNICAL***(32) CA (15 Aug 2024 11:38 PM)**Cambio revisado por Colombia en 15 ago. 2024 18:49 | *Considered but not included**See answer to comment n°108* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil (ld be done using uuuuuuuuuu and root sampling) or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Soil samples collected from the rhizosphere of infested plants should be processed using detailed nematode extraction methods such as the Baermann funnel technique, which utilizes a funnel filled with water to extract nematodes from the soil, or centrifugal flotation, where samples are mixed with a flotation solution and centrifuged to separate nematodes. Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : EDITORIAL***(30) CA (15 Aug 2024 11:34 PM)**Cambio revisado por Colombia en 15 ago. 2024 18:49 | *Considered but not included**See answer to comment n°108* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil (Sampling should be done using soil traps and root sampling) or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Soil samples collected from the rhizosphere of infested plants should be processed using detailed nematode extraction methods such as the Baermann funnel technique, which utilizes a funnel filled with water to extract nematodes from the soil, or centrifugal flotation, where samples are mixed with a flotation solution and centrifuged to separate nematodes. Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : TECHNICAL***(17) Colombia (15 Aug 2024 6:49 PM)**It is suggested to detail the recommended sampling methods.Provide more detailed methods for nematode extraction to enhance replicability. | *Considered but not incorporated**See answer to comment n°108**In addition IPPC diagnostic protocol does not instruct on sampling approaches.* |
|  | 67 | Above-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g~~.~~., a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : EDITORIAL***(15) Colombia (15 Aug 2024 5:46 PM)**Correct punctuation for better readability. | *Considered but not incorporated* |
|  | 67 | The ab~~Above-ground~~ ove-ground symptoms of heavily infested plants include stunting and yellowing, while below ground typical root galls are found (Figure 1 and Figure 2). Laboratory analysis is performed from a sample of 0.5–1 kg soil or growing media mixed with the roots from 3–5 host plants. To detect the presence of nematodes, it is necessary to extract nematodes from roots (all life stages possibly recovered), soil or growing media (only motile males and J2 juveniles recovered). For all type of samples a modified Baermann funnel method (e.g. a Whitehead tray), can be used for nematode extraction (EPPO, 2013). Root galls, if present, are analysed using a dissecting microscope. These galls may have associated egg masses. If galls with egg masses are observed, mature swollen females, males and J2 juveniles can be obtained. Mature females can be isolated from the roots by dissecting the root tissue under a dissecting microscope with transmitted light. They should be transferred using a pipette, fine forceps (or tweezers) or a fine paint brush to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. Alternatively, enzymatic digestion of roots with cellulase and pectinase can be used for the recovery of sedentary stages (females and third- (J3) and fourth- (J4) stage juveniles) and eggs (Araya and Caswell-Chen, 1993). Males and J2 juveniles can be obtained from plant tissues or soil by suitable extraction techniques (see, for example, EPPO (2013)). | P | *Category : EDITORIAL***(3) Lesotho (8 Aug 2024 11:58 AM)**The fifth like should read as For all type(s) | *Considered but not incorporated**See answer to comment n°108* |
|  | 68 | ~~Specimens suspected of belonging to the genus~~ *~~Meloidogyne~~* ~~may be distinguished based on their morphology. Second-stage juveniles of~~ *~~M. mali~~* ~~(and other~~ *~~Meloidogyne~~* ~~spp.) are relatively small in length and differ from other plant-parasitic nematodes by having a delicate stylet with distinct basal knobs, the lip region being slightly set off from the body, and the metacorpus and plates being relatively large, distinct and oval-shaped. The tail is typically conoid and slim, with a prominent hyaline region. The body of adult males is vermiform and much longer than the J2 juveniles, with a sclerotized cephalic framework set off from the body, a large and distinct stylet and a pair of spicules near to the terminus.~~ | P | *Category : EDITORIAL***(316) European Union (26 Sep 2024 11:48 AM)**Suggestion to move this paragraph to section 4 (Identification) where it belongs. | *Considered but not incorporated**This paragraph was developed on purpose to answer a question raised by the TPDP about the detection of the nematodes. The extraction alone is not the detection of nematodes, there is always a step of observation. This is was it deals with.* |
|  | 68 | ~~Specimens suspected of belonging to the genus~~ *~~Meloidogyne~~* ~~may be distinguished based on their morphology. Second-stage juveniles of~~ *~~M. mali~~* ~~(and other~~ *~~Meloidogyne~~* ~~spp.) are relatively small in length and differ from other plant-parasitic nematodes by having a delicate stylet with distinct basal knobs, the lip region being slightly set off from the body, and the metacorpus and plates being relatively large, distinct and oval-shaped. The tail is typically conoid and slim, with a prominent hyaline region. The body of adult males is vermiform and much longer than the J2 juveniles, with a sclerotized cephalic framework set off from the body, a large and distinct stylet and a pair of spicules near to the terminus.~~ | P | *Category : EDITORIAL***(223) EPPO (17 Sep 2024 4:24 PM)**Suggestion to move this paragraph to section 4 (Identification) where it belongs. | *Considered but not incorporated**This paragraph was developed on purpose to answer a question raised by the TPDP about the detection of the nematodes. The extraction alone is not the detection of nematodes, there is always a step of observation. This is was it deals with.* |
|  | 68 | Specimens suspected of belonging to the genus *Meloidogyne* may be distinguished based on their morphology. Second-stage juveniles of *M. mali* (and other *Meloidogyne* spp.) are relatively small in length and differ from other plant-parasitic nematodes by having a delicate stylet with distinct basal knobs, the lip region being slightly set off from the body, and the metacorpus and plates being relatively large, distinct and oval-shaped. The tail is typically conoid and slim, with a prominent hyaline region. The body of adult males is vermiform and much longer than the ~~J2 juveniles~~J2s, with a sclerotized cephalic framework set off from the body, a large and distinct stylet and a pair of spicules near to the terminus. | P | *Category : EDITORIAL***(141) Japan (17 Sep 2024 12:33 PM)** | *Incorporated* |
|  | 68 | Specimens suspected of belonging to the genus *Meloidogyne* may be distinguished based on their morphology. Second-stage juveniles of *M. mali* (and other *Meloidogyne* spp.) are relatively small in length and differ from other plant-parasitic nematodes by having a delicate stylet with distinct basal knobs, the lip region being slightly set off from the body, and the metacorpus and plates being relatively large, distinct and oval-shaped. The tail is typically conoid and slim, with a prominent hyaline region. The body of adult males is vermiform and much longer than the J2 juveniles, with a sclerotized cephalic framework set off from the body, a large and distinct stylet and a pair of spicules near to the terminus. | C | *Category : SUBSTANTIVE***(112) New Zealand (11 Sep 2024 12:51 AM)**suggest moving this para to section 4 'Identification' for better flow of text | *Considered but not incorporated**This paragraph was developed on purpose to answer a question raised by the TPDP about the detection of the nematodes. The extraction alone is not the detection of nematodes, there is always a step of observation. This is was it deals with.* |
|  | 68 | Specimens suspected of belonging to the genus *Meloidogyne* may be distinguished based on their morphology. Second-stage juveniles of *M. mali* (and other *Meloidogyne* spp.) are relatively small in length and differ from other plant-parasitic nematodes by having a delicate stylet with distinct basal knobs, the lip region being slightly set off from the body, and the metacorpus and plates being relatively large, distinct and oval-shaped. The tail is typically conoid and slim, with a prominent hyaline region. The body of adult males is vermiform and much longer than the J2 juveniles, with a sclerotized cephalic framework set off from the body, a large and distinct stylet and a pair of spicules near to the terminus. | C | *Category : EDITORIAL***(4) Lesotho (8 Aug 2024 12:00 PM)**Even the last line a pair of spicules near the terminus not to | *Incorporated* |
|  | 70 | *M. mali* can be identified solely based on morphology; however, a combination of morphological, biochemical and molecular methods would further support diagnosis.  | C | *Category : SUBSTANTIVE***(318) European Union (26 Sep 2024 11:56 AM)**The use of "would" in this paragraph 70 is not consistent with the "should" used in the last sentence of paragraph 82. The wording from the EPPO standard is "As the morphological characters of M. mali are similar tothose of other Meloidogyne species, identification to species level should be based on a combination of morphological/morphometric characters and isozyme electrophoresis or sequencing/DNA barcoding."As the EPPO "should" was modified to "would", it seems that the intention of the draft IPPC DP is a recommendation rather than an obligation. In this case, perhaps "would" could be replaced with "is recommended to". Otherwise "should" should be used in paragraph 70 as in paragraph 82.Please see the associated comment on paragraph 82. | *Considered but not incorporated**This diagnostic protocol indicates that an identification only based on morphology is possible, even if the complementary use of biochemical and biomolecular methods is recommended, whereas an identification only based on molecular techniques is not reliable enough.*  |
|  | 70 | Specimens suspected of belonging to the genus *Meloidogyne* may be distinguished based on their morphology. Second-stage juveniles of *M. mali* (and other *Meloidogyne* spp.) are relatively small in length and differ from other plant-parasitic nematodes by having a delicate stylet with distinct basal knobs, the lip region being slightly set off from the body, and the metacorpus and plates being relatively large, distinct and oval-shaped. The tail is typically conoid, with a prominent hyaline region. The body of adult males is vermiform and much longer than the J2 juveniles, with a sclerotized cephalic framework set off from the body, a large and distinct stylet and a pair of spicules near to the terminus.*M. mali* can be identified solely based on morphology; however, a combination of morphological, biochemical and molecular methods would further support diagnosis.  | P | *Category : TECHNICAL***(317) European Union (26 Sep 2024 11:54 AM)**Suggestion to move this paragraph to section 4 (Identification) where it belongs.Please define the term "relatively small" by providing a rangeSlim is not common terminology in Nematology, We suggest to leave it out of the text.The sentence on stylet ... oval-shaped, can refer to many plant parasitic nematodes, which all share these characteristics. It is not a real characteristic difference. | *Considered but not incorporated**This paragraph was developed on purpose to answer a question raised by the TPDP about the detection of the nematodes. The extraction alone is not the detection of nematodes, there is always a step of observation. This is was it deals with.**The range of length is not appropriate here, as it is a detection section based on observation and not measurement.**The sentence on stylet is dedicated for detection and not for identification.**The word slim has been replaced by thin.* |
|  | 70 | *~~M. mali~~* ~~can be identified solely based on morphology; however, a~~It is very difficult to identify *M. mali* solely based on morphological methods; A combination of ~~morphological, biochemical~~ morphological methods and biochemical or molecular biology methods is required for identification to species level.~~would further support diagnosis.~~  | P | *Category : TECHNICAL***(270) Japan (18 Sep 2024 8:14 AM)**It is difficult to accurately identify root-knot nematode species, including M. mali, based on morphological characteristics alone.If there are any literature or information on simple molecular biology methods that do not require sequencing, such information should be added here. | *Considered but not included**This is not the sens of the diagnostic protocol.**See answer to comment n°132.* |
|  | 70 | Specimens suspected of belonging to the genus *Meloidogyne* may be distinguished based on their morphology. Second-stage juveniles of *M. mali* (and other *Meloidogyne* spp.) are relatively small in length and differ from other plant-parasitic nematodes by having a delicate stylet with distinct basal knobs, the lip region being slightly set off from the body, and the metacorpus and plates being relatively large, distinct and oval-shaped. The tail is typically conoid, with a prominent hyaline region. The body of adult males is vermiform and much longer than the J2 juveniles, with a sclerotized cephalic framework set off from the body, a large and distinct stylet and a pair of spicules near to the terminus.*M. mali* can be identified solely based on morphology; however, a combination of morphological, biochemical and molecular methods would further support diagnosis.  | P | *Category : TECHNICAL***(225) EPPO (17 Sep 2024 4:24 PM)**Suggestion to move this paragraph to section 4 (Identification) where it belongs.Please define the term "relatively small" by providing a rangeSlim is not common terminology in Nematology, I suggest to leave it out of the text.The sentence on stylet ... oval-shaped, can refer to many plant parasitic nematodes, which al share these characteristics. It is not a real characteristic difference. | *Considered but not incorporated**This paragraph was developed on purpose to answer a question raised by the TPDP about the detection of the nematodes. The extraction alone is not the detection of nematodes, there is always a step of observation. This is was it deals with.**The range of length is not appropriate here, as it is a detection section based on observation and not measurement.**The sentence on stylet is dedicated for detection and not for identification.**The word slim has been replaced by thin.* |
|  | 70 | *M. mali* can be identified solely based on morphology; however, a combination of morphological, biochemical and molecular methods would further support diagnosis.  | C | *Category : SUBSTANTIVE***(224) EPPO (17 Sep 2024 4:24 PM)**The use of "would" in this paragraph 70 is not consistent with the "should" used in the last sentence of paragraph 82. The wording from the EPPO standard is "As the morphological characters of M. mali are similar tothose of other Meloidogyne species, identification to species level should be based on a combination of morphological/morphometric characters and isozyme electrophoresis or sequencing/DNA barcoding."As the EPPO "should" was modified to "would", it seems that the intention of the draft IPPC DP is a recommendation rather than an obligation. In this case, perhaps "would" could be replaced with "is recommended to". Otherwise "should" should be used in paragraph 70 as in paragraph 82.Please see the associated comment on paragraph 82. | *Considered but not incorporated**This diagnostic protocol indicates that an identification only based on morphology is possible, even if the complementary use of biochemical and biomolecular methods is recommended, whereas an identification only based on molecular techniques is not reliable enough.* |
|  | 70 | *M. mali* can be identified solely based on morphology; however, a combination of morphological, biochemical and molecular methods would further support diagnosis.  | C | *Category : TECHNICAL***(113) New Zealand (11 Sep 2024 12:52 AM)**Suggest adding a reference for morphological description. | *Considered but not included**Details of morphological description are provided in the following paragraphs and especially in §4.2.2.* |
|  | 70 |  Morphological identification should be based on detailed characteristics of the perineal pattern of adult females, including the shape and structure of the cuticle, and the morphology of second-stage juveniles (J2s), with specific attention to the stylet length, tail shape, and hyaline tail terminus.*M. mali* can be identified solely based on morphology; however, a combination of morphological, biochemical and molecular methods would further support diagnosis.  | P | *Category : TECHNICAL***(18) Colombia (15 Aug 2024 6:51 PM)**Clarify morphological identification details to ensure precise identification. | *Considered but not included**Details of morphological description are provided in the following paragraphs and especially in §4.2.2.* |
|  | 71 | **4.~~1~~** **1.** **Preparation of material** | P | *Category : EDITORIAL***(76) United States of America (27 Aug 2024 4:17 PM)**formatting | *Considered but not incorporated**Not in line with IPPC style* |
|  | 72 | As with other species of plant-parasitic nematodes, morphological observation should be carried out on as many adult and juvenile specimens as possible, with a recommended minimum of at least ~~one female and ten~~ five J2 juveniles to confirm diagnosis. There are numerous published methods for fixing and processing nematode specimens for study, summarized in Manzanilla-López and Marbán-Mendoza (2012). Processing of nematodes in anhydrous glycerol is recommended, as important taxonomic features can be obscured if specimens are not cleared sufficiently. | P | *Category : TECHNICAL***(38) China (16 Aug 2024 1:49 AM)**It’s very hard to get enough individuals sometimes, much harder to get the females in many samples. It is recommended to change to “five J2 juveniles”. For only morphological diagnosis, one female and ten J2 without typical characteristics may not give enough information, While two or three J2 with typical characteristics may be enough to confirm diagnosis. | *Considered but not incorporated**The current statement is a recommandation which allows any deviation by the user of the diagnostic protocol.* |
|  | 72 | As with other species of plant-parasitic nematodes, morphological observation should be carried out on as many adult and juvenile specimens as possible, with a recommended minimum of at least ~~one female and ten~~ five J2 juveniles to confirm diagnosis. There are numerous published methods for fixing and processing nematode specimens for study, summarized in Manzanilla-López and Marbán-Mendoza (2012). Processing of nematodes in anhydrous glycerol is recommended, as important taxonomic features can be obscured if specimens are not cleared sufficiently. | P | *Category : TECHNICAL***(362) China (29 Sep 2024 3:02 AM)**It’s very hard to get enough individuals sometimes, much harder to get the females in many samples. It is recommended to change to “five J2 juveniles”. | *Considered but not incorporated**The current statement is a recommandation which allows any deviation by the user of the diagnostic protocol.* |
|  | 72 | As with other species of plant-parasitic nematodes, morphological observation should be carried out on as many adult and juvenile specimens as possible, with a recommended minimum of at least one female and ten J2 juveniles to confirm a diagnosis. There are numerous published methods for fixing and processing nematode specimens for study, summarized in Manzanilla-López and Marbán-Mendoza (2012). Processing of nematodes in anhydrous glycerol is recommended, as important taxonomic features can be obscured if specimens are not cleared sufficiently. | P | *Category : EDITORIAL***(275) Kuwait (24 Sep 2024 7:37 AM)** | *Incorporated* |
|  | 72 | As with other species of plant-parasitic nematodes, morphological observation should be carried out on as many adult and juvenile specimens as possible, with a recommended minimum of at least one female and ten ~~J2 juveniles~~ J2s to confirm diagnosis. There are numerous published methods for fixing and processing nematode specimens for study, summarized in Manzanilla-López ~~and Marbán-Mendoza~~ (2012). Processing of nematodes in anhydrous glycerol is recommended, as important taxonomic features can be obscured if specimens are not cleared sufficiently. | P | *Category : EDITORIAL***(143) Japan (17 Sep 2024 12:34 PM)** | *Modified**The reference should be written according to FAO/IPPC style.* |
|  | 72 | As with other species of plant-parasitic nematodes, morphological observation should be carried out on as many adult and juvenile specimens as possible, with a recommended minimum of at least one female one egg mass and ten J2 juveniles to confirm diagnosis. There are numerous published methods for fixing and processing nematode specimens for study, summarized in Manzanilla-López and Marbán-Mendoza (2012). Processing of nematodes in anhydrous glycerol is recommended, as important taxonomic features can be obscured if specimens are not cleared sufficiently. | P | *Category : SUBSTANTIVE***(89) Mexico (6 Sep 2024 12:23 AM)**It is suggested that an egg mass be included: At least one female, one egg mass and 10 J2 | *Considered but not included**The current statement is a recommandation which allows any deviation by the user of the diagnostic protocol.**Egg masses may be difficult to find depending of samples.* |
|  | 76 | A small drop of water is placed on a glass slide or cavity slide (enough to fill the well in the case of the latter). Nematode specimens are transferred to the water and the slide is placed on a hotplate set at 65 °C. It is vital that the heating is only just sufficient to kill the nematodes, as prolonged heating will result in distortion and deterioration of the specimens. In practice, 5–10 seconds on a hotplate will be sufficient time for most specimens. A small drop of single-strength triethanolamine and formalin (TAF) fixative (7 mL formalin (40% formaldehyde), 2 mL triethanolamine, 91 mL distilled water) or another appropriate fixative is placed in the ~~centre~~ center of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support a coverslip and seal it to the slide) is positioned around the drop. The nematode specimens are transferred from the first glass slide or cavity slide to the TAF fixative. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematodes in the ~~centre~~ center and a complete ring of wax to seal the slide. Should the seal be broken, or the nematodes become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered nematodes remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound. | P | *Category : EDITORIAL***(277) Kuwait (24 Sep 2024 7:39 AM)** | *Considered but not incorporated**In line with IPPC style (british english)* |
|  | 76 | A small drop of water is placed on a glass slide or cavity slide (enough to fill the well in the case of the latter). Nematode specimens are transferred to the water and the slide is placed on a hotplate set at 65 °C. It is vital that the heating is only just sufficient to kill the nematodes, as prolonged heating will result in distortion and deterioration of the specimens. In practice, 5–10 seconds on a hotplate will be sufficient time for most specimens. A small drop of single-strength triethanolamine and formalin (TAF) fixative (7 mL formalin (40% formaldehyde), 2 mL triethanolamine, 91 mL distilled water) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support a coverslip and seal it to the slide) is positioned around the drop. The nematode specimens are transferred from the first glass slide or cavity slide to the TAF fixative. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematodes in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the nematodes become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered nematodes remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound. | P | *Category : EDITORIAL***(276) Kuwait (24 Sep 2024 7:39 AM)** | *Considered but not incorporated**In line with IPPC style (british english)* |
|  | 76 | A small drop of water is placed on a glass slide or cavity slide (enough to fill the well in the case of the latter). Nematode specimens are transferred to the water and the slide placed on a hotplate set at 65 °C. It is vital that the heating is only just sufficient to kill the nematodes, as prolonged heating will result in distortion and deterioration of the specimens. In practice, 5–10 seconds on a hotplate will be sufficient time for most specimens. A small drop of single-strength triethanolamine and formalin (TAF) fixative (7 mL formalin (40% formaldehyde), 2 mL triethanolamine, 91 mL distilled water) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support a coverslip and seal it to the slide) is positioned around the drop. The nematode specimens are transferred from the first glass slide or cavity slide to the TAF fixative. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematodes in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the nematodes become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered nematodes remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound. | C | *Category : TECHNICAL***(114) New Zealand (11 Sep 2024 12:55 AM)**0.9 NaCl could also be used? | *Considered but not included**Option for using NaCl is already mentionned in the paragraph 3.2.* |
|  | 76 | A small drop of water is placed on a glass slide or cavity slide (enough to fill the well in the case of the latter). Nematode specimens are transferred to the water and the slide placed on a hotplate set at 65 °C. It is vital that the heating is only just sufficient to kill the nematodes, as prolonged heating will result in distortion and deterioration of the specimens. In practice, 5–10 seconds on a hotplate will be sufficient time for most specimens. A small drop of single-strength triethanolamine and formalin (TAF) fixative (7 mL formalin (40% formaldehyde), 2 mL triethanolamine, 91 mL distilled water) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support a coverslip and seal it to the slide) is positioned around the drop. The nematode specimens are transferred from the first glass slide or cavity slide to the TAF fixative. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematodes in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the nematodes become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered nematodes remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound. | C | *Category : SUBSTANTIVE***(90) Mexico (6 Sep 2024 12:25 AM)**An alternative mounting method consists of: placing filiform specimens (J2 or males) in TAF, heating the fixative with nematodes for 5-10 seconds, re-fishing and placing the specimens on a small portion of 1.5% water-agar and placing a coverslip. If air bubbles form, place the preparation in a humid chamber for 30-60 minutes. The 1.5% water-agar medium offers support and the advantage that the specimens can be placed in a “C” shape and maintain this arrangement when the coverslip is placed, which facilitates a complete morphometric analysis. | *Considered but not included**The drafting team has no experience with this method and no reference provided.* |
|  | 76 | A small drop of water is placed on a glass slide or cavity slide (enough to fill the well in the case of the latter). Nematode specimens are transferred to the water and the slide placed on a hotplate set at 65 °C. It is vital that the heating is only just sufficient to kill the nematodes, as prolonged heating will result in distortion and deterioration of the specimens. In practice, 5–10 seconds on a hotplate will be sufficient time for most specimens. A small drop of single-strength triethanolamine and formalin (TAF) fixative (7 mL formalin (40% formaldehyde), 2 mL triethanolamine, 91 mL distilled water) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support a coverslip and seal it to the slide) is positioned around the drop. The nematode specimens are transferred from the first glass slide or cavity slide to the TAF fixative. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematodes in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the nematodes become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered nematodes remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing ~~compound~~compound such as Glyceel.. | P | *Category : TECHNICAL***(78) United States of America (27 Aug 2024 4:20 PM)**clarifiation | *Considered but not incorporated**Glyceel is hardly availabe in some regions. The statement was general to allow the use of appropriate sealing compound available in the different regions.* |
|  | 76 | A small drop of water is placed on a glass slide or cavity slide (enough to fill the well in the case of the latter). Nematode specimens are transferred to the water and the slide placed on a hotplate set at 65 °C. It is vital that the heating is only just sufficient to kill the nematodes, as prolonged heating will result in distortion and deterioration of the specimens. In practice, 5–10 seconds on a hotplate will be sufficient time for most specimens. A small drop of single-strength triethanolamine and formalin (TAF) fixative (7 mL formalin (40% formaldehyde), 2 mL triethanolamine, 91 mL distilled water) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support a coverslip and seal it to the slide) is positioned around the drop. The nematode specimens are transferred from the first glass slide or cavity slide to the TAF fixative. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematodes in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the nematodes become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered nematodes remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound. Specimens should be preserved appropriately at a temperature of -20°C or lower. | P | *Category : TECHNICAL***(19) Colombia (15 Aug 2024 6:52 PM)**It is suggested to specify the recommended temperature for specimen preservation. | *Considered but not included**The temperature of “-20]C” is not appropriate for morphological purpose.**Guidance and reference are provided in paragraph 73 (EPPO, 2021).* |
|  | 77 | ~~Alternatively, nematodes may be immobilized by exposing a suspension of specimens to a low temperature (2–8 °C) until the suspension has also reached that temperature. A temporary water-mounted slide can then be prepared for identification.~~ | P | *Category : TECHNICAL***(363) China (29 Sep 2024 3:05 AM)**This procedure is not necessary. | *Considered but not included**This text provides alternative when the previous procedure can not be used.* |
|  | 77 | Alternatively, nematodes may be immobilized by exposing a suspension of specimens to a low temperature (2–8 °C) ~~until the suspension has also reached that temperature~~. A temporary water-mounted slide can then be prepared for identification. | P | *Category : EDITORIAL***(115) New Zealand (11 Sep 2024 12:56 AM)**to make the sentence more concise and improve readibility | *Incorporated* |
|  | 77 | Alternatively, nematodes may be immobilized by exposing a suspension of specimens to a low temperature (2–8 °C) until the suspension has also reached that temperature. A temporary water-mounted slide can then be prepared for identification.The nematodes can also be temporarily mounted in 3% formaldehyde solution on a slide. | P | *Category : TECHNICAL***(80) United States of America (27 Aug 2024 4:23 PM)**additional method | *Incorporated* |
|  | 77 | Alternatively, nematodes may be immobilized by exposing a suspension of specimens to a low temperature (2–8 °C) until the suspension has also reached that temperature. A temporary water-mounted slide can then be prepared for identification. | C | *Category : TECHNICAL***(79) United States of America (27 Aug 2024 4:22 PM)**The nematodes can also be temporarily mounted in 3% formaldehyde solution on a slide. | *Incorporated* |
|  | 77 | ~~Alternatively, nematodes may be immobilized by exposing a suspension of specimens to a low temperature (2–8 °C) until the suspension has also reached that temperature. A temporary water-mounted slide can then be prepared for identification.~~ | P | *Category : TECHNICAL***(39) China (16 Aug 2024 1:52 AM)**This procedure is not necessary. | *Considered but not incorporated**This text provides alternative when the previous procedure can not be used.* |
|  | 77 | Alternatively, nematodes may be immobilized by exposing a suspension of specimens to a low temperature (2–8 °C) until the suspension has also reached that temperature. A temporary water-mounted slide can then be prepared for identification. As isolated nematodes will deteriorate in water it is recommended to preserve them in an appropriate medium such as ethanol or glycerol. | P | *Category : TECHNICAL***(20) Colombia (15 Aug 2024 6:53 PM)**It is suggested to specify the type of preservation medium recommended for specimens. | *Incorporated* |
|  | 79 | The following method is adapted and summarized from Jepson (1987). Dissection is performed using water to allow ~~to~~ the use of dissected portions for molecular diagnosis, if required (i.e. if only a single female specimen has been recovered). The dissection and mounting of a nematode female’s perineal pattern ~~is~~ are easier when specimens have been previously fixed, stained, and dissected in a drop of glycerol or transferred to a 0.9% NaCl solution ~~in order~~ to avoid possible osmotic disruption in tap water. | P | *Category : EDITORIAL***(278) Kuwait (24 Sep 2024 7:41 AM)** | *Incorporated* |
|  | 79 | The following method is adapted and summarized from Jepson (1987). Dissection is performed using water to allow to use dissected portions of nematode for molecular diagnosis, if required (i.e. if only a single female specimen has been recovered). The dissection and mounting of a nematode female’s perineal pattern is easier when specimens have been previously fixed, stained, dissected in a drop of glycerol or transferred to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. | P | *Category : EDITORIAL***(116) New Zealand (11 Sep 2024 12:58 AM)**to be more precise | *Incorporated* |
|  | 79 | The following method is adapted and summarized from Jepson (1987). Dissection is performed using water to allow to use dissected portions for molecular diagnosis, if required (i.e. if only a single female specimen has been recovered). The dissection and mounting of a nematode female’s perineal pattern is easier when specimens have been previously fixed, stained, dissected in a drop of glycerol or transferred to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. | C | *Category : SUBSTANTIVE***(91) Mexico (6 Sep 2024 12:26 AM)**It is suggested that the neck be mounted together with the perineal pattern and consider an egg mass for molecular analysis. | *Considered but not incorporated**This is a recommandation for material required for molecular anaylis. This is not appropriate under this section.* |
|  | 79 | The following method is adapted and summarized from Jepson (1987). Dissection is performed ~~using~~ in water to allow to use dissected portions for molecular diagnosis, if required (i.e. if only a single female specimen has been recovered). The dissection and mounting of a nematode female’s perineal pattern is easier when specimens have been previously fixed, stained, dissected in a drop of glycerol or transferred to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. | P | *Category : TECHNICAL***(61) South Africa (20 Aug 2024 11:48 AM)**Proposal to delete the word :"using" and replace it with :"in" | *Incorporated* |
|  | 79 | The following method is adapted and summarized from Jepson (1987). Dissection is performed using water to allow to use of dissected portions for molecular diagnosis, if required (i.e. if only a single female specimen has been recovered). The dissection and mounting of a nematode female’s perineal pattern is easier when specimens have been previously fixed, stained, dissected in a drop of glycerol or transferred to a 0.9% NaCl solution in order to avoid possible osmotic disruption in tap water. | P | *Category : EDITORIAL***(5) Lesotho (8 Aug 2024 12:25 PM)**It was just an editorial comment | *Considered but not incorporated**See change in the text according to comment n°156.* |
|  | 80 | A drop of lactic acid solution (40%) is placed on a glass slide or cavity slide, enough to fill the well. A female nematode specimen is transferred to the water. The dorsal perineal pattern is located and the tip of a sterile hypodermic needle is used to puncture the mid-body of the female to release turgor pressure. The nematode female is cut in half transversely at the mid-body, ensuring that the perineal pattern is undamaged (the anterior region can be placed into a suitable microtube for molecular analysis if desired or mounted along with the posterior for morphological assessment). The body contents adhered to the perineal pattern are removed, and the edges of the perineal pattern are trimmed until the tissue lays flat on the slide. A small drop of single-strength TAF fixative (composition as above) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support the coverslip and seal it to the slide) is positioned around the drop. The perineal pattern (and anterior region if desired) is transferred from the glass slide or cavity slide to the TAF fixative and positioned so that it is dorsal side up under the surface of the fixative drop. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematode tissue in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the specimens become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered tissue remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound. ~~A small drop of water is placed on a glass slide or cavity slide, enough to fill the well. A female nematode specimen is transferred to the water. The dorsal perineal pattern is located and the tip of a sterile hypodermic needle is used to puncture the mid-body of the female to release turgor pressure. The nematode female is cut in half transversely at the mid-body, ensuring that the perineal pattern is undamaged (the anterior region can be placed into a suitable microtube for molecular analysis if desired or mounted along with the posterior for morphological assessment). The body contents adhered to the perineal pattern are removed, and the edges of the perineal pattern are trimmed until the tissue lays flat on the slide. A small drop of single-strength TAF fixative (composition as above) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support the coverslip and seal it to the slide) is positioned around the drop. The perineal pattern (and anterior region if desired) is transferred from the glass slide or cavity slide to the TAF fixative and positioned so that it is dorsal side up under the surface of the fixative drop. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematode tissue in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the specimens become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered tissue remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound.~~  | P | *Category : TECHNICAL***(364) China (29 Sep 2024 3:08 AM)**In practice, the body contents can be easily removed in a lactic acid solution, and all parts of the female can be effectively preserved in the anhydrous glycerol. | *Incorporated* |
|  | 80 | A small drop of water is placed on a glass slide or cavity slide, enough to fill the well. A female nematode specimen is transferred to the water. The dorsal perineal pattern is ~~located~~ located, and the tip of a sterile hypodermic needle is used to puncture the mid-body of the female to release turgor pressure. The nematode female is cut in half transversely at the mid-body, ensuring that the perineal pattern is undamaged (the anterior region can be placed into a suitable microtube for a molecular analysis if desired or mounted along with the posterior for morphological assessment). The body contents adhered to the perineal pattern are removed, and the edges of the perineal pattern are trimmed until the tissue lays flat on the slide. A small drop of single-strength TAF fixative (composition as above) or another appropriate fixative is placed in the ~~centre~~ center of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support the coverslip and seal it to the slide) is positioned around the drop. The perineal pattern (and anterior region if desired) is transferred from the glass slide or cavity slide to the TAF fixative and positioned so that ~~it is~~ its dorsal side is up and under the surface of the fixative drop. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematode tissue in the ~~centre~~ center and a complete ring of wax to seal the slide. Should the seal be broken, or the specimens become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered tissue remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound.  | P | *Category : EDITORIAL***(279) Kuwait (24 Sep 2024 7:43 AM)** | *Modified**Some changes suggested were not in line with IPPC style.* |
|  | 80 | A small drop of water is placed on a glass slide or cavity slide, enough to fill the well. A female nematode specimen is transferred to the water. The dorsal perineal pattern is located and the tip of a sterile hypodermic needle is used to puncture the mid-body of the female to release turgor pressure. The nematode female is cut in half transversely at the mid-body, ensuring that the perineal pattern is undamaged (the anterior region can be placed into a suitable microtube for molecular analysis if desired or mounted along with the posterior for morphological assessment). The body contents adhered to the perineal pattern are removed, and the edges of the perineal pattern are trimmed until the tissue lays flat on the slide. A small drop of single-strength TAF fixative (composition as above) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support the coverslip and seal it to the slide) is positioned around the drop. The perineal pattern (and anterior region if desired) is transferred from the glass slide or cavity slide to the TAF fixative and positioned so that it is dorsal side up under the surface of the fixative drop. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematode tissue in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the specimens become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered tissue remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound.  | C | *Category : SUBSTANTIVE***(94) Mexico (6 Sep 2024 12:32 AM)**The use of dehydrated glycerin is suggested as a permanent mounting medium for perineal patterns. | *Incorporated* |
|  | 80 | A small drop of water is placed on a glass slide or cavity slide, enough to fill the well. A female nematode specimen is transferred to the water. The dorsal perineal pattern is located and the tip of a sterile hypodermic needle is used to puncture the mid-body of the female to release turgor pressure. The nematode female is cut in half transversely at the mid-body, ensuring that the perineal pattern is undamaged (the anterior region can be placed into a suitable microtube for molecular analysis if desired or mounted along with the posterior for morphological assessment). The body contents adhered to the perineal pattern are removed, and the edges of the perineal pattern are trimmed until the tissue lays flat on the slide. A small drop of single-strength TAF fixative (composition as above) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support the coverslip and seal it to the slide) is positioned around the drop. The perineal pattern (and anterior region if desired) is transferred from the glass slide or cavity slide to the TAF fixative and positioned so that it is dorsal side up under the surface of the fixative drop. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematode tissue in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the specimens become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered tissue remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound.  | C | *Category : SUBSTANTIVE***(93) Mexico (6 Sep 2024 12:31 AM)**The use of lactic acid 45% is suggested to clean the perineal pattern. | *Considered but not incorporated**See answer to comment n° 161* |
|  | 80 | A small drop of water is placed on a glass slide or cavity slide, enough to fill the well. A female nematode specimen is transferred to the water. The ~~dorsal~~ perineal pattern is located and the tip of a sterile hypodermic needle is used to puncture the mid-body of the female to release turgor pressure. The nematode female is cut in half transversely at the mid-body, ensuring that the perineal pattern is undamaged (the anterior region can be placed into a suitable microtube for molecular analysis if desired or mounted along with the posterior for morphological assessment). The body contents adhered to the perineal pattern are removed, and the edges of the perineal pattern are trimmed until the tissue lays flat on the slide. A small drop of single-strength TAF fixative (composition as above) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support the coverslip and seal it to the slide) is positioned around the drop. The perineal pattern (and anterior region if desired) is transferred from the glass slide or cavity slide to the TAF fixative and positioned so that it is dorsal side up under the surface of the fixative drop. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematode tissue in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the specimens become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered tissue remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound.  | P | *Category : SUBSTANTIVE***(92) Mexico (6 Sep 2024 12:28 AM)**Better wording | *Considered but not incorporated**Orientation of perineal pattern is important and referred to later in the paragraph.* |
|  | 80 | A small drop of water is placed on a glass slide or cavity slide, enough to fill the well. A female nematode specimen is transferred to the water. The dorsal perineal pattern is located and the tip of a sterile hypodermic needle is used to puncture the mid-body of the female to release turgor pressure. The nematode female is cut in half transversely at the mid-body, ensuring that the perineal pattern is undamaged (the anterior region can be placed into a suitable microtube for molecular analysis if desired or mounted along with the posterior for morphological assessment). The body contents adhered to the perineal pattern are removed, and the edges of the perineal pattern are trimmed until the tissue lays flat on the slide. A small drop of single-strength TAF fixative (composition as above) or another appropriate fixative such as lactophenol is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support the coverslip and seal it to the slide) is positioned around the drop. The perineal pattern (and anterior region if desired) is transferred from the glass slide or cavity slide to the TAF fixative and positioned so that it is dorsal side up under the surface of the fixative drop. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematode tissue in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the specimens become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered tissue remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound.  | P | *Category : EDITORIAL***(81) United States of America (27 Aug 2024 4:25 PM)** | *Incorporated* |
|  | 80 | A drop of lactic acid solution (40%) is placed on a glass slide or cavity slide, enough to fill the well. A female nematode specimen is transferred to the water. The dorsal perineal pattern is located and the tip of a sterile hypodermic needle is used to puncture the mid-body of the female to release turgor pressure. The nematode female is cut in half transversely at the mid-body, ensuring that the perineal pattern is undamaged (the anterior region can be placed into a suitable microtube for molecular analysis if desired or mounted along with the posterior for morphological assessment). The body contents adhered to the perineal pattern are removed, and the edges of the perineal pattern are trimmed until the tissue lays flat on the slide. A small drop of single-strength TAF fixative (composition as above) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support the coverslip and seal it to the slide) is positioned around the drop. The perineal pattern (and anterior region if desired) is transferred from the glass slide or cavity slide to the TAF fixative and positioned so that it is dorsal side up under the surface of the fixative drop. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematode tissue in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the specimens become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered tissue remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound. ~~A small drop of water is placed on a glass slide or cavity slide, enough to fill the well. A female nematode specimen is transferred to the water. The dorsal perineal pattern is located and the tip of a sterile hypodermic needle is used to puncture the mid-body of the female to release turgor pressure. The nematode female is cut in half transversely at the mid-body, ensuring that the perineal pattern is undamaged (the anterior region can be placed into a suitable microtube for molecular analysis if desired or mounted along with the posterior for morphological assessment). The body contents adhered to the perineal pattern are removed, and the edges of the perineal pattern are trimmed until the tissue lays flat on the slide. A small drop of single-strength TAF fixative (composition as above) or another appropriate fixative is placed in the centre of a dust-free glass slide, and an appropriate amount of paraffin wax shavings or a paraffin wax ring (sufficient to help support the coverslip and seal it to the slide) is positioned around the drop. The perineal pattern (and anterior region if desired) is transferred from the glass slide or cavity slide to the TAF fixative and positioned so that it is dorsal side up under the surface of the fixative drop. A clean coverslip is placed upon the wax and the slide is heated until the wax has just melted; gently tapping the slide may remove air that may be lodged under the coverslip. There should be a clear area of TAF fixative containing the nematode tissue in the centre and a complete ring of wax to seal the slide. Should the seal be broken, or the specimens become embedded in the wax, the slide can be reheated, the coverslip removed, and the recovered tissue remounted on a new slide. The coverslip is sealed with a ring of clear nail varnish or another sealing compound.~~  | P | *Category : TECHNICAL***(40) China (16 Aug 2024 1:55 AM)**In practice, the body contents can be easily removed in a lactic acid solution, and all parts of the female can be effectively preserved in the anhydrous glycerol. | *Considered but not incorporated**See answer to comment n°161* |
|  | 81 | 4.2 Identification using morphological characteristics | C | *Category : SUBSTANTIVE***(378) Australia (30 Sep 2024 1:00 PM)**A primary purpose of a diagnostic protocol is to provide sufficient information to accurately identify the target organism. Subbotin et al. (2021, page 63) noted that biochemical and molecular diagnostic “techniques provide more rapid, reliable and cheaper identification of RKN than morphological approaches”. However, in the case of M. mali, it can be identified based solely on morphology, with diagnostic confirmation from biochemical and molecular methods. Therefore, the draft protocol (DRAFT ANNEX TO ISPM 27: Meloidogyne mali) would do well to provide further detail for the morphological identification process, easing the diagnosticians task and minimizing the risk of incorrect identification.The draft protocol directs diagnosticians to two reference books for morphological identification: Jepson (1987) and Subbotin et al. (2021). Both books utilise polytomous keys, which can be challenging to employ due to their use of overlapping morphometric criteria, potentially leading to ambiguous results. To enhance the accuracy and usability of the identification process, there is an option to develop an abbreviated dichotomous key that simplifies the identification of M. mali. This key should guide users through a series of couplets that lead to a final decision point where M. mali is unequivocally identified.For example, the key could include couplets that contain one lead that directs users to a subsequent step (i.e., couplet) and a second lead that indicates 'not Meloidogyne mali' for non-relevant nematodes. Early couplets should effectively exclude all nematodes that do not belong to the family Meloidogynidae or genus Meloidogyne. For instance, early couplets could be something like the following, albeit more refined:1a. Stylet present… 2. 1b. Stylet absent… not M. mali.2a. Mouth with tylenchid stylet (i.e., with knobbed base), pharynx with metacorpus (valvate median oesophageal bulb)… 3.2b. Mouth with dorylaimid stylet (i.e., without knobbed base, may be flanged), pharynx cylindrical or bottle-shaped, without metacorpus… not M. mali. 3a. Oesophagus distinct… 4.3b. Oesophagus degenerate… not M. mali.4a. Cuticle not heavily annulated… 5.4b. Cuticle heavily annulated… not M. mali.5a. Head with internal cephalic sclerotisation… 6.5b. Head without internal cephalic sclerotisation… not M. mali. 6a. Female body swollen… 7.6b. Female body not swollen… not M. mali.7a. Female pear-shaped… 8.7b. Females more elongate… not M. mali.8a. Vulva terminal… 9.8b. Vulva mid-body… not M. mali.9a. Mature female body white, not forming a cyst, not containing eggs… (Meloidogyne) 10.9b. Mature female body forming a brown, chitinous cyst packed with eggs… not M. mali. 10a. etc., etc. (through to M. mali at final couplet)Such a dichotomous key could be developed with help from books containing relevant keys, such as Siddiqi (2000), Mai and Mullin (1996), etc. to get to the genus Meloidogyne. To exclude all other species within Meloidogyne, it would be helpful to use the morphological and morphometric characteristics outlined in Jepson (1987) and Subbotin et al. (2021), with additional input from Hewlett and Tarjan (1983), Ghaderi and Karssen (2020), etc. | *Considered but not incorporated**The polytomous key included in this protocol is appropriate for Meloidogyne mali and confusing species. In addition this protocol was developed based on EPPO diagnostic protocol which includes this polytomous key.* |
|  | 82 | Differential interference contrast is recommended for observing and identifying specimens mounted (in fixative) on microscope slides. A complete key has been published on the genus *Meloidogyne* by Jepson (1987) and updated by Subbotin, Palomares-Rius and Castillo (2021). This protocol presents the main morphological and morphometric characteristics to assist with discrimination between similar species, but, as noted above, identification to species level ~~should~~ could be confirmed by molecular or biochemical methods (EPPO, 2018). | P | *Category : TECHNICAL***(320) European Union (26 Sep 2024 12:02 PM)**In paragraph 4 it is stated that "M. mali can be identified solely based on morphology; however, a combination of morphological, biochemical and molecular methods would further support diagnosis" | *Incorporated* |
|  | 82 | Differential interference contrast is recommended for observing and identifying specimens mounted (in fixative) on microscope slides. A complete key has been published on the genus *Meloidogyne* by Jepson (1987) and updated by Subbotin, Palomares-Rius and Castillo (2021). This protocol presents the main morphological and morphometric characteristics to assist with the discrimination between similar species, but, as noted above, the identification to species level should be confirmed by molecular or biochemical methods (EPPO, 2018). | P | *Category : EDITORIAL***(280) Kuwait (24 Sep 2024 7:44 AM)** | *Incorporated* |
|  | 82 | Differential interference contrast is recommended for observing and identifying specimens mounted (in fixative) on microscope slides. A complete key has been published on the genus *Meloidogyne* by Jepson (1987) and updated by ~~Subbotin,~~ Subbotin *et al*.~~Palomares-Rius and Castillo~~ (2021). This protocol presents the main morphological and morphometric characteristics to assist with discrimination between similar species, but, as noted above, identification to species level should be confirmed by molecular or biochemical methods (EPPO, 2018). | P | *Category : EDITORIAL***(144) Japan (17 Sep 2024 12:35 PM)** | *Considered but not incorporated**The change suggested is not in line with the IPPC style.* |
|  | 82 | Differential interference contrast is recommended for observing and identifying specimens mounted (in fixative) on microscope slides. A complete key has been published on the genus *Meloidogyne* by Jepson (1987) and updated by Subbotin, Palomares-Rius and Castillo (2021). This protocol presents the main morphological and morphometric characteristics to assist with discrimination between similar species, but, as noted above, identification to species level ~~should~~ could be confirmed by molecular or biochemical methods (EPPO, 2018). | P | *Category : TECHNICAL***(226) EPPO (17 Sep 2024 4:24 PM)**In paragraph 4 it is stated that "M. mali can be identified solely based on morphology; however, a combination of morphological, biochemical and molecular methods would further support diagnosis" | *Incorporated* |
|  | 82 | Differential interference contrast is recommended for observing and identifying specimens mounted (in fixative) on microscope slides. A complete key has been published on the genus *Meloidogyne* by Jepson (1987) and updated by Subbotin, Palomares-Rius and Castillo (2021). This protocol presents the main morphological and morphometric characteristics to assist with discrimination between similar species, but, as noted above, identification to species level ~~should~~ may be confirmed by molecular or biochemical methods (EPPO, 2018). | P | *Category : TECHNICAL***(118) New Zealand (11 Sep 2024 1:01 AM)**this contradicts the statement in para 70. Minimum requirements are for morphological ID | *Considered but not incorporated**See answer to comment n°172.* |
|  | 82 | Differential interference contrast microscope is recommended for observing and identifying specimens mounted (in fixative) on microscope slides. A complete key has been published on the genus *Meloidogyne* by Jepson (1987) and updated by Subbotin, Palomares-Rius and Castillo (2021). This protocol presents the main morphological and morphometric characteristics to assist with discrimination between similar species, but, as noted above, identification to species level should be confirmed by molecular or biochemical methods (EPPO, 2018). | P | *Category : EDITORIAL***(117) New Zealand (11 Sep 2024 12:59 AM)**Editorial: to be more specific | *Incorporated* |
|  | 82 |  At least one adult female and ten second-stage juveniles (J2s) should be observed to confirm the diagnosis. If fewer specimens are collected, proceed with the available specimens and note the limitation in the diagnostic report.Differential interference contrast is recommended for observing and identifying specimens mounted (in fixative) on microscope slides. A complete key has been published on the genus *Meloidogyne* by Jepson (1987) and updated by Subbotin, Palomares-Rius and Castillo (2021). This protocol presents the main morphological and morphometric characteristics to assist with discrimination between similar species, but, as noted above, identification to species level should be confirmed by molecular or biochemical methods (EPPO, 2018). | P | *Category : TECHNICAL***(21) Colombia (15 Aug 2024 6:56 PM)**Provide instructions on what to do if fewer than the recommended specimens are collected. | *Considered but not incorporated**The recommended number of indviduals is just an advice to get the chance to observe the expected features and their diversity.* |
|  | 84 | Sedentary females are annulated, pearly white and globular to pear-shaped, 400–1300 µm long and 300–700 µm wide. The stylet is dorsally curved, 10–25 µm long, with rounded to ovoid stylet knobs set off to sloping posteriorly. The excretory pore located usually between the stylet knobs and the metacorpial level. The males are vermiform, annulated, slightly tapering anteriorly, bluntly rounded posteriorly, 700–2000 µm long and 25–45 µm wide. The stylet is 13–30 µm long, with stylet knobs that are variable in shape. The tail is very short, bluntly rounded and without bursa. The J2 juveniles are vermiform, annulated, tapering at both ends, 250–700 µm long and 12–18 µm wide, with the tail length 15–100 µm and the hyaline tail part 5–30 µm in length, irregular in outling. Both males and J2 juveniles have lateral fields with four incisures (EPPO, 2018). | P | *Category : TECHNICAL***(365) China (29 Sep 2024 3:12 AM)**These morphological characteristics are the diagnostic features of the genus Meloidogyne. | *Considered but not incorporated**These elements are included in the following paragraphs.* |
|  | 84 | Sedentary females are annulated, pearly white and globular to pear-shaped, 400–1300 µm long and 300–700 µm wide. The stylet is dorsally curved, 10–25 µm long, with rounded to ovoid stylet knobs set off to sloping posteriorly. The males are vermiform, annulated, slightly tapering anteriorly, bluntly rounded posteriorly, 700–2000 µm long and 25–45 µm wide. The stylet is 13–30 µm long, with stylet knobs that are variable in shape. The ~~J2 juveniles~~ J2s are vermiform, annulated, tapering at both ends, 250–700 µm long and 12–18 µm wide, with the tail length 15–100 µm and the hyaline tail part 5–30 µm in length. Both males and ~~J2 juveniles~~ J2s have lateral fields with four incisures (EPPO, 2018). | P | *Category : EDITORIAL***(145) Japan (17 Sep 2024 12:36 PM)** | *Incorporated* |
|  | 84 | Sedentary females of Meloidogyne species are annulated, pearly white and globular to pear-shaped, 400–1300 µm long and 300–700 µm wide. The stylet is dorsally curved, 10–25 µm long, with rounded to ovoid stylet knobs set off to sloping posteriorly. The males are vermiform, annulated, slightly tapering anteriorly, bluntly rounded posteriorly, 700–2000 µm long and 25–45 µm wide. The stylet is 13–30 µm long, with stylet knobs that are variable in shape. The J2 juveniles are vermiform, annulated, tapering at both ends, 250–700 µm long and 12–18 µm wide, with the tail length 15–100 µm and the hyaline tail part 5–30 µm in length. Both males and J2 juveniles have lateral fields with four incisures (EPPO, 2018). | P | *Category : EDITORIAL***(119) New Zealand (11 Sep 2024 1:01 AM)** | *Incorporated* |
|  | 84 | Sedentary females are annulated, pearly white and globular to pear-shaped, 400–1300 µm long and 300–700 µm wide. The stylet is dorsally curved, 10–25 µm long, with rounded to ovoid stylet knobs set off to sloping posteriorly. The excretory pore located usually between the stylet knobs and the metacorpial level. The males are vermiform, annulated, slightly tapering anteriorly, bluntly rounded posteriorly, 700–2000 µm long and 25–45 µm wide. The stylet is 13–30 µm long, with stylet knobs that are variable in shape. The tail is very short, bluntly rounded and without bursa. The J2 juveniles are vermiform, annulated, tapering at both ends, 250–700 µm long and 12–18 µm wide, with the tail length 15–100 µm and the hyaline tail part 5–30 µm in length, irregular in outling. Both males and J2 juveniles have lateral fields with four incisures (EPPO, 2018). | P | *Category : TECHNICAL***(48) China (16 Aug 2024 10:16 AM)**These morphological characteristics are the diagnostic features of the genus Meloidogyne. | *Considered but not incorporated**These elements are included in the following paragraphs.* |
|  | 86 | The following descriptions have been amended from Itoh, Ohshima and Ichinohe (1969), Palmisano and Ambrogioni (2000), Gu, Fang and Liu (2020) and Ahmed *et al*. (2013) (cited in EPPO, 2018). | C | *Category : EDITORIAL***(321) European Union (26 Sep 2024 12:07 PM)**Citations to be ordered chronologically? | *Incorporated**The citations were reordered chronologically.* |
|  | 86 | The following descriptions have been amended from ~~Itoh, Ohshima and Ichinohe~~ Itoh *et al*. (1969), Palmisano and Ambrogioni (2000), ~~Gu,~~ Gu *et al*.~~Fang and Liu~~ (2020) and Ahmed *et al*. (2013) (cited in EPPO, 2018). | P | *Category : EDITORIAL***(146) Japan (17 Sep 2024 12:37 PM)** | *Considered but not incorporated**The suggested change is not in line with IPPC format.* |
|  | 86 | The following descriptions have been amended from Itoh, Ohshima and Ichinohe (1969), Palmisano and Ambrogioni (2000)~~, Gu,~~ ,~~Fang and Liu~~ Ahmed  ~~(2020) and Ahmed~~ *et al*. (2013) and Gu, Fang and Liu (2020) (cited in EPPO, 2018). | P | *Category : EDITORIAL***(227) EPPO (17 Sep 2024 4:24 PM)**To be put in the chronological order? | *Incorporated* |
|  | 88 | Characteristics of the stylet and the perineal pattern are particularly useful for identification. The stylet, composed of a dorsally curved cone, straight shaft and stylet knobs, ranges in length between 11 and 17 µm and has rounded to pear-shaped knobs, usually slightly posteriorly sloping. The perineal pattern has an oval shape, with a low, rounded to square-shaped dorsal arch; phasmids are distinct, and the lateral field is indistinct or marked by breaks or folds in the striae (Figure 3, Figure 4 and Figure 5) (EPPO, 2018). | C | *Category : EDITORIAL***(322) European Union (26 Sep 2024 12:08 PM)**"13-17" according to paragraph 106 in Table 1. | *Modified**The text and the table are not strictly based on the same data.* *The table 1 is modified to include the largest range with appropriate references added as sources.* |
|  | 88 | Characteristics of the stylet and the perineal pattern are particularly useful for identification. The stylet, composed of a dorsally curved cone, straight shaft and stylet knobs, ranges in length between 11 and 17 µm and has rounded to pear-shaped knobs, usually slightly posteriorly sloping. The perineal pattern has an oval shape, with a low, rounded to square-shaped dorsal arch; phasmids are distinct, and the lateral field is indistinct or marked by breaks or folds in the striae (Figure 3, Figure 4 and Figure 5) (EPPO, 2018). | C | *Category : TECHNICAL***(228) EPPO (17 Sep 2024 4:24 PM)**"13-17" according to paragraph 106 in Table 1. | *Modified**The text and the table are not strictly based on the same data.* *The table 1 is modified to include the largest range.* |
|  | 88 | Characteristics of the stylet and the perineal pattern are particularly useful for identification. The stylet, composed of a dorsally curved cone, straight shaft and stylet knobs, ranges in length between 11 and 17 µm and has rounded to pear-shaped knobs, usually slightly posteriorly sloping. The perineal pattern has an oval shape, with a low, rounded to square-shaped dorsal arch; phasmids are distinct, and the lateral field is indistinct or marked by breaks or folds in the striae (Figure 3, Figure 4 and Figure 5) (EPPO, 2018). | C | *Category : TECHNICAL***(6) COSAVE (15 Aug 2024 12:36 AM)**The stylet in Figure 3 (K) does not seem to match this description. Here it is mentioned that “The stylet, composed of a dorsally curved cone, straight shaft and stylet knobs, ranges in length between 11 and 17 µm and has rounded to pear-shaped knobs, usually slightly posteriorly sloping”. However, the stylet in Figure 3 (K) is somewhat strange as it seems to has anchor-shaped knobs, not rounded and they do not angle downwards, their tips point upwards. Thus, the stylet does not appear to correspond to the species. Therefore, we suggest to verify the correspondence between the text and the figure. It is noted that in the paper “A Root-Knot Nematode, Meloidogyne mali n. sp. On Apple-Tree from Japan” , the female stylet is described as "stylet curved dorsally, with well-developed knobs that tend to slope either backwards or forwards" | *Modified**Text to be modified to ‘The stylet, composed of a dorsally curved cone, straight shaft and stylet knobs, ranges in length between 11 and 17 µm and has rounded to pear-shaped knobs, usually slightly posteriorly sloping, rarely with concave knobs (Ahmed et al., 2013).*  |
|  | 90 | The head shape and the stylet morphology are the most useful characters for identification. The straight stylet has rounded, posteriorly sloping knobs. The head is weakly offset and the head cap is low and slightly narrower than the postlabial region. No postlabial ~~incisures~~ annulus are present. The distance from the stylet knobs to the dorsal gland orifice is relatively long: 6–13 µm (Figure 5 and Figure 6) (EPPO, 2018). | P | *Category : SUBSTANTIVE***(366) China (29 Sep 2024 3:29 AM)**Common description. | *Incorporated* |
|  | 90 | The head shape and the stylet morphology are the most useful characters for identification. The straight stylet has rounded, posteriorly sloping knobs. The head is weakly offset and the head cap is low and slightly narrower than the postlabial region. No ~~postlabial~~ post-labial incisures are present. The distance from the stylet knobs to the dorsal gland orifice is relatively long: 6–13 µm (Figure 5 and Figure 6) (EPPO, 2018). | P | *Category : EDITORIAL***(229) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 90 | The head shape and the stylet morphology are the most useful characters for identification. The straight stylet has rounded, posteriorly sloping knobs. The head is weakly offset and the head cap is low and slightly narrower than the postlabial region. No postlabial ~~incisures~~ annulus are present. The distance from the stylet knobs to the dorsal gland orifice is relatively long: 6–13 µm (Figure 5 and Figure 6) (EPPO, 2018). | P | *Category : SUBSTANTIVE***(42) China (16 Aug 2024 2:03 AM)**Common description | *Incorporated* |
|  | 92 | Body length is reported to typically range from 390 to 450 µm (but with certain populations reported to have a range of 362–507 μm (Gu, Fang and Liu, 2020)). This species has a short tail (23–39 µm) and short hyaline tail part (4–12 µm). The stylet knobs are small and rounded and slope slightly posteriorly. The hemizonid is positioned posterior to the excretory pore in contrast to the condition in males. The tail is conical and usually ~~ends in a~~ finely rounded or slightly pointed ~~tip~~terminus. The hyaline tail part is clearly delimited anteriorly with a few cuticular constrictions typically present (Figure 3 and Figure 7) (EPPO, 2018). | P | *Category : SUBSTANTIVE***(374) Korea, Republic of (30 Sep 2024 6:42 AM)**The general shape of the tail tip of M. mali J2 is not completely pointed and has been described as irregular, rounded and unstraited (Itoh, Ohshima, and Ichinohe, 1969) or finely rounded or slightly pointed (Gu, Fang and Liu, 2020). | *Incorporated* |
|  | 92 | Body length is reported to typically range from 390 to 450 µm (but with certain populations reported to have a range of 362–507 μm (Gu, Fang and Liu, 2020)). This species has a short tail (23–39 µm) and short hyaline tail part (4–12 µm). The stylet knobs are small and rounded and slope slightly posteriorly. The hemizonid is positioned posterior to the excretory pore in contrast to the condition in males. The tail is conical and usually ends in a finely pointed tip. The hyaline tail part is clearly delimited anteriorly with a few cuticular constrictions typically present (Figure 3 and Figure 7) (EPPO, 2018). | C | *Category : TECHNICAL***(323) European Union (26 Sep 2024 12:17 PM)**Please provide a reference for the tail length: in EPPO 2018, a J2 tail is mentioned as 30-34 umadditional comment: In Itoh et al 1969 also 30-34, and that’s the refered source beneath the Table.Checked also Ahmed et al 2013, also not this 23-39 range | *Modified**Text amended :**Body length is reported to range from of 362–507 μm (Subbotin et al., 2021). This species has a short tail (23–39 µm) and short hyaline tail part (4–12 µm) Subbotin et al., 2021).* |
|  | 92 | Body length is reported to typically range from 390 to 450 µm (but with certain populations reported to have a range of 362–507 μm ~~(Gu,~~ (Gu *et al*~~Fang and Liu~~, 2020)). This species has a short tail (23–39 µm) and short hyaline tail part (4–12 µm). The stylet knobs are small and rounded and slope slightly posteriorly. The hemizonid is positioned posterior to the excretory pore in contrast to the condition in males. The tail is conical and usually ends in a finely pointed tip. The hyaline tail part is clearly delimited anteriorly with a few cuticular constrictions typically present (Figure 3 and Figure 7) (EPPO, 2018). | P | *Category : EDITORIAL***(292) Japan (24 Sep 2024 11:35 AM)** | *Considered but not incorporated**The change suggested is not in line with the IPPC style.* |
|  | 92 | Body length is reported to typically range from 390 to 450 µm (but ~~with~~ certain populations were reported to have a range of 362–507 μm (Gu, Fang and Liu, 2020)). This species has a short tail (23–39 µm) and a short hyaline tail part (4–12 µm). The stylet knobs are small and rounded and slope slightly posteriorly. The hemizonid is positioned posterior to the excretory pore in contrast to the condition in males. The tail is conical and usually ends in a finely pointed tip. The hyaline tail part is clearly delimited anteriorly with a few cuticular constrictions typically present (Figure 3 and Figure 7) (EPPO, 2018). | P | *Category : EDITORIAL***(281) Kuwait (24 Sep 2024 7:46 AM)** | *Incorporated* |
|  | 92 | Body length is reported to typically range from 390 to 450 µm (but with certain populations reported to have a range of 362–507 μm (Gu, Fang and Liu, 2020)). This species has a short tail (23–39 µm) and short hyaline tail part (4–12 µm). The stylet knobs are small and rounded and slope slightly posteriorly. The hemizonid is positioned posterior to the excretory pore in contrast to the condition in males. The tail is conical and usually ends in a finely pointed tip. The hyaline tail part is clearly delimited anteriorly with a few cuticular constrictions typically present (Figure 3 and Figure 7) (EPPO, 2018). | C | *Category : TECHNICAL***(230) EPPO (17 Sep 2024 4:24 PM)**Please provide a reference for the tail length: in EPPO 2018, a J2 tail is mentioned as 30-34 umadditional comment: In Itoh et al 1969 also 30-34, and that’s the refered source beneath the Table.Checked also Ahmed et al 2013, also not this 23-39 range | *Modified**See answer to comment 190* |
|  | 92 | Body length is reported to typically range from 390 to 450 µm (but with certain populations reported to have a range of 362–507 μm (Gu, Fang and Liu, 2020)). This species has a short tail (23–39 µm) and short hyaline tail part ~~(4–12~~(5–13 µm). The stylet knobs are small and rounded and slope slightly posteriorly. The hemizonid is positioned posterior to the excretory pore in contrast to the condition in males. The tail is conical and usually ends in a finely pointed tip. The hyaline tail part is clearly delimited anteriorly with a few cuticular constrictions typically present (Figure 3 and Figure 7) (EPPO, 2018). | P | *Category : TECHNICAL***(82) United States of America (27 Aug 2024 4:44 PM)**proposed correction | *Considered but not incorporated**No justification is provided to make this change.* |
|  | 93 | Differential diagnosis of morphologically similar species | C | *Category : TECHNICAL***(379) Australia (30 Sep 2024 1:02 PM)**The draft protocol, after directing diagnosticians to use published polytomous keys for identifying Meloidogyne species, focuses on comparing Meloidogyne mali with five other species: M. ardenensis, M. camelliae, M. paramali, M. suginamiensis, and M. vitis. While the original descriptions of M. suginamiensis, M. vitis, and M. paramali indicate that these species are closely related to M. mali, the morphological similarities of M. ardenensis and M. camelliae to M. mali are less well-defined.For example, according to Jepson (1987) and Subbotin et al. (2021), M. mali is classified in J2 group 2, female group 4, male group 7, morphology and host group exigua (parasitizing tree hosts), and molecular clade group VIII. In contrast:• M. ardenensis is classified in J2 group 4, female group 6, male group 7, morphology and host group exigua (parasitising Oleaceae), and molecular clade group V.• M. camelliae is classified in J2 group 5, female group 1, male group 1, morphology and host group exigua (parasitizing Camellia spp.), and molecular clade group X.Other Meloidogyne species in the 'exigua' group with overlapping host ranges could also be considered in the focus group for comparison with Meloidogyne mali. For instance:• M. querciana has been recorded on tree hosts such as Castanea (chestnuts) and Quercus (oaks).• M. platani is known to infect Citrullus (melons) and Solanum lycopersicum (tomato).• M. enterolobii shares many host species with M. mali, including Brassica (cabbages), Capsicum annuum (pepper), Cucumis sativus (cucumber), Cucurbita (pumpkins), Daucus carota (carrot), Ficus carica (common fig), Glycine max (soybean), Lagerstroemia indica (crape myrtle), Morus (mulberries), Prunus (cherries), Solanum lycopersicum (tomato), Solanum melongena (eggplant), Trifolium (clovers), and Ulmus (elms).• M. ovalis is found on Acer (maples) and Ulmus (elms).• M. carolinensis has been recorded on Brassica (cabbages) and Daucus carota (carrot). | *Considered but not incorporated**This DP focuses on morphologically confusing species.* |
|  | 93 | Differential diagnosis of morphologically similar species | C | *Category : TECHNICAL***(41) China (16 Aug 2024 2:02 AM)**A key to the similar species is also provided in this section. The key is helpful for species identification. | *Acknowledged* |
|  | 94 |  *M. mali* is morphologically close to five other species of *Meloidogyne* that share some hosts and areas of distribution (section 1): *M. ardenensis*, *M. camelliae*, *M. paramali*, *M*. *suginamiensis* and *M. vitis*. It differs from these species by having a finely pointed tail terminus in J2 ~~juveniles~~juveniles (Figure 7), while the tail tips are broadly rounded in *M. ardenensis*, *M. camelliae* and *M. suginamiensis* (Figure ~~7~~8 ), the tail ~~in~~ of *M. paramali* J2 juveniles has a finely rounded to broadly pointed (never sharply pointed) terminus and a shorter hyaline region, and the tail ~~in~~of *M. vitis* J2 juveniles is longer with a variable terminus (Figure 8) (EPPO, 2018; Yang *et al*., 2021; Gu *et al*., 2023). In addition, J2 juveniles of *M. camelliae* have a longer body length and an anterior position of the hemizonid in relation to the excretory pore. | P | *Category : EDITORIAL***(324) European Union (26 Sep 2024 12:23 PM)**what is meant by section 1? | *Modified**Section 1 replaced by pest information section.**Other changes suggested were incorporated.* |
|  | 94 | *~~M.~~Meloidogyne mali* is morphologically close to five other species of *Meloidogyne* that share some hosts and areas of distribution (section 1): *M. ardenensis*, *M. camelliae*, *M. paramali*, *M*. *suginamiensis* and *M. vitis*. It differs from these species by having a finely pointed tail terminus in ~~J2 juveniles~~J2s (Figure 3, Figure 7 and Figure 8), while the tail tips are broadly rounded in *M. ardenensis*, *M. camelliae* and *M. suginamiensis* (Figure 7 ), the tail in *M. paramali* ~~J2 juveniles~~ J2s has a finely rounded to broadly pointed (never sharply pointed) terminus and a shorter hyaline region, and the tail in *M. vitis* ~~J2 juveniles~~ J2s is longer with a variable terminus (Figure 8) (EPPO, 2018; Yang *et al*., 2021; Gu *et al*., 2023). In addition, ~~J2 juveniles~~ J2s of *M. camelliae* have a longer body length and an anterior position of the hemizonid in relation to the excretory pore. | P | *Category : EDITORIAL***(148) Japan (17 Sep 2024 12:48 PM)** | *Considered but not incorporated**See answer to comment n°197* |
|  | 94 | *M. mali* is morphologically close to five other species of *Meloidogyne* that share some hosts and areas of distribution (section 1): *M. ardenensis*, *M. camelliae*, *M. paramali*, *M*. *suginamiensis* and *M. vitis*. It differs from these species by having a finely pointed tail terminus in J2 ~~juveniles~~juveniles (Figure 7), while the tail tips are broadly rounded in *M. ardenensis*, *M. camelliae* and *M. suginamiensis* (Figure ~~7~~8 ), the tail ~~in~~ of *M. paramali* J2 juveniles has a finely rounded to broadly pointed (never sharply pointed) terminus and a shorter hyaline region, and the tail ~~in~~of *M. vitis* J2 juveniles is longer with a variable terminus (Figure 8) (EPPO, 2018; Yang *et al*., 2021; Gu *et al*., 2023). In addition, J2 juveniles of *M. camelliae* have a longer body length and an anterior position of the hemizonid in relation to the excretory pore. | P | *Category : EDITORIAL***(232) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated.* |
|  | 94 | *M. mali* is morphologically close to five other species of *Meloidogyne*that share some hosts and areas of distribution (section 1): *M. ardenensis*,*M. camelliae*, *M. paramali*, *M*. *suginamiensis*and*M. vitis*. It differs from these species by having a finely pointed tail terminus in J2 juveniles, while the tail tips are broadly rounded in *M. ardenensis*,*M. camelliae* and *M. suginamiensis* (Figure 7 ), the tail in *M. paramali* J2 juveniles has a finely rounded to broadly pointed (never sharply pointed) terminus and a shorter hyaline region, and the tail in *M. vitis* J2 juveniles is longer with a variable terminus (Figure 8) (EPPO, 2018; Yang *et al*., 2021; Gu *et al*., 2023). In addition, J2 juveniles of *M. camelliae* have a longer body length and an anterior position of the hemizonid in relation to the excretory pore. | C | *Category : EDITORIAL***(231) EPPO (17 Sep 2024 4:24 PM)**what is meant by section 1? | *Modified**Section 1 replaced by pest information section.* |
|  | 94 | *M. mali* is morphologically close to five other species of *Meloidogyne* that share some hosts and areas of distribution (section 1): *M. ardenensis*, *M. camelliae*, *M. paramali*, *M*. *suginamiensis* and *M. vitis*. ~~It~~ M. mali differs from these species by having a finely pointed tail terminus in J2 juveniles, while the tail tips are broadly rounded in *M. ardenensis*, *M. camelliae* and *M. suginamiensis* (Figure 7 ), the tail in *M. paramali* J2 juveniles has a finely rounded to broadly pointed (never sharply pointed) terminus and a shorter hyaline region, and the tail in *M. vitis* J2 juveniles is longer with a variable terminus (Figure 8) (EPPO, 2018; Yang *et al*., 2021; Gu *et al*., 2023). In addition, J2 juveniles of *M. camelliae* have a longer body length and an anterior position of the hemizonid in relation to the excretory pore. | P | *Category : EDITORIAL***(120) New Zealand (11 Sep 2024 1:03 AM)** | *Incorporated* |
|  | 95 | The star-shaped perineal pattern of *M. camelliae* allows an easy separation from *M. mali*, *M. ardenensis*, *M. paramali*, *M. suginamiensis* and *M. vitis* (Figure 9). The female perineal pattern of *M. vitis* differs from *M. mali* in that there is typically a moderately high dorsal arch, and there are no lateral lines in the lateral field (Figure 9) (Yang *et al.*, 2021). *~~M. paramali~~* ~~has a similar perineal pattern to~~ *~~M. mali~~* ~~and can be distinguished from the latter by the distinct lateral fields (Figure 9) (Gu~~ *~~et al.~~*~~, 2023).~~ | P | *Category : TECHNICAL***(149) Japan (17 Sep 2024 12:49 PM)**Regarding the perineal pattern of M. mali, Itoh et al. (1969) states that "Lateral fields clearly marked with single or double incisures." On the other hand, Gu et al. (2023) states about M. paramali, "Perineal patterns were oval or irregular, with distinct lateral lines." These references indicate that both species have distinct lateral lines, so the description in para 95 "M. paramali can be distinguished from M. mali by having distinct lateral bands." is incorrect. | *Incorporated**Deletion of text as proposed* |
|  | 96 | Some of the morphological and morphometric characters that can be used to differentiate the ~~females~~females (Figure 9), males (Figure ~~10)~~ 9) and ~~J2 juveniles~~ J2s (Figure 8) of *M. mali*, *M. ardenensis*, *M. camelliae*, *M. paramali*, *M. suginamiensis* and *M. vitis* are summarized in Table 1. | P | *Category : EDITORIAL***(150) Japan (17 Sep 2024 12:51 PM)** | *Modified* *Males’ character are indeed illustrated in Figure 10. Other elements included.* |
|  | 98 | **Character** | C | *Category : SUBSTANTIVE***(376) Korea, Republic of (30 Sep 2024 7:01 AM)**Korea propose to add two morphological and morphometric characters ("♀ Distance from anterior end to excretory pore", "J2 Style length") to distinguish the five species similar to M. mali. | *Consider but not incorporated**See answer to comment 202* |
|  | 106 | 13–17 (15) | C | *Category : TECHNICAL***(325) European Union (26 Sep 2024 12:29 PM)**In paragraph 88, this range is given as "11-17" . please verify | *Modified**See answer to comment 183* |
|  | 106 | 13–17 (15) | C | *Category : TECHNICAL***(233) EPPO (17 Sep 2024 4:24 PM)**"11-17" according to paragraph 88. | *Modified**See answer to comment 183* |
|  | 148 | ~~23–39~~ 30–34 (31) | P | *Category : EDITORIAL***(151) Japan (17 Sep 2024 12:52 PM)** | *Modified**See answer to comment 190* |
|  | 155 | 4–12 (8) | C | *Category : TECHNICAL***(152) Japan (17 Sep 2024 12:54 PM)**The scientific evidence for the measurement of J2 hyaline tail part is unclear.The reference Itoh et al. (1969) does not include any measurement values ​​of the J2 hyaline tail part. If the data was quoted from another source, this should be stated. | *Incorporated**Source reference added to the table* |
|  | 156 | 10–13 (12) | C | *Category : TECHNICAL***(153) Japan (17 Sep 2024 12:55 PM)**The scientific evidence for the J2 hyaline tail part measurement is unclear.The reference de A. Santos (1968) does not include any measurement values ​​of the J2 hyaline tail part.If the data was quoted from another source, this should be stated. | *Incorporated**Source reference added to the table* |
|  | 159 | 3–5 (4) | C | *Category : EDITORIAL***(154) Japan (17 Sep 2024 12:56 PM)**The scientific evidence for mean length of the J2 hyaline tail part is unclear.The reference Toida and Yaegashi (1984) does not show mean length of the J2 hyaline tail part. If the data was quoted from another source, this should be stated. | *Modified**See answer to comment 208* |
|  | 169 | Finely Pointed (Figure 3, Figure 7 & Figure 8) | P | *Category : TECHNICAL***(326) European Union (26 Sep 2024 12:37 PM)**For consistency with paragraphs 92 and 94. | *Incorporated* |
|  | 169 | ~~Pointed~~ Finelly pointed (Figure 3, Figure 7 & Figure 8) | P | *Category : TECHNICAL***(234) EPPO (17 Sep 2024 4:24 PM)**For consistency with paragraphs 92 and 94. | *Incorporated* |
|  | 176 | \* Length of dorsal gland orifice to base of stylet. † Partly after Jepson (1987). ‡ Hemizonid position in relation to the excretory pore. | P | *Category : EDITORIAL***(327) European Union (26 Sep 2024 12:40 PM)**New paragraphs for better clarity. | *Incorporated**To be confirmed by IPPC editor if in line with IPPC style* |
|  | 176 | \* Length of dorsal gland orifice to base of stylet. † Partly after Jepson (1987). ‡ Hemizonid position in relation to the excretory pore. | P | *Category : EDITORIAL***(235) EPPO (17 Sep 2024 4:24 PM)**New paragraphs for better clarity. | *Incorporated**To be confirmed by IPPC editor if in line with IPPC style* |
|  | 178 | Jepson, S.B. 1987. *Identification of root-knot nematodes (*Meloidogyne*species)*. Farnham Royal, UK, Commonwealth Agricultural Bureaux. 265 pp. | C | *Category : EDITORIAL***(236) EPPO (17 Sep 2024 4:24 PM)**It seems a bit strange to have some bibliography here. According to the status box of draft annex to ISPM 46, it seems that these references could be moved to the References section (section 8), following change in FAO style that permits this. | *Considered but not incorporated**This is in line with IPPC style.* |
|  | 180 | *M. mali*: Itoh, Y., Ohshima, Y. & Ichinohe, M. 1969. A root-knot nematode, *Meloidogyne mali* n. sp. on apple-tree from Japan (Tylenchida: Heteroderidae). *Applied Entomology and Zoology*, ~~4~~4(4): 194–202. https://doi.org/10.1303/aez.4.194 | P | *Category : EDITORIAL***(155) Japan (17 Sep 2024 12:57 PM)** | *Considered but not incorporated**The suggested change is not in line with IPPC style.* |
|  | 181 | *M. ardenensis:* de A. Santos, M.S.N. 1968. *Meloidogyne ardenensis* n. sp. (Nematoda: Heteroderidae), a new British species of root-knot nematode. *Nematologica (1967)*, ~~13~~13(4): 593–598. https://doi.org/10.1163/187529267X00418 | P | *Category : EDITORIAL***(156) Japan (17 Sep 2024 12:59 PM)**This literature should be added to 8. References. | *Considered but not incorporated**The suggested change is not in line with IPPC style.* |
|  | 181 | *M. ardenensis:*de A. Santos, M.S.N. 1968. *Meloidogyne ardenensis* n. sp. (Nematoda: Heteroderidae), a new British species of root-knot nematode. *Nematologica (1967)*, 13: 593–598. https://doi.org/10.1163/187529267X00418 | C | *Category : EDITORIAL***(328) European Union (26 Sep 2024 12:42 PM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not incorporated**The suggested change is not in line with IPPC style.* |
|  | 181 | *M. ardenensis:*de A. Santos, M.S.N. 1968. *Meloidogyne ardenensis* n. sp. (Nematoda: Heteroderidae), a new British species of root-knot nematode. *Nematologica (1967)*, 13: 593–598. https://doi.org/10.1163/187529267X00418 | C | *Category : EDITORIAL***(237) EPPO (17 Sep 2024 4:24 PM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not incorporated**The suggested change is not in line with IPPC style.* |
|  | 182 | *M. camelliae*: Golden, A.M. 1979. Description of *Meloidogyne camelliae* n. sp. and *M. querciana* n. sp. (Nematoda: ~~Meloidogynidae)~~ Meloidogynidae), with SEM and host-range observations. *Journal of Nematology*, ~~11~~11(2): 175–189. https://journals.flvc.org/jon/article/view/65150 | P | *Category : EDITORIAL***(157) Japan (17 Sep 2024 1:00 PM)**This literature should be added to 8. References. | *Considered but not incorporated**The suggested change is not in line with IPPC style.* |
|  | 182 | *M. camelliae*: Golden, A.M. 1979. Description of *Meloidogyne camelliae* n. sp. and *M. querciana* n. sp. (Nematoda: Meloidogynidae) with SEM and host-range observations. *Journal of Nematology*, 11: 175–189. https://journals.flvc.org/jon/article/view/65150 | C | *Category : EDITORIAL***(329) European Union (26 Sep 2024 12:48 PM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not incorporated**The suggested change is not in line with IPPC style.* |
|  | 182 | *M. camelliae*: Golden, A.M. 1979. Description of *Meloidogyne camelliae* n. sp. and *M. querciana* n. sp. (Nematoda: Meloidogynidae) with SEM and host-range observations. *Journal of Nematology*, 11: 175–189. https://journals.flvc.org/jon/article/view/65150 | C | *Category : EDITORIAL***(238) EPPO (17 Sep 2024 4:24 PM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not incorporated**The suggested change is not in line with IPPC style.* |
|  | 184 | *M. suginamiensis*: Toida, Y. & Yaegashi, T. 1984. Description of *Meloidogyne suginamiensis* n. sp. (Nematoda: Meloidogynidae) from mulberry in Japan. *Japanese Journal of Nematology*, ~~12~~14: 49–57. | P | *Category : EDITORIAL***(158) Japan (17 Sep 2024 1:01 PM)** | *Incorporated* |
|  | 187 | This section provides information regarding molecular methods that enable the identification of *M. mali* from isolated nematodes at any life stage. M. mali can be identified solely on the basis of molecular or biochemical methods*~~M. mali~~* ~~cannot be identified solely on the basis of molecular or biochemical methods.~~ | P | *Category : SUBSTANTIVE***(367) China (29 Sep 2024 3:37 AM)**In molecular or biochemical methods, several single J2s or females are already detected, though they were not check with morphological characters, it is suggested that “M. mali can be identified solely on the basis of molecular or biochemical methods”. | *Considered but not incorporated**According to the experience of the drafting team, M. mali can not be identified solely on the basis of molecular or biochemical methods, morphological analysis is always conducted.* |
|  | 187 | This section provides information regarding molecular methods that enable the identification of *M. mali* from isolated nematodes at any life stage. *M. mali* cannot be identified solely on ~~the basis of~~ molecular or biochemical methods. | P | *Category : EDITORIAL***(282) Kuwait (24 Sep 2024 7:48 AM)** | *Incorporated* |
|  | 187 | This section provides information regarding molecular methods that enable the identification of *M. mali* from isolated nematodes at any life stage. *Meloidogyne ~~M.~~mali* cannot be identified solely on the basis of molecular or biochemical methods. | P | *Category : EDITORIAL***(159) Japan (17 Sep 2024 1:03 PM)** | *Incorporated* |
|  | 187 | This section provides information regarding molecular methods that enable the identification of *M. mali* ~~from isolated nematodes~~ at any life ~~stage~~stages. *M. mali* cannot be identified solely on the basis of molecular or biochemical methods. | P | *Category : EDITORIAL***(121) New Zealand (11 Sep 2024 1:04 AM)**to make sentence more concise | *Incorporated* |
|  | 188 | Several molecular methods are available for the identification of *M. mali*. The molecular ~~methods~~ method described hereafter ~~are those~~ is recommended at the time of drafting of this protocol. Other methods may be available. Extraction of DNA is the first step for any molecular method (section 4.3.1). DNA barcoding (section 4.3.2) is recommended to ~~identify~~ differentiate *M. mali* from other species with which it may be confused, including *M. paramali*.  | P | *Category : EDITORIAL***(330) European Union (26 Sep 2024 12:52 PM)** | *Incorporated* |
|  | 188 | Several molecular methods are available for the identification of ~~Several methods are available for the identification of~~ *M. mali*. The molecular ~~methods~~ method described hereafter are those recommended at the time of drafting of this protocol. Other methods may be available. Extraction of DNA is the first step for any molecular method (section 4.3.1). DNA barcoding (section 4.3.2) is recommended to ~~identify~~ differentiate *M. mali* from other species with which it may be confused, including *M. paramali*.  | P | *Category : EDITORIAL***(239) EPPO (17 Sep 2024 4:24 PM)**Adjust also sentence; is recommended instead of are recommended. | *Incorporated* |
|  | 190 | 4.3.1 DNA extraction | C | *Category : TECHNICAL***(331) European Union (26 Sep 2024 12:54 PM)**Suggestion to include a method using lysisbuffer, such as Holterman et al 2006 | *Incorporated**The method by Holterman et al 2006 can be added if we provide more choices:**Single nematodes were transferred to a 0.2ml polymerase chain reaction (PCR) tube containing 25 µL of sterile water. An equal volume of lysis buffer containing 0.2 M NaCl, 0.2 M Tris–HCl (pH 8.0), 1% (v/v) b-mercaptoethanol, and 800 µg /ml proteinase-K was added. Lysis took place in a Thermomixer (Eppendorf, Hamburg, Germany) at 65 °C and 750 rpm for 2 h, followed by 5 min incubation at 100 °C. Lysate was used immediately or stored at -20 °C.* |
|  | 190 | 4.3.1 DNA extraction | C | *Category : TECHNICAL***(240) EPPO (17 Sep 2024 4:24 PM)**Suggestion to include a method using lysisbuffer, such as Holterman et al 2006 | *Incorporated**See answer to comment 230* |
|  | 190 | 4.3.1 DNA extraction | C | *Category : TECHNICAL***(7) COSAVE (15 Aug 2024 12:37 AM)**What about DNA quality and concentration? Is there a minimal DNA concentration required for the barcoding? Regarding the extraction procedure with just 3-5 individuals, is it enough to get good DNA concentration with the listed methods? | *Considered but not incorporated**See answer to comment 233.* |
|  | 191 | **Method 1 (**Gu *et al.*, 2021). Extraction should be performed on 3–5 individual nematodes. A single nematode is placed into a 200 µL polymerase chain reaction (PCR) microtube that has been preprepared to contain 8 µL ddH2O and 1 µL 10× PCR buffer (Mg2+free). The PCR microtube containing the nematode specimen is placed in an ultra-low-temperature refrigerator (−70 °C) for a minimum of 20 min. After this, the PCR microtube is heated at 85 °C for 2 min, then 1 µL proteinase K (1 mg/mL) is added and the tube is heated at 56 °C for 15 min, followed by heating at 95 °C for 10 min. The DNA obtained is ready for direct PCR amplification or can be stored at −20 °C until required.  | C | *Category : TECHNICAL***(332) European Union (26 Sep 2024 12:58 PM)**Adding proteinase K in a PCR tube at 85 ℃, may seriously affect the integrity of the enzyme and therefore decrease the DNA yield. Please provide information on whether it has it been tested/observed/validated before, or used in one or several labs with many experience with M. mali?Please verify, as the optimal temperature for proteinase K is 65°C and not 56°C | *Considered but not incorporated**According to Wang et al. (2011) and Gu et al. (2021), this proteinase K method to extract DNA from a single nematode is widely used, and performs excellent. The temperature of 56°C works well, but 65°C may also perform appropriately as the best temperature is a range.* *The temperature of 85 ℃ is used to destroy the proteinase K.**For the Method 2 (Heydari & Pedram, 2020), it also works well, but it relies on training and good competence to destroy the nematode under the microscope with an eppendorf tip.* |
|  | 191 | **Method 1 (**Gu *et al.*, 2021). Extraction should be performed on 3–5 individual nematodes. A single nematode is placed into a 200 µL polymerase chain reaction (PCR) microtube that has been preprepared to contain 8 µL ddH2O and 1 µL 10× PCR buffer (Mg2+free). The PCR microtube containing the nematode specimen is placed in an ultra-low-temperature refrigerator (−70 °C) for a minimum of 20 min. After this, the PCR microtube is heated at 85 °C for 2 min, then 1 µL proteinase K (1 mg/mL) is added and the tube is heated at 56 °C for 15 min, followed by heating at 95 °C for 10 min. The DNA obtained is ready for direct PCR amplification or can be stored at −20 °C until required.  | C | *Category : TECHNICAL***(241) EPPO (17 Sep 2024 4:24 PM)**Adding proteinase K in a PCR tube at 85 ℃, may seriously affect the integrity of the enzyme and therefore decrease the DNA yield. Please provide information on whether it has it been tested/observed/validated before, or used in one or several labs with many experience with M. mali?Please verify, as the optimal temperaure for proteinase K is 65°C and not 56°C | *Considered but not incorporated**See answer to comment 233.* |
|  | 191 | **Method 1 (**Gu *et al.*, 2021). ~~Extraction~~ DNA extraction should be performed on 3–5 individual nematodes. A single nematode is placed into a 200 µL polymerase chain reaction (PCR) ~~microtube~~microtube  ~~that has been preprepared to contain~~ containing 8 µL ddH2O and 1 µL 10× PCR buffer (Mg2+free). ~~The PCR microtube containing the nematode specimen~~ This content is placed in an ultra-low-temperature refrigerator (−70 °C) for a minimum of 20 min. After this, the PCR microtube is heated at 85 °C for 2 min, then 1 µL proteinase K (1 mg/mL) is added and the tube is heated at 56 °C for 15 min, followed by heating at 95 °C for 10 min. The DNA obtained is ready for direct PCR amplification or can be stored at −20 °C until required.  | P | *Category : EDITORIAL***(122) New Zealand (11 Sep 2024 1:08 AM)**to make sentence more concise | *Incorporated* |
|  | 191 | **Method 1 (**Gu *et al.*, 2021). Extraction should be performed on 3–5 individual ~~nematodes~~nematodes under nuclease-free conditions. A single nematode is placed into a 200 µL polymerase chain reaction (PCR) microtube that has been preprepared to contain 8 µL ddH2O and 1 µL 10× PCR buffer (Mg2+free). The PCR microtube containing the nematode specimen is placed in an ultra-low-temperature refrigerator (−70 °C) for a minimum of 20 min. After this, the PCR microtube is heated at 85 °C for 2 min, then 1 µL proteinase K (1 mg/mL) is added and the tube is heated at 56 °C for 15 min, followed by heating at 95 °C for 10 min. The DNA obtained is ready for direct PCR amplification or can be stored at −20 °C until required.  | P | *Category : TECHNICAL***(23) Colombia (15 Aug 2024 6:59 PM)**The description of Method 1 for DNA extraction mentions the use of ddH2O and PCR buffer but does not specify the importance of nuclease-free conditions to avoid DNA degradation. | *Considered but not incorporated**This is good practice for biomolecular laboratories. This is not repeated in the IPPC diagnostic protocols.* |
|  | 192 | **Method 2** (Heydari & Pedram, 2020). Extraction should be performed on 3–5 individual nematodes. A 15 μL drop of TE buffer (10 mM Tris-Cl; 0.5 mM ethylenediaminetetraacetic acid (EDTA); pH 9.0) is placed on a clean slide. A single nematode is placed in the drop of buffer and either directly squashed with the tip of a suction pipette or cut into pieces with a sterile hypodermic needle. This solution is then pipetted into a 200 µL PCR tube. The DNA obtained is ready for direct PCR amplification or can be stored at −20 °C until required. | C | *Category : TECHNICAL***(333) European Union (26 Sep 2024 12:59 PM)**Please provide information on whether this method has been validated, as the method of squashing a single nematode may give highly variable results in DNA yield. | *Considered but not incorporated**Refer to answer to comment 233* |
|  | 192 | **Method 2** (Heydari & Pedram, 2020). Extraction should be performed on 3–5 individual nematodes. A 15 μL drop of TE buffer (10 mM Tris-Cl; 0.5 mM ethylenediaminetetraacetic acid (EDTA); pH 9.0) is placed on a clean slide. A single nematode is placed in the drop of buffer and either directly squashed with the tip of a suction pipette or cut into pieces with a sterile hypodermic needle. This solution is then pipetted into a 200 µL PCR tube. The DNA obtained is ready for direct PCR amplification or can be stored at −20 °C until required. | C | *Category : TECHNICAL***(242) EPPO (17 Sep 2024 4:24 PM)**Please provide information on whether this method has been validated, as the method of squashing a single nematode may give highly variable results in DNA yield. | *Considered but not incorporated**See answer to comment 233.* |
|  | 192 | **Method 2** (Heydari & Pedram, 2020). ~~Extraction~~ DNA extraction should be performed on 3–5 individual nematodes. A ~~15 μL~~ drop of 15 μL TE buffer (10 mM Tris-Cl; 0.5 mM ethylenediaminetetraacetic acid (EDTA); pH 9.0) is placed on a clean slide. A single nematode is placed in the drop of buffer and either directly squashed with the tip of a suction pipette or cut into pieces with a sterile hypodermic needle. This solution is then pipetted into a 200 µL PCR tube. The DNA obtained is ready for direct PCR amplification or can be stored at −20 °C until required. | P | *Category : EDITORIAL***(123) New Zealand (11 Sep 2024 1:09 AM)** | *Considered but not incorporated**This method ains at preparing a crude extract but not strictly extract DNA.* |
|  | 192 | **Method 2** (Heydari & Pedram, 2020). Extraction should be performed on 3–5 individual nematodes. A 15 μL drop of TE buffer (10 mM Tris-Cl; 0.5 mM ethylenediaminetetraacetic acid (EDTA); pH 9.0) is placed on a clean slide. A single nematode is placed in the drop of buffer and either directly squashed with the tip of a suction pipette or cut into pieces with a sterile hypodermic needle, ensuring no contamination occurs. This solution is then pipetted into a 200 µL PCR tube. The DNA obtained is ready for direct PCR amplification or can be stored at −20 °C until required. | P | *Category : TECHNICAL***(25) Colombia (15 Aug 2024 7:02 PM)**Method 2 describes the squashing or cutting of nematodes in a TE buffer drop but lacks specific mention of the importance of avoiding contamination during this process. | *Considered but not incorporated**This is good practice for biomolecular laboratories. This is not repeated in the IPPC diagnostic protocols.* |
|  | 192 | **Method 2** (Heydari & Pedram, 2020). Extraction should be performed on 3–5 individual nematodes. A 15 μL drop of TE buffer (10 mM Tris-Cl; 0.5 ~~mM ethylenediaminetetraacetic~~m Methylenediaminetetraacetic acid (EDTA); pH 9.0) is placed on a clean slide. A single nematode is placed in the drop of buffer and either directly squashed with the tip of a suction pipette or cut into pieces with a sterile hypodermic needle. This solution is then pipetted into a 200 µL PCR tube. The DNA obtained is ready for direct PCR amplification or can be stored at −20 °C until required. | P | *Category : EDITORIAL***(24) Colombia (15 Aug 2024 7:01 PM)**correct the spacing of words | *Considered but not incorporated.**The current spelling is correct, EDTA is ethylenediaminetetraacetic acid.**The upper case “M” is used for molarity.* |
|  | 192 | **Method 2** (Heydari & Pedram, 2020). Extraction should be performed on 3–5 individual nematodes. A 15 μL drop of TE buffer (10 mM Tris-Cl; 0.5 mM ethylenediaminetetraacetic acid (EDTA); pH 9.0) is placed on a clean slide. A single nematode is placed in the drop of buffer and either directly squashed with the tip of a suction pipette or cut into pieces with a sterile hypodermic needle. This solution is then pipetted into a 200 µL PCR tube. The DNA obtained is ready for direct PCR amplification or can be stored at −20 °C until required. | C | *Category : TECHNICAL***(8) COSAVE (15 Aug 2024 12:38 AM)**In this case, we should say that the sample is not solely DNA. Maybe we could say that this is a “nematode sample” or “nematode material”. | *Modified**“DNA obtained” is replaced by crude extract, this expression is used in such cases.* |
|  | 193 | **Other methods.** Methods 1 and 2 may be adjusted to the standards of individual laboratories, provided that they are adequately validated. Commercial kits, such as the DNeasy Blood and Tissue Kit (QIAGEN), the QIAamp DNA Micro Kit (QIAGEN) or the Nematode DNA extraction kit (ClearDetections), may also be used: such kits should be used according to the manufacturer’s instructions or may be adapted following in-house validation.1 Emphasize the importance of sample purity and the risk of contamination during DNA extraction, as this can impact results. Ensure samples are processed individually to avoid cross-contamination, and clean equipment thoroughly between samples. | P | *Category : TECHNICAL***(22) Colombia (15 Aug 2024 6:57 PM)**It is important to mention the importance of sample purity and the potential for contamination during DNA extraction, which can affect results.Add details on sample preparation to avoid cross contamination. | *Considered but not incorporated**This is common good practice for biomolecular laboratories. This is not repeated in the IPPC diagnostic protocols.* |
|  | 195 | **4.3.2** **DNA barcoding** | C | *Category : SUBSTANTIVE***(62) South Africa (20 Aug 2024 11:58 AM)**Proposal for including the sequences of the primers to be used for the different regions in the form of a table. | *Considered but not included**This information is already described in Appendix 5 of EPPO (2016), which is cited in the IPPC diagnostic protocol.**Text was added to clarify that the relevant primers are included in this Appendix 5 of EPPO protocol.* |
|  | 195 | 4.3.2 DNA barcoding | C | *Category : TECHNICAL***(9) COSAVE (15 Aug 2024 12:39 AM)**This barcoding mentioned is mainly based on DNA sequencing. Maybe we should consider to make it clear in the document that the amplification of the different regions must be followed by sequencing of the PCR products. | *Considered but not included**The current text already covered this aspect:**“The targeted region is amplified by PCR and the amplicons are sequenced either directly or after they are cloned”* |
|  | 196 | Ribosomal (r)RNA-based molecular barcoding remains a powerful tool for *M. mali* delimitation ~~(Gu,~~ (Gu *et al.*~~Fang and Liu~~, 2020). Several genomic regions have been directly sequenced from isolated nematodes for the purpose of species identification of *M. mali* and differentiation of different *Meloidogyne* species (EPPO, 2016). These regions include the 18S small subunit (SSU), internal transcribed spacers (ITS), the 28S large subunit (LSU) of ribosomal DNA, and the cytochrome c oxidase I (COI) mitochondrial DNA region (Holterman *et al*., 2009; Ahmed *et al*., 2013). In *M. mali*, COI sequences are more homogeneous than rRNA sequences; COI gene sequencing is also the most efficient method for DNA barcoding. A single gene can be used for DNA barcoding, but several genes used together give a more reliable identification. The targeted region is amplified by PCR and the amplicons are sequenced either directly or after they are cloned. A protocol for DNA barcoding based on COI, SSU and LSU is described in Appendix 5 of EPPO (2016) and can be used to support the identification of *M. mali*.  | P | *Category : EDITORIAL***(161) Japan (17 Sep 2024 1:04 PM)** | *Considered but not included**The change proposed is not in line with IPPC style format for references* |
|  | 196 | Ribosomal ~~(r)RNA-based~~ ribonucleic acid (rRNA)-based molecular barcoding remains a powerful tool for *M. mali* delimitation (Gu, Fang and Liu, 2020). Several genomic ~~regions~~ regions/genes have been directly sequenced from ~~isolated~~ nematodes for ~~the purpose of~~ species identification of *M. mali* and differentiation of different *Meloidogyne* species (EPPO, 2016). These regions include the 18S small subunit (SSU), internal transcribed spacers (ITS), the 28S large subunit ~~(LSU) of ribosomal DNA~~(LSU), and the cytochrome c oxidase I (COI) mitochondrial DNA region (Holterman *et al*., 2009; Ahmed *et al*., 2013). In *M. mali*, COI sequences are more homogeneous than rRNA sequences; COI gene sequencing is also the most efficient method for DNA barcoding. A single gene can be used for DNA barcoding, but several genes used together give a more reliable identification. The targeted region is amplified by using appropriate PCR primers and the amplicons are sequenced either directly or ~~after they are cloned~~indirectly (cloned). A protocol for DNA barcoding based on COI, SSU and LSU is described in Appendix 5 of EPPO (2016) and can be used to support the identification of *M. mali*.  | P | *Category : EDITORIAL***(124) New Zealand (11 Sep 2024 1:13 AM)** | *Incorporated* |
|  | 197 | Reference to reliable, curated databases for DNA sequencing, such as EPPO-Q-bank (https://qbank.eppo.int/nematodes/), should be made (Bonants, Edema and Robert, 2013; EPPO, 2018). Other sources of reference sequences may be used, such as GenBank (https://www.ncbi.nlm.nih.gov/genbank/: sequence MT406757 for the LSU barcode of *M. mali*). | P | *Category : EDITORIAL***(162) Japan (17 Sep 2024 1:05 PM)** | *Incorporated* |
|  | 198 | Sequence data can then be analysed using the Basic Local Alignment Search Tool (BLAST) available at the National Center for Biotechnology Information (NCBI) ([www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov/)) and compared with *Meloidogyne* sequences available in the NCBI database.  | C | *Category : TECHNICAL***(10) COSAVE (15 Aug 2024 12:40 AM)**Should we add also COI region? As we see in EPPO (2016), and is further mentioned (204), that is more important and relevant than rRNA genes. | *Considered but not incorporated**This information is already provided in paragraph 196* |
|  | 199 | For the SSU, ITS or LSU, the following criteria apply: | C | *Category : TECHNICAL***(26) Colombia (15 Aug 2024 7:07 PM)**It is suggested to include more information about the suggested genes, such as expected size in base pairs, for M. mali and photograph documenting the results of agarose gel amplifications for the suggested markers. | *Considered but not incorporated**The Appendix 5 of EPPO protocol PM7/129 provide the information suggested.**Table 2 has been added to provide minimum information.* |
|  | 200 | **18S SSU ~~gene~~region.** If the sample’s pairwise sequence divergence compared with known *M. mali* sequences is less than 2% but more than 2% compared with all other species, it is identified as *M. mali*.  | P | *Category : TECHNICAL***(125) New Zealand (11 Sep 2024 1:14 AM)**Region is the correct term | *Incorporated* |
|  | 201 | **Internal transcribed spacer gene.** If the sample’s pairwise sequence divergence compared with known *M. mali* sequences is less than ~~5%~~ 7% but more than ~~5%~~ 7% compared with all other species, it is identified as *M. mali*.  | P | *Category : SUBSTANTIVE***(369) China (29 Sep 2024 4:07 AM)**Due to the high intraspecific variation in the ITS sequences of M. mal, a 7% divergence rate is more reasonable after re-verification of the literature. | *Incorporated* |
|  | 201 | **Internal transcribed spacer ~~gene~~region.** If the sample’s pairwise sequence divergence compared with known *M. mali* sequences is less than 5% but more than 5% compared with all other species, it is identified as *M. mali*.  | P | *Category : TECHNICAL***(126) New Zealand (11 Sep 2024 1:14 AM)** | *Incorporated* |
|  | 201 | **Internal transcribed spacer gene.** If the sample’s pairwise sequence divergence compared with known *M. mali* sequences is less than ~~5%~~ 7% but more than ~~5%~~ 7% compared with all other species, it is identified as *M. mali*.  | P | *Category : TECHNICAL***(44) China (16 Aug 2024 2:08 AM)**Due to the high intraspecific variation in the ITS sequences of M. mal, a 7% divergence rate is more reasonable after re-verification of the literature. | *Incorporated* |
|  | 202 | **28S LSU ~~gene~~region.** If the sample’s pairwise sequence divergence compared with known *M. mali* sequences is less than 5% but more than 5% compared with all other species, it is identified as *M. mali*.  | P | *Category : TECHNICAL***(127) New Zealand (11 Sep 2024 1:14 AM)** | *Incorporated* |
|  | 204 | ~~Compared with rRNA, COI sequences in~~ *~~M. mali~~* ~~are more homogeneous. If the sample’s COI pairwise sequence divergence compared with known~~ *~~M. mali~~* ~~sequences is less than 1% but more than 1% compared with all other species, it is identified as~~ *~~M. mali~~*~~.~~Em comparação com o rRNA, as sequências COI em *M. mali* são mais homogêneas. Se a divergência de sequência par a par COI da amostra em comparação com sequências M*. mali* conhecidas for inferior a 1%, mas superior a 1% em comparação com todas as outras espécies, ela é identificada como *M. mali*. | P | *Category : EDITORIAL***(69) Guinea-Bissau (20 Aug 2024 5:10 PM)**Os controlos bem como controlos adicinais | *Considered but not incorporated**Comment unclear* |
|  | 205 | **~~Controls for barcoding~~Controles para código de barras** | P | *Category : EDITORIAL***(70) Guinea-Bissau (20 Aug 2024 5:35 PM)**Controlos | *Considered but not incorporated**The IPPC diagnostic protocols are developed in English only.* |
|  | 206 | For the test result to be considered reliable, appropriate ~~controls –~~ controls, which will depend on the type of method used for the test and the level of certainty ~~required –~~ required, should be considered for each series of nucleic acid isolations and amplifications of the target pest or target nucleic acid.  | P | *Category : EDITORIAL***(283) Kuwait (24 Sep 2024 7:49 AM)** | *Considered but not incorporated**Not in line with IPPC style format* |
|  | 206 | ~~For the test result to be considered reliable~~Para que o resultado do ensaio seja considerado fiável, ~~appropriate controls~~ devem ser considerados controlos adequados – ~~which will depend on the type of method used for the test and the level of certainty required~~ que dependerão do tipo de método utilizado para o ensaio e do nível de certeza exigido – ~~should be considered for each series of nucleic acid isolations and amplifications of the target pest or target nucleic acid~~para cada série de isolamentos e amplificações de ácidos nucleicos da praga ou do ácido nucleico alvo.  | P | *Category : EDITORIAL***(71) Guinea-Bissau (20 Aug 2024 5:52 PM)**Sem comentaruis | *Considered but not incorporated**Comment unclear* |
|  | 207 | The minimum controls are described below, as well as additional controls that may be used for barcoding.  | C | *Category : SUBSTANTIVE***(334) European Union (26 Sep 2024 1:04 PM)**Not sure it is clear what are the minimum controls and the additional controls in paragraphs 208 to 210. | *Modified**The current text only includes the minimum controls. Text was adjusted consequently.* |
|  | 207 | The minimum controls are described below, as well as additional controls that may be used for barcoding.  | C | *Category : SUBSTANTIVE***(243) EPPO (17 Sep 2024 4:24 PM)**Not sure it is clear what are the minimum controls and the additional controls in paragraphs 208 to 210. | *Modified**The current text only includes the minimum controls. Text was adjusted consequently.* |
|  | 208 | Positive nucleic acid control. This control is used to monitor the efficiency of PCR amplification. Preprepared (stored) nucleic acid, whole genomic DNA or a synthetic control (e.g. cloned PCR product) may be used. | C | *Category : SUBSTANTIVE***(368) China (29 Sep 2024 4:06 AM)**In practice, not all laboratories are able to acquire a positive control. Additionally, the length of amplicons is not always solely connected with the target nematode. | *Considered but not incorporated**The text include the minimum controls to rule out false positive or false negative results and to ensure the validity of the identification.* |
|  | 208 | **Positive nucleic acid control.** This control is used to monitor the efficiency of PCR amplification. Preprepared (stored) nucleic acid, whole genomic DNA or a synthetic control (e.g. cloned PCR product) may be used. | C | *Category : SUBSTANTIVE***(336) European Union (26 Sep 2024 2:15 PM)**Does this mean it is a minimum control? (Please see comment on paragraph 207). Should "is" be replaced with "should be"? | *Modified**The controls described are indeed minimum controls.**The verb “is” is maintained and “should” is excluded according to IPPC style.* |
|  | 208 | **Positive nucleic acid control.** This control is used to monitor the efficiency of PCR amplification. Preprepared (stored) nucleic acid, whole genomic DNA or a synthetic control (e.g. cloned PCR product) may be used. | C | *Category : SUBSTANTIVE***(244) EPPO (17 Sep 2024 4:24 PM)**Does this mean it is a minimum control? (Please see comment on paragraph 207). Should "is" be replaced with "should be"? | *Modified**The controls described are indeed minimum controls.**The verb “is” is maintained and “should” is excluded according to IPPC style.* |
|  | 208 | **Positive nucleic acid control.** This control is used to monitor the efficiency of PCR amplification. Preprepared (stored) M. mali nucleic acid, whole genomic DNA or a synthetic control of a target region (e.g. cloned PCR product) may be used. | P | *Category : EDITORIAL***(128) New Zealand (11 Sep 2024 1:15 AM)** | *Incorporated* |
|  | 208 | **Positive nucleic acid control.** This control is used to monitor the efficiency of PCR amplification. Preprepared (stored) nucleic acid, whole genomic DNA or a synthetic control (e.g. cloned PCR product) may be used. | C | *Category : SUBSTANTIVE***(43) China (16 Aug 2024 2:08 AM)**Is this method recommended or obligation? In practice, not all laboratories are able to acquire a positive control. Additionally, the length of amplicons is not always solely connected with the target nematode. | *Considered but not incorporated**The text include the minimum controls to rule out false positive or false negative results and to ensure the validity of the identification.* |
|  | 209 | **Negative amplification control (no template control).** This control is necessary for conventional and real-time PCR to rule out false positives resulting from contamination during preparation of the reaction mixture. PCR-grade water that was used to prepare the reaction mixture is added at the amplification stage. | C | *Category : SUBSTANTIVE***(337) European Union (26 Sep 2024 2:17 PM)**Does this mean it is a minimum control? (please see comment on paragraph 207). Should "is necessary" be replaced with "should be used"? | *Modified**The controls described are indeed minimum controls.**The verb “is” is maintained and “should” is excluded according to IPPC style.* |
|  | 209 | **Negative amplification control (no template control).** This control is necessary for conventional and real-time PCR to rule out false positives resulting from contamination during preparation of the reaction mixture. PCR-grade water that was used to prepare the reaction mixture is added at the amplification stage. | C | *Category : SUBSTANTIVE***(245) EPPO (17 Sep 2024 4:24 PM)**Does this mean it is a minimum control? (please see comment on paragraph 207). Should "is necessary" be replaced with "should be used"? | *Modified**The controls described are indeed minimum controls.**The verb “is” is maintained and “should” is excluded according to IPPC style.* |
|  | 209 | **Negative amplification control (no template control).** This control is necessary for conventional and real-time PCR to rule out false positives resulting from contamination during preparation of the PCR reaction mixture. PCR-grade water that was used to prepare the reaction mixture is added at the amplification stage. | P | *Category : EDITORIAL***(129) New Zealand (11 Sep 2024 1:16 AM)** | *Incorporated* |
|  | 210 | **Negative extraction control.** This control is used to monitor contamination during nucleic acid extraction. Extraction buffer can be used as a negative extraction control. It is recommended that multiple controls be included when large numbers of positive samples are processed. | C | *Category : SUBSTANTIVE***(339) European Union (26 Sep 2024 2:19 PM)**Does this mean it is a minimum control (please see comment on paragraph 207). Should "is" be replaced with "should be"? | *Modified**The controls described are indeed minimum controls.**The verb “is” is maintained and “should” is excluded according to IPPC style.* |
|  | 210 | **Negative extraction control.** This control is used to monitor contamination during nucleic acid extraction. Extraction buffer can be used as a negative extraction control. It is recommended that multiple controls be included when large numbers of positive samples are processed. | C | *Category : SUBSTANTIVE***(338) European Union (26 Sep 2024 2:18 PM)**Should "can" be replaced with "may"? | *Incorporated* |
|  | 210 | **Negative extraction control.** This control is used to monitor contamination during nucleic acid extraction. ~~Extraction~~ An extraction buffer can be used as a negative extraction control. It is recommended that multiple controls should be included when large numbers of positive samples are processed. | P | *Category : EDITORIAL***(284) Kuwait (24 Sep 2024 7:51 AM)** | *Considered but not included**Not in line with IPPC style (use of verbs).* |
|  | 210 | **Negative extraction control.** This control is used to monitor contamination during nucleic acid extraction. Extraction buffer can be used as a negative extraction control. It is recommended that multiple controls be included when large numbers of positive samples are processed. | C | *Category : SUBSTANTIVE***(247) EPPO (17 Sep 2024 4:24 PM)**Should "can" be replaced with "may"? | *Incorporated* |
|  | 210 | **Negative extraction control.** This control is used to monitor contamination during nucleic acid extraction. Extraction buffer can be used as a negative extraction control. It is recommended that multiple controls be included when large numbers of positive samples are processed. | C | *Category : SUBSTANTIVE***(246) EPPO (17 Sep 2024 4:24 PM)**Does this mean it is a minimum control (please see comment on paragraph 207). Should "is" be replaced with "should be"? | *Modified**The controls described are indeed minimum controls.**The verb “is” is maintained and “should” is excluded according to IPPC style.* |
|  | 210 | Negative extraction control. This control is used to monitor contamination during nucleic acid extraction. Extraction buffer can be used as a negative extraction control. It is recommended that multiple controls be included when large numbers of positive samples are processed. | C | *Category : TECHNICAL***(11) COSAVE (15 Aug 2024 12:41 AM)**If we obtain a negative result in the sample, how do we know that the reaction works well or it’s just that we don’t have a “PCRable” sample or a good DNA quality? Maybe we should consider to add a DNA verification step (quality/concentration). Just thoughts. | *Considered but not included* |
|  | 216 | Isozymes are very useful for the identification of root-knot nematodes and are therefore usually included in the descriptions of new *Meloidogyne* species. In particular, the isozymes esterase (EST; EC 3.1.1.1) and malate dehydrogenase (MDH; EC 1.1.1.37) are commonly used for the identification of young egg-laying *Meloidogyne* females. This life stage is used because it has the highest protein content. The advantages of the isozyme electrophoresis method are that it is relatively simple, cheap and fast (within four hours, a complete run can be performed, including preparation and staining). It can also detect species mixtures easily when individual females are used. For most described *Meloidogyne* species, the isozymes patterns are available (see ~~Subbotin,~~ Subbotin *et al*.~~Palomares-Rius and Castillo~~, 2021). The disadvantage of this method is the need for young egg-laying females; this stage is not always available. It can be overcome by first culturing a particular *Meloidogyne* species, but this is time-consuming (taking 6 to 12 weeks). | P | *Category : EDITORIAL***(163) Japan (17 Sep 2024 1:06 PM)** | *Considered but not included**Not in line with IPPC style for references* |
|  | 216 | Isozymes are very useful for the identification of root-knot nematodes and are therefore usually included in the descriptions of new *Meloidogyne*species. In particular, the isozymes esterase (EST; EC 3.1.1.1) and malate dehydrogenase (MDH; EC 1.1.1.37) are commonly used for the identification of young egg-laying *Meloidogyne* females. This life stage is used because it has the highest protein content. The advantages of the isozyme electrophoresis method are that it is relatively simple, cheap and fast (within four hours, a complete run can be performed, including preparation and staining). It can also detect species mixtures easily when individual females are used. For most described *Meloidogyne*species, the isozymes patterns are available (see Subbotin, Palomares-Rius and Castillo, 2021). The disadvantage of this method is the need for young egg-laying females; this stage is not always available. It can be overcome by first culturing a particular *Meloidogyne* species, but this is time-consuming (taking 6 to 12 weeks). | C | *Category : TECHNICAL***(130) New Zealand (11 Sep 2024 1:17 AM)**reference is needed for this statement | *Incorporated**Reference added in the text: Subbotin, Palomares-Rius and Castillo, 2021* |
|  | 217 | The recommended method is from Esbenshade and Triantaphyllou (1985). This is a native polyacrylamide thin-slab gel electrophoresis method in a discontinuous buffer system. Several useful polyacrylamide electrophoresis systems are available, including systems with prefabricated gels and ~~mini gel~~ mini-gel tanks. Note that the PhastSystem, a partly automated micro gel electrophoresis apparatus, is no longer available (Karssen *et al.*, 1995).  | P | *Category : EDITORIAL***(285) Kuwait (24 Sep 2024 7:51 AM)** | *Incorporated* |
|  | 218 | For staining gels, it is recommended that one gel should be stained for EST activity and another for MDH, with staining solutions prepared according to Table 2. Staining solutions are added to each gel and the gel then incubated at 37 °C in the dark. The total staining times for EST and MDH are 60 min and 5 min, respectively. | P | *Category : EDITORIAL***(286) Kuwait (24 Sep 2024 7:52 AM)** | *Considered but not included**The current text was reviewed by the IPPC editor and in line with IPPC style* |
|  | 219 | The species-specific phenotype of *Meloidogyne javanica*, with relative mobility (Rm) values of 1.0, 1.25 and 1.4 (Figure 11), should be used as a standard control in each gel. The EST and MDH isozyme pattern for *M. mali* can be compared with the isozyme data of Carneiro *et al*. (2000), Esbenshade and Triantaphyllou (1985) and Subbotin, Palomares-Rius and Castillo (2021). *M. mali* has a weak single EST band, the VS1 type, as in Figure 11A (see Esbenshade and Triantaphyllou (1985) for the isozyme notations or types)), while the MDH H~~N1~~ 1 type (Figure 11B) is most common. ~~N1a~~ H1a and ~~N3~~H3 types have also been observed within *M. mali* (Ahmed *et al*., 2013; Figure 11B, lanes 10 and 11, respectively). Some variation in isozyme types is common in sexually reproducing organisms. | P | *Category : EDITORIAL***(341) European Union (26 Sep 2024 2:28 PM)** | *Incorporated* |
|  | 219 | The species-specific phenotype of *Meloidogyne javanica*, with relative mobility (Rm) values of 1.0, 1.25 and 1.4 (Figure 11), should be used as a standard control in each gel. The EST and MDH isozyme pattern for *M. mali* can be compared with the isozyme data of Carneiro *et al*. (2000), Esbenshade and Triantaphyllou (1985) and Subbotin, Palomares-Rius and Castillo (2021). *M. mali* has a weak single EST band, the VS1 type, as in Figure 11A (see Esbenshade and Triantaphyllou (1985) for the isozyme notations or types)), while the MDH N1 type (Figure 11B) is most common. N1a and N3 types have also been observed within *M. mali* (Ahmed *et al*., 2013; Figure 11B, lanes 10 and 11, respectively). Some variation in isozyme types is common in sexually reproducing organisms. | C | *Category : TECHNICAL***(340) European Union (26 Sep 2024 2:23 PM)**And what about lane 12 which looks like lanes 10 and 11? (Please see Figure 11B).Better to clarify the banding types here or in figure 11H1 = lanes 1-5, 8,9H1a = lanes 10 and 12H3 = lane 11 | *Modified**Core text anf figure 11B amended* |
|  | 219 | The species-specific phenotype of *Meloidogyne javanica*, with relative mobility (Rm) values of 1.0, 1.25 and 1.4 (Figure 11), should be used as a standard control in each gel. The EST and MDH isozyme pattern for *M. mali* can be compared with the isozyme data of Carneiro *et al*. (2000), Esbenshade and Triantaphyllou (1985) and Subbotin, Palomares-Rius and Castillo (2021). *M. mali* has a weak single EST band, the VS1 type, as in Figure 11A (see Esbenshade and Triantaphyllou (1985) for the isozyme notations or ~~types))~~types), while the MDH N1 type (Figure 11B) is most common. N1a and N3 types have also been observed within *M. mali* (Ahmed *et al*., 2013; Figure 11B, lanes 10 and 11, respectively). Some variation in isozyme types is common in sexually reproducing organisms. | P | *Category : EDITORIAL***(287) Kuwait (24 Sep 2024 7:52 AM)** | *Incorporated* |
|  | 219 | The species-specific phenotype of *Meloidogyne javanica*, with relative mobility (Rm) values of 1.0, 1.25 and 1.4 (Figure 11), should be used as a standard control in each gel. The EST and MDH isozyme pattern for *M. mali* can be compared with the isozyme data of Carneiro *et al*. (2000), Esbenshade and Triantaphyllou (1985) and ~~Subbotin~~Subbotin *et al*.~~,~~  (2021). *Meloidogyne* ~~Palomares-Rius and Castillo (2021).~~ *~~M.~~mali* has a weak single EST band, the VS1 type, as in Figure 11A (see Esbenshade and Triantaphyllou (1985) for the isozyme notations or types)), while the MDH N1 type (Figure 11B) is most common. N1a and N3 types have also been observed within *M. mali* (Ahmed *et al*., 2013; Figure 11B, lanes 10 and 11, respectively). Some variation in isozyme types is common in sexually reproducing organisms. | P | *Category : EDITORIAL***(164) Japan (17 Sep 2024 1:09 PM)** | *Modified**Suggested change for the reference not in line with IPPC style* |
|  | 219 | The species-specific phenotype of *Meloidogyne javanica*, with relative mobility (Rm) values of 1.0, 1.25 and 1.4 (Figure 11), should be used as a standard control in each gel. The EST and MDH isozyme pattern for *M. mali* can be compared with the isozyme data of Carneiro *et al*. (2000), Esbenshade and Triantaphyllou (1985) and Subbotin, Palomares-Rius and Castillo (2021). *M. mali* has a weak single EST band, the VS1 type, as in Figure 11A (see Esbenshade and Triantaphyllou (1985) for the isozyme notations or types)), while the MDH N1 type (Figure 11B) is most common. N1a and N3 types have also been observed within *M. mali* (Ahmed *et al*., 2013; Figure 11B, lanes 10 and 11, respectively). Some variation in isozyme types is common in sexually reproducing organisms. | C | *Category : TECHNICAL***(249) EPPO (17 Sep 2024 4:24 PM)**And what about lane 12 which looks like lanes 10 and 11? (Please see Figure 11B).Better to clearify the banding types or here or in figure 11H1 = lanes 1-5, 8,9H1a = lanes 10 and 12H3 = lane 11 | *Modified**Core text anf figure 11B amended* |
|  | 219 | The species-specific phenotype of *Meloidogyne javanica*, with relative mobility (Rm) values of 1.0, 1.25 and 1.4 (Figure 11), should be used as a standard control in each gel. The EST and MDH isozyme pattern for *M. mali* can be compared with the isozyme data of Carneiro *et al*. (2000), Esbenshade and Triantaphyllou (1985) and Subbotin, Palomares-Rius and Castillo (2021). *M. mali* has a weak single EST band, the VS1 type, as in Figure 11A (see Esbenshade and Triantaphyllou (1985) for the isozyme notations or types)), while the MDH H~~N1~~ 1 type (Figure 11B) is most common. ~~N1a~~ H1a and ~~N3~~H3 types have also been observed within *M. mali* (Ahmed *et al*., 2013; Figure 11B, lanes 10 and 11, respectively). Some variation in isozyme types is common in sexually reproducing organisms. | P | *Category : EDITORIAL***(248) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 219 | The species-specific phenotype of *Meloidogyne javanica*, with relative mobility (Rm) values of 1.0, 1.25 and 1.4 (Figure 11), should be used as a standard control in each gel. The EST and MDH isozyme pattern for *M. mali* can be compared with the isozyme data of Carneiro *et al*. (2000), Esbenshade and Triantaphyllou (1985) and Subbotin, Palomares-Rius and Castillo (2021). *M. mali* has a weak single EST band, the VS1 type, as in Figure 11A (see Esbenshade and Triantaphyllou (1985) for the isozyme notations or types)), while the MDH N1 type (Figure 11B) is most common. N1a and N3 types have also been observed within *M. mali* (Ahmed *et al*., 2013; Figure 11B, lanes 10 and 11, respectively). Some variation in isozyme types is common in sexually reproducing organisms. | C | *Category : TECHNICAL***(27) Colombia (15 Aug 2024 7:09 PM)**Provide recommendations on the interpretation of enzyme profiles to differentiate M. mali from other species | *Considered but not included**This technique should be performed by experienced oprators with this technique. IPPC diagnostic protocols do not include guidance on interpretation of electrophoresis.* |
|  | 246 | 5. Records | C | *Category : TECHNICAL***(28) Colombia (15 Aug 2024 7:09 PM)**It is suggested to include a flowchart for the diagnostic process for better visualization. | *Consider but not included**The inclusion of flowchart is restricted to complex diagnostic protocols where it can help. This is not the case here.* |
|  | 247 | Records and evidence should be retained as described in section 2.5 of ISPM 27 (*Diagnostic protocols for regulated pests*). In cases where other contracting parties may be affected by the results of the diagnosis, in particular in cases of non-compliance (ISPM 13 (*Guidelines for the notification of non-compliance and emergency action*)) and where *M. mali* is found in an area for the first time, records and evidence (including preserved biological material or permanent slides) should be kept for at least one year in a manner that ensures traceability. As isolated nematodes will deteriorate in water, ~~as~~ many specimens ~~as possible~~ should be preserved in an appropriate medium for future examination. For morphological evidence, critical features as outlined in the diagnostic keys should be drawn, photographed or filmed on video while fresh material is available, and relevant measurements should be included. For molecular analysis, DNA should also be preserved. DNA extracts and PCR amplification products should be kept at −20 °C. For biochemical analysis, pictures of gels should be kept. | P | *Category : EDITORIAL***(288) Kuwait (24 Sep 2024 7:53 AM)** | *Considered but not incorporated**The sentence underlined the need to store as much material as possible. The change suggested cancels this advice.* |
|  | 251 | The Netherlands Food and Consumer Product Safety Authority, Netherlands Institute for Vectors, Invasive plants and Plant Health (NVWA-NIVIP), Geertjesweg 15, 6706 EA Wageningen, Kingdom of the Netherlands (Gerrit Karssen~~National Plant Protection Organization (NPPO), Geertjesweg 15, 6706 EA Wageningen, Kingdom of the Netherlands (Gerrit Karssen~~; email: g.karssen@nvwa.nl).  | P | *Category : EDITORIAL***(342) European Union (26 Sep 2024 2:35 PM)** | *Incorporated* |
|  | 251 | The Netherlands Food and Consumer Product Safety Authority, Netherlands Institute for Vectors, Invasive plants and Plant Health (NVWA-NIVIP)~~National Plant Protection Organization (NPPO)~~, Geertjesweg 15, 6706 EA Wageningen, Kingdom of the Netherlands (Gerrit Karssen; email: g.karssen@nvwa.nl).  | P | *Category : EDITORIAL***(250) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 258 | The first draft of this protocol was written by Jianfeng Gu (Ningbo Inspection and Quarantine Science Technology Academy/Ningbo Customs Technology Center, China (see preceding section)), Gerrit Karssen ~~(NPPO~~(NVWA-NIVIP, ~~Kingdom of the~~ The Netherlands (see preceding section)), Thomas Prior (Fera Science Ltd., United Kingdom of Great Britain and Northern Ireland (see preceding section)), Fengcheng Sun (Canadian Food Inspection Agency, Canada (see preceding section)) and Trinh Thi Thu Thuy (MARD, Viet Nam (see preceding section)). The following experts provided comments that improved the quality of the protocol: Evelyn van Heese ~~(Netherlands Institute for Vectors~~(NVWA-NIVIP, ~~Invasive plants and Plant health (NIVIP), Kingdom of the~~ The Netherlands), Daniel Apolonio~~Aphorio~~  Silva de Oliveira ~~(Netherlands Food and Consumer Product Safety Authority (~~(NVWA-NIVIP, The Netherlands~~NVWA), Kingdom of the Netherlands~~) and Yiwu Fang (Technical Center of Ningbo Customs, China). | P | *Category : EDITORIAL***(343) European Union (26 Sep 2024 2:43 PM)** | *Incorporated* |
|  | 258 | The first draft of this protocol was written by Jianfeng Gu (Ningbo Inspection and Quarantine Science Technology Academy/Ningbo Customs Technology Center, China (see preceding section)), Gerrit Karssen ~~(NPPO~~(NVWA-NIVIP, ~~Kingdom of the~~ The Netherlands (see preceding section)), Thomas Prior (Fera Science Ltd., United Kingdom of Great Britain and Northern Ireland (see preceding section)), Fengcheng Sun (Canadian Food Inspection Agency, Canada (see preceding section)) and Trinh Thi Thu Thuy (MARD, Viet Nam (see preceding section)). The following experts provided comments that improved the quality of the protocol: Evelyn van Heese ~~(Netherlands Institute for Vectors~~(NVWA-NIVIP, ~~Invasive plants and Plant health (NIVIP), Kingdom of~~ the Netherlands), Daniel Apolonio Silva de Oliveira ~~Aphorio Silva de Oliveira~~ (NVWA-NIVIP, the Netherlands)~~(Netherlands Food~~  and ~~Consumer Product Safety Authority (~~Yiwu Fang (Technical Center of Ningbo Customs, China).~~NVWA), Kingdom of the Netherlands) and Yiwu Fang (Technical Center of Ningbo Customs, China).~~ | P | *Category : EDITORIAL***(251) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 262 | **Araya, M. & Caswell-Chen, E.P.** 1993. Enzymatic digestion of roots for the recovery of root-knot nematode developmental stages. *Journal of Nematology*, ~~25~~25(4): 590–595. https://journals.flvc.org/jon/article/view/66547 | P | *Category : EDITORIAL***(165) Japan (17 Sep 2024 1:10 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 263 | **Bonants, P., Edema, M. & Robert, V.** 2013. Q-bank, a database with information for identification of plant quarantine plant pest and diseases. *EPPO Bulletin*,~~43~~43(2): 211–215. https://doi.org/10.1111/epp.12030 | P | *Category : EDITORIAL***(166) Japan (17 Sep 2024 1:10 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 264 | **~~Brown, D.J.F., Dalmasso, A. & Trudgill, D.L.~~** ~~1993. Nematode pests of deciduous soft fruits and vines. In: K. Evans, D.L. Trudgill, J.M. Webster, eds.~~ *~~Plant parasitic nematodes in temperate agriculture~~*~~, pp. 427–462. Wallingford, UK, CABI.~~ | P | *Category : EDITORIAL***(167) Japan (17 Sep 2024 1:11 PM)** | *Incorporated**This reference is no longer cited in the diagnostic protocol.* |
|  | 266 | **Carneiro, R.M.D.G., Almeida, M.R.A. & Quénéhervé, P.** 2000. Enzyme phenotypes of *Meloidogyne* spp. populations. *Nematology*, ~~2~~2(6): 645–654. https://doi.org/10.1163/156854100509510 | P | *Category : EDITORIAL***(168) Japan (17 Sep 2024 1:11 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 267 | **EPPO (European and Mediterranean Plant Protection Organization)**. 2013. *~~Nematode extraction~~*Nematode extraction. PM 7/119(1). *EPPO Bulletin*, ~~43~~43(3): 471–495. https://doi.org/10.1111/epp.12077 | P | *Category : EDITORIAL***(169) Japan (17 Sep 2024 1:12 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 268 | **EPPO**. 2016. DNA barcoding as an identification tool for a number of regulated pests. PM 7/129(1). *EPPO Bulletin*, ~~46~~46(3): 501–537. https://doi.org/10.1111/epp.12344 | P | *Category : EDITORIAL***(170) Japan (17 Sep 2024 1:13 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 274 | **Esbenshade, P. R. & Triantaphyllou, A. C.** 1985. Use of enzyme phenotypes for identification of *Meloidogyne* species. *Journal of Nematology*, ~~17~~17(1): 6–20. https://journals.flvc.org/jon/article/view/65610 | P | *Category : EDITORIAL***(171) Japan (17 Sep 2024 1:14 PM)** | *Modified* |
|  | 275 | **Gu, J.F., Fang, Y. & Liu, L.** 2020. Morphological and molecular analysis of a *Meloidogyne mali* population with high intragenomic rRNA polymorphism. *Journal of Nematology*,52: e2020-105. https://doi.org/10.21307/jofnem-2020-105 | C | *Category : EDITORIAL***(344) European Union (26 Sep 2024 2:46 PM)**The page numbers are missing. | *Incorporated* |
|  | 275 | **Gu, J.F., Fang, Y. & Liu, L.** 2020. Morphological and molecular analysis of a *Meloidogyne mali* population with high intragenomic rRNA polymorphism. *Journal of Nematology*,52: e2020-105. https://doi.org/10.21307/jofnem-2020-105 | C | *Category : EDITORIAL***(252) EPPO (17 Sep 2024 4:24 PM)**The page numbers are missing. | *Incorporated* |
|  | 275 | **Gu, J.~~F.~~, Fang, Y. & Liu, L.** 2020. Morphological and molecular ~~analysis~~ analyses of a *Meloidogyne mali* population with high intragenomic rRNA polymorphism. *Journal of Nematology*,~~52~~52(1): e2020-105. https://doi.org/10.21307/jofnem-2020-105 | P | *Category : EDITORIAL***(172) Japan (17 Sep 2024 1:15 PM)** | *Modified* |
|  | 276 | **Gu, J., Fang, Y., Ma, X., Shao, B. & Zhuo, K.** 2023. *Meloidogyne paramali* n. sp. (Nematoda: Meloidogyninae) and first report of *M. marylandi* in maple and yacca tree from Japan. *Journal of Nematology*, 55(1). <https://doi.org/10.2478/jofnem-2022-0036> | C | *Category : EDITORIAL***(346) European Union (26 Sep 2024 2:49 PM)**Typo: Paragraph alignment to be fixed. | *To be fixed by the IPPC secretariat* |
|  | 276 | **Gu, J., Fang, Y., Ma, X., Shao, B. & Zhuo, K.** 2023. *Meloidogyne paramali* n. sp. (Nematoda: Meloidogyninae) and first report of *M. marylandi* in maple and yacca tree from Japan. *Journal of Nematology*, 55(1). https://doi.org/10.2478/jofnem-2022-0036 | C | *Category : EDITORIAL***(345) European Union (26 Sep 2024 2:46 PM)**The page numbers are missing. | *Incorporated* |
|  | 276 | **Gu, J., Fang, Y., Ma, X., Shao, B. & Zhuo, K.** 2023. *Meloidogyne paramali* n. sp. (Nematoda: Meloidogyninae) and first report of *M. marylandi* in maple and yacca tree from Japan. *Journal of Nematology*, 55(1). https://doi.org/10.2478/jofnem-2022-0036 | C | *Category : EDITORIAL***(254) EPPO (17 Sep 2024 4:24 PM)**The page numbers are missing. | *Incorporated* |
|  | 276 | **Gu, J., Fang, Y., Ma, X., Shao, B. & Zhuo, K.** 2023. *Meloidogyne paramali* n. sp. (Nematoda: Meloidogyninae) and first report of *M. marylandi* in maple and yacca tree from Japan. *Journal of Nematology*, 55(1). https://doi.org/10.2478/jofnem-2022-0036 | C | *Category : EDITORIAL***(253) EPPO (17 Sep 2024 4:24 PM)**Typo: Paragraph alignment to be fixed. | *To be fixed by the IPPC secretariat* |
|  | 277 | **Gu, J., Fang, Y., Schönfeld, U., Ma, X.~~X.~~ & ~~Xiaoling,~~ Lü. X.** 2021. *Bursaphelenchus parayongensis* n. sp. (Tylenchina: Aphelenchoididae) found in packaging wood from China. *Nematology*, 23(9): 1039–1051. https://doi.org/10.1163/15685411-bja10093 | P | *Category : EDITORIAL***(173) Japan (17 Sep 2024 1:17 PM)** | *Incorporated* |
|  | 278 | **Heybroek, H.M.** 1993. The Dutch elm breeding program. In: M.B. Sticklen & J.L. Sherald, eds. *Dutch elm disease research – Cellular and molecular approaches*, pp. 16–25. New York, USA, Springer–Verlag. ~~xii + 344 pp.~~ https://doi.org/10.1007/978-1-4615-6872-8\_3 | P | *Category : EDITORIAL***(174) Japan (17 Sep 2024 1:17 PM)** | *Modified**Total number of pages needed* |
|  | 279 | **Heydari, F. & Pedram, M.** 2020. Morphological and molecular characterization of *Ektaphelenchoides pini* (Massey, 1966) Baujard, 1984 (Aphelenchoididae; Ektaphelenchinae) from Iran, with morphological and taxonomic observations on some species. *Journal of Nematology*, ~~52~~52(1): ~~1–12 pp~~e2020-52 . https://doi.org/10.21307/jofnem-2020-052 | P | *Category : EDITORIAL***(175) Japan (17 Sep 2024 1:19 PM)** | *Incorporated* |
|  | 280 | **Holterman, M., Karssen, G., van den Elsen, S., van Megen, H., Bakker, J. & Helder, J.** 2009. Small subunit rDNA-based phylogeny of the Tylenchida sheds light on relationships among some high-impact plant-parasitic nematodes and the evolution of plant feeding. *Phytopathology*, ~~99~~99(3): 227–235. https://doi.org/10.1094/PHYTO-99-3-0227 | P | *Category : EDITORIAL***(176) Japan (17 Sep 2024 1:20 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 281 | **Inagaki, H.** 1978. Apple ~~root–knot nematode~~ root-knot nematode, *Meloidogyne mali*, its taxonomy, ecology, ~~damage~~ damage, and control. *Second Asian Regional Conference on root–knot nematodes*, *Thailand Kasetsart Journal*, ~~12,~~ 12(1): 25–30. https://li01.tci-thaijo.org/index.php/anres/article/view/240783 | P | *Category : EDITORIAL***(177) Japan (17 Sep 2024 1:21 PM)** | *Modified* |
|  | 282 | **Itoh, Y., Ohshima, Y. & Ichinohe, M.** 1969. A root-knot nematode, *Meloidogyne mali* n. sp. on apple-tree from Japan (Tylenchida: Heteroderidae). *Applied Entomology and Zoology*, ~~4~~4(4): 194–202. https://doi.org/10.1303/aez.4.194 | P | *Category : EDITORIAL***(178) Japan (17 Sep 2024 1:22 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 283 | **Janssen, T., Karssen, G., Topalović, O., Coyne, D. & Bert, W.** 2017. Integrative taxonomy of root-knot nematodes reveals multiple independent origins of mitotic parthenogenesis. *PLoS ONE*, ~~12~~12(3): e0172190. https://doi.org/10.1371/journal.pone.0172190 | P | *Category : EDITORIAL***(179) Japan (17 Sep 2024 1:22 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 285 | **Karssen, G., van Hoenselaar, T., Verkerk-Bakker, B. & Janssen, R.** 1995. Species identification of cyst and root-knot nematodes from potato by electrophoresis of individual females. *Electrophoresis*, ~~16~~16(1): 105–109. https://doi.org/10.1002/elps.1150160119 | P | *Category : EDITORIAL***(180) Japan (17 Sep 2024 1:22 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 287 | **Manzanilla-López, R.H~~. & Marbán-Mendoza, N~~.**~~, eds.~~  2012. *Methodology and symptomatology*. In: R.H. Manzanilla-López, & N. Marbán-Mendoza, eds. *Practical plant nematology*, pp. 89–129. Mexico, Biblioteca Básica de Agricultura.*~~Practical plant nematology~~*~~. Mexico, Biblioteca Básica de Agricultura, Grupo Mundi-Prensa, pp. 121–123. 883 pp.~~ | P | *Category : EDITORIAL***(182) Japan (17 Sep 2024 1:26 PM)** | *Modified* |
|  | 289 | **Palmisano, A. & Ambrogioni, L.** 2000. *Meloidogyne ulmi* sp. n., a root-knot nematode from elm. *Nematologia Mediterranea*, ~~28~~28(2): 279–293. https://journals.flvc.org/nemamedi/article/view/63531 | P | *Category : EDITORIAL***(181) Japan (17 Sep 2024 1:23 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 290 | **~~Sakurai~~ Sakurai, K., ~~Inagaki~~ Inagaki, H., ~~Yuhara~~ Yuhara, I. & Tsutsumi, ~~Tsutsumi~~ M**. 1973. Damage and control of the apple root-knot ~~nematode~~ nematode, *Meloidogyne mali* Itoh, Ohshima and ~~Ichinoe~~Ichinohe, ~~1969~~ 1969, on apple trees. Research bulletin of the *Hokkaido National Agricultural Experiment Station*, 105: 9–22.*~~Res. Bull. Hokkaido Natl. Agric. Exp. Stn~~*~~., no. 105.~~ | P | *Category : EDITORIAL***(183) Japan (17 Sep 2024 1:29 PM)****Manzanilla** | *Incorporated* |
|  | 292 | **Toida, Y.** 1991. Mulberry damages caused by a root-knot nematode, *Meloidogyne mali* indigenous to Japan. *Japan Agricultural Research Quarterly*, ~~24~~24(4): 300–305.https://www.jircas.go.jp/en/publication/jarq/24/4/300 | P | *Category : EDITORIAL***(184) Japan (17 Sep 2024 1:29 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 295 | 9. Figures | C | *Category : EDITORIAL***(370) China (29 Sep 2024 4:07 AM)**These figs. are indistinct. | *Incorporated* |
| 1. i
 | 298 | *Source:* ~~National Plant Protection Organization~~NVWA-NIVIP, ~~Kingdom of the~~ The Netherlands. | P | *Category : EDITORIAL***(347) European Union (26 Sep 2024 5:12 PM)** | *Incorporated* |
|  | 298 | *Source:* ~~National Plant Protection Organization~~NVWA-NIVIP, ~~Kingdom of~~ the Netherlands. | P | *Category : EDITORIAL***(255) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 301 | *Source:* Bas Steenks, ~~Kingdom of the~~ The Netherlands. | P | *Category : EDITORIAL***(348) European Union (26 Sep 2024 5:12 PM)** | *Considered but not incorporated**To be reviewed by the IPPC editor.* |
|  | 301 | *Source:* Bas Steenks, ~~Kingdom of the~~ The Netherlands. | P | *Category : EDITORIAL***(256) EPPO (17 Sep 2024 4:24 PM)** | *Considered but not incorporated**To be reviewed by the IPPC editor.* |
|  | 304 | **Figure 3.** *Meloidogyne mali*. (A)–(H) Second-stage (J2) juveniles: (A) body; (B) and (C) anterior region (lateral and dorsal, respectively); (D) metacorpus region; (E) lateral field; and (F–H) tails (lateral). (I–M) Females: (I), (J) and (L) anterior region; (K) stylet; and (M) body shape. | C | *Category : TECHNICAL***(185) Japan (17 Sep 2024 1:30 PM)**The resolution of the image in Figure 3 should be increased because the image is blurred. | *Incorporated* *Figures amended to higher resolution (Figures 3,4 and 6)* |
|  | 304 | **Figure 3.** *Meloidogyne mali*. ~~(A)–(H)~~ (A–H) Second-stage ~~(J2) juveniles~~juveniles (J2s): (A) body; (B) and (C) anterior region (lateral and ~~dorsal~~dorsoventral, respectively); (D) metacorpus region; (E) lateral field; and (F–H) tails (lateral). (I–M) Females: (I), (J) and (L) anterior region; (K) stylet; and (M) body shape. | P | *Category : EDITORIAL***(186) Japan (17 Sep 2024 1:31 PM)** | *Incorporated* |
|  | 304 | **Figure 3.***Meloidogyne mali*. (A)–(H) Second-stage (J2) juveniles: (A) body; (B) and (C) anterior region (lateral and dorsal, respectively); (D) metacorpus region; (E) lateral field; and (F–H) tails (lateral). (I–M) Females: (I), (J) and (L) anterior region; (K) stylet; and (M) body shape. | C | *Category : EDITORIAL***(45) China (16 Aug 2024 2:10 AM)**Those figs. are indistinct. Please make these FIGs clear and distinct. | *Incorporated* *Figures amended to higher resolution (Figures 3,4 and 6)* |
|  | 305 | *Source:* Itoh, Y., Ohshima, Y. & Ichinohe, M. 1969. A root-knot nematode, *Meloidogyne mali* n. sp. on apple-tree from Japan (Tylenchida: Heteroderidae). *Applied Entomology and Zoology*, ~~4~~4(4): 194–202. https://doi.org/10.1303/aez.4.194 | P | *Category : EDITORIAL***(187) Japan (17 Sep 2024 1:31 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 311 | **Figure 5.** ~~Light photomicrographs~~ Lighmicroscopic photographs of *Meloidogyne mali* male and female perineal patterns: (A) and (B) male anterior; (C) posterior region of male; (D) lateral field of male; and (E–H) perineal patterns of females. | P | *Category : EDITORIAL***(349) European Union (26 Sep 2024 5:13 PM)** | *Considered but not included**The current term is the correct one.* |
|  | 313 | *Source:* Jiangfeng Gu, China. | C | *Category : TECHNICAL***(83) United States of America (27 Aug 2024 4:46 PM)**(citation needed, a source for the figures if there is any) | *Incorporated**Courtesy of Dr Jiangfeng Gu, Ningbo Inspection and Quarantine Science Technology Academy/Ningbo Customs Technology Center, China.* |
|  | 316 | **Figure 6.** *Meloidogyne mali* males: (A) and (B) anterior region (lateral and dorsoventral, respectively); (C) ~~region of metacorpus~~metacorpus region; (D) lateral field; (E–G) tail regions (lateral, ventral, lateral, respectively); and (H) body. | P | *Category : EDITORIAL***(189) Japan (17 Sep 2024 1:33 PM)**For consistency with paragraph 304 | *Incorporated* |
|  | 316 | **Figure 6.** *Meloidogyne mali* males: (A) and (B) anterior region (lateral and dorsoventral, respectively); (C) region of metacorpus; (D) lateral field; (E–G) tail regions (lateral, ventral, lateral, respectively); and (H) body. | C | *Category : TECHNICAL***(188) Japan (17 Sep 2024 1:32 PM)**The resolution of the image in Figure 6 should be increased because the image is blurred. | *Incorporated* *Figures amended to higher resolution (Figures 3,4 and 6)* |
|  | 317 | *Source:* Itoh, Y., Ohshima, Y. & Ichinohe, M. 1969. A root-knot nematode, *Meloidogyne mali* n. sp. on apple-tree from Japan (Tylenchida: Heteroderidae). *Applied Entomology and Zoology*, ~~4~~4(4): 194–202. https://doi.org/10.1303/aez.4.194 | P | *Category : EDITORIAL***(190) Japan (17 Sep 2024 1:33 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 319 | **Figure 7.** ~~Light photomicrographs~~ Lightmicroscopic photographs of *Meloidogyne mali* second-stage juveniles: (A) habitus following heat relaxation; (B–D) anterior region; (E) metacorpus region; and (F–M) tail region. | P | *Category : EDITORIAL***(257) EPPO (17 Sep 2024 4:24 PM)** | *Considered but not included**The current term is the correct one.* |
|  | 321 | *Source:* Jianfeng Gu, China. | C | *Category : TECHNICAL***(84) United States of America (27 Aug 2024 4:47 PM)**(citation needed, a source for the figures if there is any) | *Incorporated**Courtesy of Dr Jiangfeng Gu, Ningbo Inspection and Quarantine Science Technology Academy/Ningbo Customs Technology Center, China.* |
|  | 324 | **Figure 8.** Second-stage juvenile tails of *Meloidogyne mali*, *Meloidogyne ardenensis*, *Meloidogyne camelliae,* *Meloidogyne suginamiensis*, *Meloidogyne paramali*~~,~~ ,*~~Meloidogyne suginamiensis~~* and *Meloidogyne vitis*. | P | *Category : EDITORIAL***(350) European Union (26 Sep 2024 5:17 PM)** | *Incorporated* |
|  | 324 | **Figure 8.** Second-stage juvenile tails of *Meloidogyne mali*, *~~Meloidogyne~~ M. ardenensis*, *~~Meloidogyne~~ M. camelliae,* *~~Meloidogyne paramali~~M.suginamiensis*, *~~Meloidogyne suginamiensis~~ M. paramali* and *~~Meloidogyne~~ M. vitis*. | P | *Category : TECHNICAL***(310) Japan (26 Sep 2024 4:44 AM)**Corrected order of names to correspond to Figure 8. | *Incorporated* |
|  | 324 | **Figure 8.** Second-stage juvenile tails of *Meloidogyne mali*, *Meloidogyne ardenensis*, *Meloidogyne camelliae,* *Meloidogyne ~~paramali~~suginamiensis, Meloidogyne paramali* ~~,~~ *~~Meloidogyne suginamiensis~~* and *Meloidogyne vitis*. | P | *Category : EDITORIAL***(258) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 327 | (1) Itoh, Y., Ohshima, Y. & Ichinohe, M. 1969. A root-knot nematode, *Meloidogyne mali* n. sp. on apple-tree from Japan (Tylenchida: Heteroderidae). *Applied Entomology and Zoology*, ~~4~~4(4): 194–202. https://doi.org/10.1303/aez.4.194 | P | *Category : EDITORIAL***(191) Japan (17 Sep 2024 1:34 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 328 | (2) de A. Santos, M.S.N. 1968. *Meloidogyne ardenensis* n. sp. (Nematoda: Heteroderidae), a new British species of root-knot nematode. *Nematologica (1967)* 13: 593–598. <https://doi.org/10.1163/187529267X00418> | C | *Category : EDITORIAL***(351) European Union (27 Sep 2024 10:54 AM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not included**The current text is in line with IPPC style format.* |
|  | 328 | (2) de A. Santos, M.S.N. 1968. *Meloidogyne ardenensis* n. sp. (Nematoda: Heteroderidae), a new British species of root-knot nematode. *Nematologica (1967)* 13: 593–598. https://doi.org/10.1163/187529267X00418 | C | *Category : EDITORIAL***(259) EPPO (17 Sep 2024 4:24 PM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not included**The current text is in line with IPPC style format.* |
|  | 328 | (2) de A. Santos, M.S.N. 1968. *Meloidogyne ardenensis* n. sp. (Nematoda: Heteroderidae), a new British species of root-knot nematode. *Nematologica (1967)* ~~13~~13(4): 593–598. https://doi.org/10.1163/187529267X00418 | P | *Category : EDITORIAL***(192) Japan (17 Sep 2024 1:34 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 329 | (3) Golden, A.M. 1979. Description of *Meloidogyne camelliae* n. sp. and *M. querciana* n. sp. (Nematoda: Meloidogynidae) with SEM and host-range observations. *Journal of Nematology*, 11: 175–189. <https://journals.flvc.org/jon/article/view/65150> | C | *Category : EDITORIAL***(352) European Union (27 Sep 2024 10:55 AM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not included**The current text is in line with IPPC style format.* |
|  | 329 | (3) Golden, A.M. 1979. Description of *Meloidogyne camelliae* n. sp. and *M. querciana* n. sp. (Nematoda: Meloidogynidae) with SEM and host-range observations. *Journal of Nematology*, 11: 175–189. https://journals.flvc.org/jon/article/view/65150 | C | *Category : EDITORIAL***(260) EPPO (17 Sep 2024 4:24 PM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not included**The current text is in line with IPPC style format.* |
|  | 329 | (3) Golden, A.M. 1979. Description of *Meloidogyne camelliae* n. sp. and *M. querciana* n. sp. (Nematoda: Meloidogynidae) with SEM and host-range observations. *Journal of Nematology*, ~~11~~11(2): 175–189. https://journals.flvc.org/jon/article/view/65150 | P | *Category : EDITORIAL***(193) Japan (17 Sep 2024 1:34 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 334 | picturebox.gif | C | *Category : TECHNICAL***(195) Japan (17 Sep 2024 1:38 PM)**The figure of M. mali in Figure 9 should be replaced by the figure of Itoh et al. (1969), the original description of M. mali. The figure of M. mali in Figure 9 is not from the original description of M. mali in Itoh et al. (1969), which is the source of the citation, but from the original description of M. ulmi in Palmisano and Ambrogioni (2000). If not replaced, the description in the cited reference in [338] should be corrected. | *Modified**Reference amended to Palmisano, A. & Ambrogioni, L. 2000. Meloidogyne ulmi sp. n., a root-knot nematode from elm. Nematologia Mediterranea, 28: 279–293.* [*https://journals.flvc.org/nemamedi/article/view/63531*](https://journals.flvc.org/nemamedi/article/view/63531) |
|  | 335 | **Figure 9.** Perineal patterns of *Meloidogyne mali, Meloidogyne ardensis, Meloidogyne camelliae,* *Meloidogyne suginamiensis*, *Meloidogyne paramali*~~,~~ *~~Meloidogyne suginamiensis~~* and *Meloidogyne vitis*. | P | *Category : EDITORIAL***(353) European Union (27 Sep 2024 10:58 AM)** | *Incorporated* |
|  | 335 | **Figure 9.** Perineal patterns of *Meloidogyne mali, ~~Meloidogyne~~ M. ardensis, ~~Meloidogyne~~ M. camelliae,* *~~Meloidogyne paramali~~M. suginamiensis, M. paramali* ~~,~~ *~~Meloidogyne suginamiensis~~* and *~~Meloidogyne~~ M. vitis*. | P | *Category : TECHNICAL***(194) Japan (17 Sep 2024 1:37 PM)**Corrected order of names to correspond to Figure 9. | *Incorporated* |
|  | 335 | **Figure 9.** Perineal patterns of *Meloidogyne mali, Meloidogyne ardensis, Meloidogyne camelliae,* *Meloidogyne ~~paramali~~suginamiensis, Meloidogyne paramali* ~~,~~ *~~Meloidogyne suginamiensis~~* and *Meloidogyne vitis*. | P | *Category : EDITORIAL***(261) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 336 | *Note:* Drawings 1, 2, ~~4 and~~ 4, 5 and 6 are not to the same scale as photo 3. | P | *Category : EDITORIAL***(262) EPPO (17 Sep 2024 4:24 PM)**? What about drawing 6? | *Modified**Wording amended to ‘Note: Drawings 1, 2, 4-6 and photo 3 are not to scale’ for consistency with other figures* |
|  | 336 | *Note:* Drawings 1, 2, 4 and 5 are not to the same scale as photo 3. | C | *Category : TECHNICAL***(196) Japan (17 Sep 2024 1:38 PM)**The scale of image 6 in Figure 9. is not stated. | *Modified**Wording amended to ‘Note: Drawings 1, 2, 4-6 and photo 3 are not to scale’ for consistency with other figures* |
|  | 338 | (1) Itoh, Y., Ohshima, Y. & Ichinohe, M. 1969. A root-knot nematode, *Meloidogyne mali* n. sp. on apple-tree from Japan (Tylenchida: Heteroderidae). *Applied Entomology and Zoology*, ~~4~~4(4): 194–202. https://doi.org/10.1303/aez.4.194 | P | *Category : EDITORIAL***(197) Japan (17 Sep 2024 1:39 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 339 | (2) de A. Santos, M.S.N. 1968. *Meloidogyne ardenensis* n. sp. (Nematoda: Heteroderidae), a new British species of root-knot nematode. *Nematologica (1967)* 13: 593–598. <https://doi.org/10.1163/187529267X00418> | C | *Category : EDITORIAL***(354) European Union (27 Sep 2024 10:58 AM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not included**The current text is in line with IPPC style format.* |
|  | 339 | (2) de A. Santos, M.S.N. 1968. *Meloidogyne ardenensis* n. sp. (Nematoda: Heteroderidae), a new British species of root-knot nematode. *Nematologica (1967)* 13: 593–598. https://doi.org/10.1163/187529267X00418 | C | *Category : EDITORIAL***(263) EPPO (17 Sep 2024 4:24 PM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not included**The current text is in line with IPPC style format.* |
|  | 339 | (2) de A. Santos, M.S.N. 1968. *Meloidogyne ardenensis* n. sp. (Nematoda: Heteroderidae), a new British species of root-knot nematode. *Nematologica (1967)* ~~13~~13(4): 593–598. https://doi.org/10.1163/187529267X00418 | P | *Category : EDITORIAL***(198) Japan (17 Sep 2024 1:39 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 340 | (3) Golden, A.M. 1979. Description of *Meloidogyne camelliae* n. sp. and *M. querciana* n. sp. (Nematoda: Meloidogynidae) with SEM and host-range observations. *Journal of Nematology*, 11: 175–189. <https://journals.flvc.org/jon/article/view/65150> | C | *Category : EDITORIAL***(355) European Union (27 Sep 2024 11:00 AM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not included**The current text is in line with IPPC style format.* |
|  | 340 | (3) Golden, A.M. 1979. Description of *Meloidogyne camelliae* n. sp. and *M. querciana* n. sp. (Nematoda: Meloidogynidae) with SEM and host-range observations. *Journal of Nematology*, 11: 175–189. https://journals.flvc.org/jon/article/view/65150 | C | *Category : EDITORIAL***(264) EPPO (17 Sep 2024 4:24 PM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not included**The current text is in line with IPPC style format.* |
|  | 340 | (3) Golden, A.M. 1979. Description of *Meloidogyne camelliae* n. sp. and *M. querciana* n. sp. (Nematoda: ~~Meloidogynidae)~~ Meloidogynidae), with SEM and host-range observations. *Journal of Nematology*, ~~11~~11(2): 175–189. https://journals.flvc.org/jon/article/view/65150 | P | *Category : EDITORIAL***(199) Japan (17 Sep 2024 1:40 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 341 | (4) Toida, Y. & Yaegashi, T. 1984. Description of *Meloidogyne suginamiensis* n. sp. (Nematoda: Meloidogynidae) from mulberry in Japan. *Japanese Journal of Nematology*, ~~12~~14: 49–57. | P | *Category : EDITORIAL***(200) Japan (17 Sep 2024 1:41 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 347 | **Figure 10.** Male head regions of *Meloidogyne mali*, *Meloidogyne ardenensis*, *Meloidogyne camelliae,* *Meloidogyne ~~paramali~~suginamiensis, Meloidogyne paramali and Meloidogyne vitis*~~,~~ *~~Meloidogyne suginamiensis and Meloidogyne vitis~~*. | P | *Category : EDITORIAL***(265) EPPO (17 Sep 2024 4:24 PM)** | *Incorporated* |
|  | 347 | **Figure 10.** Male head regions of *Meloidogyne mali*, *~~Meloidogyne~~ M. ardenensis*, *~~Meloidogyne~~ M. camelliae~~,~~**~~Meloidogyne paramali~~*, *~~Meloidogyne suginamiensis~~ M. suginamiensis, M. paramali and ~~Meloidogyne~~ M. vitis*. | P | *Category : TECHNICAL***(201) Japan (17 Sep 2024 1:43 PM)**Corrected order of names to correspond to Figure 10. | *Incorporated* |
|  | 350 | (1) Itoh, Y., Ohshima, Y. & Ichinohe, M. 1969. A root-knot nematode, *Meloidogyne mali* n. sp. on apple-tree from Japan (Tylenchida: Heteroderidae). *Applied Entomology and Zoology*, ~~4~~4(4): 194–202. https://doi.org/10.1303/aez.4.194 | P | *Category : EDITORIAL***(204) Japan (17 Sep 2024 1:44 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 351 | (2) de A. Santos, M.S.N. 1968. *Meloidogyne ardenensis* n. sp. (Nematoda: Heteroderidae), a new British species of root-knot nematode. *Nematologica (1967)* 13: 593–598. https://doi.org/10.1163/187529267X00418 | C | *Category : EDITORIAL***(266) EPPO (17 Sep 2024 4:24 PM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not included**The current text is in line with IPPC style format.* |
|  | 351 | (2) de A. Santos, M.S.N. 1968. *Meloidogyne ardenensis* n. sp. (Nematoda: Heteroderidae), a new British species of root-knot nematode. *Nematologica (1967)* ~~13~~13(4): 593–598. https://doi.org/10.1163/187529267X00418 | P | *Category : EDITORIAL***(205) Japan (17 Sep 2024 1:44 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 352 | (3) Golden, A.M. 1979. Description of *Meloidogyne camelliae* n. sp. and *M. querciana* n. sp. (Nematoda: Meloidogynidae) with SEM and host-range observations. *Journal of Nematology*, 11: 175–189. https://journals.flvc.org/jon/article/view/65150 | C | *Category : EDITORIAL***(267) EPPO (17 Sep 2024 4:24 PM)**Not listed in section 8 (References) because not mentioned in the core text of the standard but only in the legends of Table 1 and Figures 8 to 10. | *Considered but not included**The current text is in line with IPPC style format.* |
|  | 352 | (3) Golden, A.M. 1979. Description of *Meloidogyne camelliae* n. sp. and *M. querciana* n. sp. (Nematoda: ~~Meloidogynidae)~~ Meloidogynidae), with SEM and host-range observations. *Journal of Nematology*, ~~11~~11(2): 175–189. https://journals.flvc.org/jon/article/view/65150 | P | *Category : EDITORIAL***(206) Japan (17 Sep 2024 1:45 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 353 | (4) Toida, Y. & Yaegashi, T. 1984. Description of *Meloidogyne suginamiensis* n. sp. (Nematoda: Meloidogynidae) from mulberry in Japan. *Japanese Journal of Nematology*, ~~12~~14: 49–57. | P | *Category : EDITORIAL***(207) Japan (17 Sep 2024 1:45 PM)** | *Considered but not included**The IPPC style guide, says: “For journals, the volume number is always given. The issue number, given in parentheses, is optional.”* |
|  | 357 | picturebox.gif picturebox.gif | C | *Category : TECHNICAL***(356) European Union (27 Sep 2024 11:02 AM)**For lanes 10-11 and lane 12 of Figure 11B, please see the comment made on paragraph 219. | *Incorporated* |
|  | 357 | picturebox.gif picturebox.gif | C | *Category : TECHNICAL***(268) EPPO (17 Sep 2024 4:24 PM)**For lanes 10-11 and lane 12 of Figure 11B, please see the comment made on paragraph 219. | *Incorporated* |
|  | 357 | picturebox.gif picturebox.gif | C | *Category : EDITORIAL***(202) Japan (17 Sep 2024 1:44 PM)**Adjust the position of the images so that they are aligned vertically. | *Incorporated* |
|  | 358 | **Figure 11.** Esterase (A) and malate dehydrogenase (B) isozyme profiles of *Meloidogyne mali* (1–5 and 8–12) and the reference *Meloidogyne javanica* (6 and 7). | C | *Category : EDITORIAL***(203) Japan (17 Sep 2024 1:44 PM)**Adjust the position of the images so that they are aligned vertically. | *Incorporated* |
|  | 358 | **Figure 11.** Esterase (A) and malate dehydrogenase (B) isozyme profiles of *Meloidogyne mali* (1–5 and 8–12) and the reference *Meloidogyne javanica* (6 and 7). | C | *Category : EDITORIAL***(46) China (16 Aug 2024 2:12 AM)**Make two pictures in same size. Looks not such regular. | *Incorporated* |