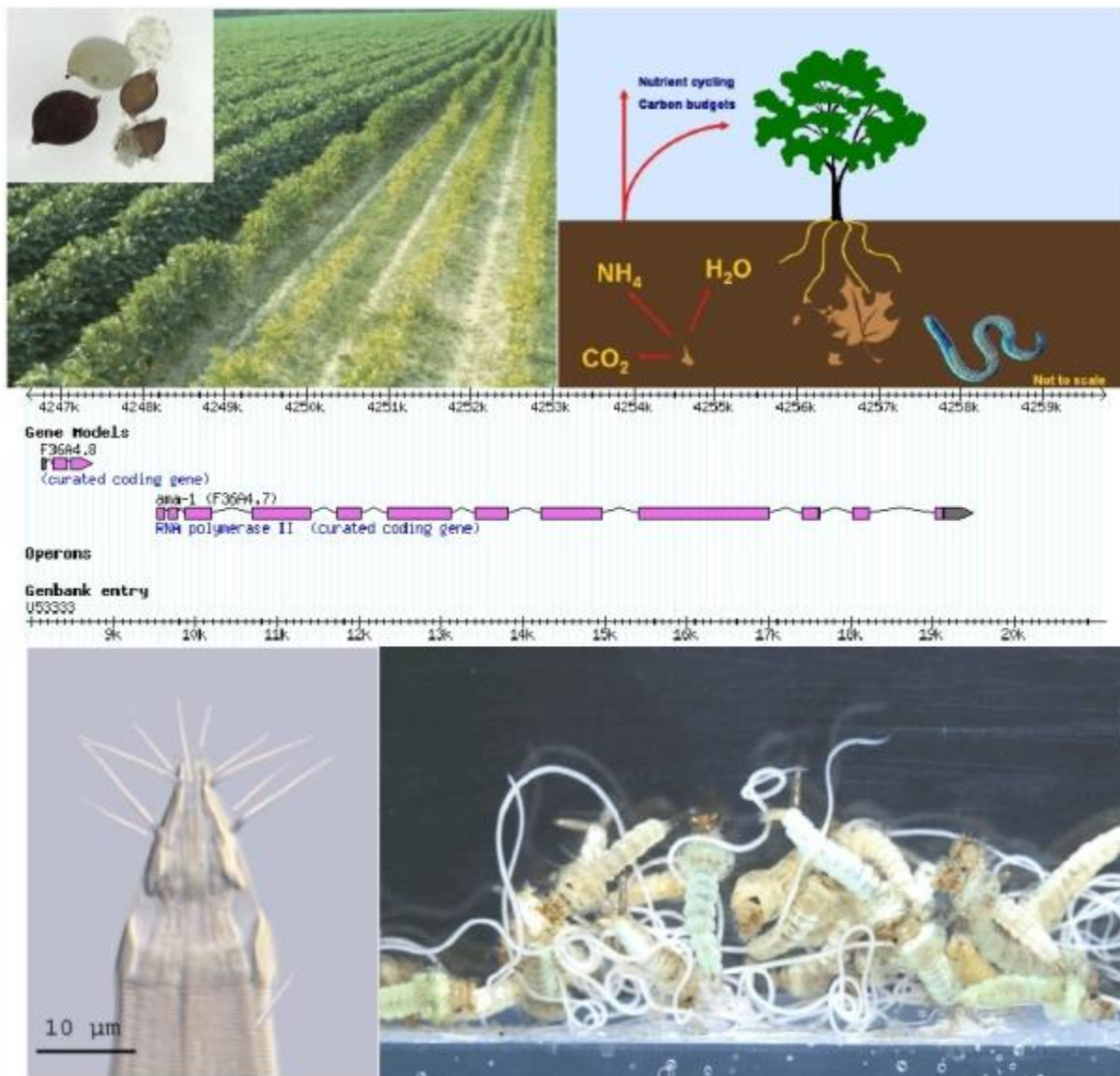


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The Journal of Nematology – Style Guide

(updated September 21, 2018)

The *Journal of Nematology* (ISSN 0022-300X; JON) is the official publication of the Society of Nematologists (SON) and publishes original papers on all aspects of basic, applied, descriptive, theoretical or experimental nematology. Other categories of papers include reviews, abstracts of papers presented at annual meetings, research notes, and special publications as appropriate. Authors are encouraged to consult the Editor-in-Chief (EiC) about submissions of special publications.



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1 **How do I submit a manuscript?**

2 By submitting a manuscript to JON, the authors attest that the manuscript has not been submitted
3 elsewhere and (if accepted) will not be published in whole or in part elsewhere without consent
4 of the JON Editorial Board. They also attest that all work contained is original and the
5 manuscript has been approved by all authors and implicitly or explicitly by the responsible
6 authorities where the work was carried out.

7 Research results submitted for publication should be reproducible. It is expected that critical
8 experiments have been repeated in time or space and statistically validated, as appropriate.

9 Routine surveys, for example of nematode distribution or of germplasm collections for
10 susceptibility to parasitic nematodes, are not acceptable unless they explicitly test or generate
11 hypotheses.

12 Final submissions should be MSWORD format for the manuscript and JPEG format for the
13 figures.

14 Manuscripts must be submitted to the JON via the Exeley platform powered by Editorial
15 Manager software at https://www.exeley.com/journal/journal_of_nematology

16

17 **Journal of Nematology Editorial Board**

18 The JON is administered by an editorial board composed of an Editor-in-Chief (EiC) and eleven
19 or more Editors. The EiC is appointed by the SON Executive Board and serves 1 year as Senior
20 Editor and 3 years as EiC. The EiC nominates Editors to serve 3-year terms on the Editorial
21 Board. As chair of the Editorial Board, the EiC is responsible for editorial policy and
22 coordination of all SON publications. The EiC serves as a member of the SON Executive
23 Committee, reports to the Executive Board, prepares an annual report for the Society describing
24 the Journal's status, makes recommendations for changes, and publishes minutes of the annual
25 Editorial Board meeting. Editors are responsible for reviewing and accepting manuscripts
26 submitted for publication and for recommending changes in editorial style and policies of the
27 Journal.

28 The primary responsibility of the Editorial Board is to ensure the overall quality and intellectual
29 content of JON. The Editorial Board strives to ensure that articles are clearly written,
30 unambiguous, and contain sound science of high quality.

31 **Page Charges**

32 There are currently no page charges for publication in the JON.

33

1 **Eprints**

2 Authors will receive an "eprint," which is an electronic copy of the manuscript as a PDF file.

3 **What is the format for JON?**

4 All manuscripts shall be in English with U.S. spelling conventions. There are no page
5 limitations, and no page charges for any publications in the JON.

6 A typical paper is composed of: a title page; abstract and keywords page; an introduction;
7 materials and methods; results; discussion; literature cited; and supporting tables and figures. For
8 short papers, results and discussion may be combined. Abstracts of papers presented at the
9 Annual Meeting of SON are published in the JON. Only those abstracts submitted through the
10 meeting web site will be accepted. Authors must follow the style guidelines and time deadlines
11 established by the meeting organizers. Other formats are permissible for invited articles. Authors
12 should discuss this with the EiC.

13

14 **Research Notes:** Should be in the same format as full length papers, but shorter in scope and
15 contain a maximum of 4500 words and two illustrations (tables/figures).

16

17 **Page Layout:**

18 All submissions should be formatted on US letter or A4 paper, with 1-inch (2.5 cm) margins.
19 Page numbers should be placed in the upper right-hand corner of each page, along with the first
20 author's surname and JON. Double space all manuscript contents, except the contact
21 (corresponding) author's name, address, phone number, fax number, and email address; these
22 should appear on the upper left-hand corner of the title page (single spaced). Pages should be line
23 numbered throughout. Continuous line numbering is a great convenience for editors and
24 reviewers.

25 Choose a font that is easily read; the font size should be 12 pt. Do not use hyphenation for
26 spacing or layout purposes. Do not use boldface type; if needed, boldface type will be marked by
27 the technical editor. Use italic font for Linnaean binomials or trinomials. Use italic font for
28 mathematical variables (x , y , etc.), but not constants (a , b , etc.). Although footnotes are used in
29 tables, they should not be used in the text sections.

30 In a typical manuscript, the primary (first level) headings are MATERIALS AND METHODS,
31 RESULTS, DISCUSSION and LITERATURE CITED. Note that the introduction does not have
32 a heading. The primary headings should be centered and be in all capitals (as indicated).
33 Headings at the next level consist of indented, italicized (or underlined) lowercase words,
34 forming a short phrase or sentence that terminates with a colon (also in italics). Avoid using long
35 subheadings; the best ones are less than one line when printed in JON. Words normally

1 italicized, such as species binomials, do not receive any special formatting (such as an extra
2 underline).

3 Technical Style:

4 In preparing a manuscript for JON, authors should endeavor to express their ideas in clearly
5 written English. Style conventions established by JON for Terminology, Abbreviations, and
6 Units of Measure should be followed.

7

8 Papers that consist of taxonomic descriptions such as new species descriptions must follow
9 specific formatting (see below under **Instructions for Taxonomic Descriptions**). For all other
10 papers, including the taxonomic authority after first mention of a species name is optional and
11 left at the discretion of the handling editor. Stating the taxonomic authority along with the year
12 of description should only be included if the taxonomic description is cited in the references.

13

14 **Title Page**

15 Place corresponding (contact) authors name, mailing address, phone and fax numbers, and e-mail
16 address in upper left corner, single spaced. Use double space for everything else in the
17 manuscript.

18 The next line is the title of the manuscript (in Title Case, centered, with no period at the end).
19 The title should use strong key words and be brief, preferably not more than 100 characters,
20 including spaces. Use scientific names for nematode species and do not include common names.
21 For other organisms, use either scientific or common names. When scientific names are used in
22 the title do not include the authorities. Do not append footnotes to the title.

23 The next line lists the authors, centered. Authors may spell out first names or use initials only.
24 Author affiliations are indicated by numbered footnotes and should be numbered in order of
25 appearance in the list of authors. If all authors have the same affiliation, it is not necessary to use
26 footnotes.

27 Insert a line and place the text: Received for publication.

28 The next line lists footnote(s) with author institutional affiliations(s) and current address (if not
29 the same). The titles of authors are optional (e.g., Graduate Assistant, Professor). Each address
30 should begin on a new line, indented. Non-US addresses should indicate country.

31 The next line, indented, lists acknowledgments (if any), including support for the project,
32 disclaimers and thanks to individuals.

- 1 The next line, indented, lists the email address of the corresponding author.
- 2 On the next line, indented, insert the following phrase: This paper was edited by
- 3 The next line, indented, contains a condensed running head. After the words Running Head,
 4 followed by a colon, provide a condensed title, also followed by a colon. Then give the last name
 5 of the first author in italics; both last names for two authors; et al. for more than two. The title
 6 and author names are limited to no more than 60 spaces.

7 **Abstract Page and Key Words**

8 **Abstract:**

9 The abstract page includes the abstract and the list of key words and begins with the indented
 10 subheading *Abstract*: Note that the colon is also italicized, like all colons in all JON
 11 subheadings. The abstract serves as the summary, written in past tense, one paragraph of no more
 12 than 1,300 spaces, and must be on a separate page, along with the key words. It should be self-
 13 explanatory and intelligible in itself and include the rationale for the study, objectives and topics
 14 covered, a brief description of methods, results, and conclusions. Do not include authorities for
 15 Linnaean binomials or trinomials, footnotes, statistical probability levels, or literature references.

16 **Key words:**

17 The list of key words begins with the indented subheading *Key words*: and includes those key
 18 words appearing in the title. Include words or short phrases that would be useful in index
 19 retrieval systems. Choose key words thoughtfully, as they are the sole basis of the JON annual
 20 subject index. List key words alphabetically. Most key words should be in the singular form.
 21 Include both the binomial and common name of nematodes and hosts, common names of
 22 pesticides, experimental techniques (e.g., electron microscopy, modeling, electrophoresis),
 23 specific subjects (e.g., soil temperature, suppression), and general subject areas.

24 One or more of these terms should be included in the key words list:

behavior	interaction
biochemistry	management
biological control	method
cell biology	molecular biology
cytology	morphology
detection	physiology

diagnosis	plant disease loss
ecology	regulatory
entomopathogenic nematode	resistance
etiology	systematics
genetics	taxonomy
genomics	technique
host-parasitic relationship	ultrastructure

1 **Introduction**

2 The intent of the Introduction is to place the research described in the manuscript into a broader
3 context and, with the obvious exception of a review article, is not intended to be a
4 comprehensive review of the field. Authors should expect the readership to have a general
5 understanding of nematology and nematological terms, but should explain specialist terms or
6 concepts. Authors should cite prior research from their own and other scientists (see Literature
7 Cited) to support their main contentions. Avoid statements and words such as “important,”
8 “interesting,” and “novel” that make value judgments on the work. Brevity is encouraged. The
9 Introduction should end with a statement of the overall and specific objectives of the research,
10 and should not recapitulate the results.

11 The Introduction begins on a separate page and does not have a heading. The first line of each
12 paragraph is indented. Subheadings would rarely be used in a typical research paper, but may be
13 appropriate in a review or other type of article.

14 **Materials and Methods**

15 The Materials and Methods section should provide sufficient detail to permit a skilled and
16 knowledgeable researcher to repeat the work. Standard techniques can simply be cited, even if
17 small modifications have been made. Authors are strongly encouraged to cite the primary
18 sources of methods, especially those published in JON. Style conventions established by JON for
19 terminology, abbreviations, and units of measure should be followed. Authors are encouraged to
20 consult the technical style glossary.

21 The Materials and Methods section begins directly after the Introduction (i.e., no page break),
22 under the heading Materials and Methods, in capitals, centered on the page. The first line of each
23 paragraph is indented and will frequently begin with a subheading.

24 **Results**

1 The main purpose of the Results section, written in the past tense (except for taxonomic papers),
2 is to provide narrative support for the Figures and Tables in which the actual results of the
3 experiments are reported. Results not displayed in a figure or table are presented in narrative
4 style. Literature citations are rare in the Results section, and neither materials and methods nor
5 discussion should be included. The combination of Results and Discussion is permitted and is
6 encouraged for short articles.

7 Results begins directly after Materials and Methods (i.e., no page break), under the heading
8 RESULTS, in capitals, centered on the page. The first line of each paragraph is indented, and
9 will frequently begin with a subheading.

10 **Discussion**

11 The Discussion should provide the authors interpretation of the data, in context with the state of
12 the art of the field presented in the Introduction, and also in light of the objectives listed in the
13 Introduction. Authors should arrive at some conclusions and not merely repeat what was stated
14 in the Results; the Discussion should ordinarily not refer to figures or tables, except perhaps to
15 present a model or hypothesis. The points emphasized in the Discussion should be in accord with
16 the title of the article. Authors are encouraged to be brief, to not over-interpret their findings, and
17 to make clear when views expressed are opinion or conjecture.

18 The Discussion begins directly after Results (i.e., no page break), under the heading
19 DISCUSSION, in capitals, centered on the page. The first line of each paragraph is indented and
20 would typically not include subheadings.

21 **Literature Cited**

22 Authors have an ethical responsibility to fairly and correctly attribute previous work by citation.
23 In most cases, it is preferable to cite the primary literature instead of a review. Authors should
24 make every effort to cite only articles that are readily available and are particularly encouraged
25 to cite work published in the JON.

26 **References in Text**

27 In the body of the manuscript, publications are cited using the name-year system, e.g., (Bird,
28 1996). In some instances, such as at the start of a sentence, or if the intent is to particularly stress
29 the cited author's contribution, only the date is in parentheses: e.g., "Bird (1996) showed that"
30 However, authors are encouraged to limit their use of this form of citation. To cite a publication
31 with two authors, list both: e.g., (Bird and Kaloshian, 2003); with three or more authors use et
32 al.: e.g., (Bird et al., 2003). Note the comma used after the author name(s) and the comma and
33 period after et al. When multiple citations are listed in parentheses, they are listed in
34 chronological order from oldest to most recent and separated by semicolons, for example,
35 (Zuckerman, 1980; Bird, 1996). If two or more cited papers are from the same year, list the
36 papers from that year alphabetically: e.g., (Bird, 2003; Bird and Kaloshian, 2003; Bird and
37 Opperman, 2003; Bird et al., 2003). For two or more articles by the same author(s) in the same
38 year use letters: e.g., (Houser, 1992a, 1992b). The same applies if two multiple-author citations

1 are from the same year: e.g., (Bird et al., 2003a, 2003b). Note that in these cases, the years are
2 separated by a comma rather than a semicolon. Some manuscripts are published by consortia and
3 do not list individual authors. In those cases, the name of the consortium should be considered to
4 be the author's name, e.g., (*C. elegans* Sequencing Consortium, 1998). On the rare occasions
5 where the author of a legitimate published work is truly undisclosed, use "Anonymous" as the
6 author's name.

7 Thus, a complex example that incorporates the aforementioned rules might be: (Zuckerman,
8 1980; Houser, 1992a, 1992b; Bird, 1996, *C. elegans* Sequencing Consortium, 1998; Bird, 2003;
9 Bird and Kaloshian, 2003; Bird and Opperman, 2003; Bird et al., 2003a, 2003b).

10 Manuscripts that are in preparation or have been submitted for publication but not yet accepted
11 should not be cited as references, either in the text or in Literature Cited. If authors wish to
12 mention such information, it can be listed parenthetically in the text as unpublished data
13 (abbreviated as "unpubl. data"). Making reference to unpublished material from sources other
14 than the authors requires documented permission from the source, which must accompany the
15 manuscript; an e-mail from the source of the information would normally suffice. Such personal
16 communications should be listed parenthetically in the text with the initials, last name and
17 affiliation of the communicator, e.g., (D. M. Bird, NCSU, pers. comm.).

18 **Reference List**

19 The major subheading LITERATURE CITED is capitalized and centered, and begins on a
20 separate page. List references alphabetically by authors' surnames. Alphabetical order is
21 determined by the first author's surname (family name) and then, if necessary, by surnames of
22 succeeding coauthors. When the author names are completely identical in two or more
23 references, these references are sequenced by publication date (earliest to latest) and, if
24 necessary, by the page numbers of articles published in the same journal. In rare instances where
25 different authors share the same surname, it may be necessary to also consider the alphabetical
26 order of the author initials. When citing multiple articles by the same author, list articles with one
27 author before those with several authors. When author(s) are the same for articles published in
28 the same year, use letters: e.g., 1987a, 1987b.

29 Each reference cited in the text (including figure legends, etc.) must be in the Literature Cited;
30 the converse also must apply. Each citation should be checked against the original publication.
31 Authors must pay precise attention to spelling, spacing, capitalization, indentation, and format in
32 their literature citations. The first line of each citation is indented.

33 Citing a journal article

34 For example:

35 Lohar, D. P., Schaff, J. E., Laskey, J. G., Kieber, J. J., Bilyeu, K. D., and Bird, D. McK.
36 2004. Cytokinins play opposite roles in lateral root formation, and nematode and rhizobial
37 symbioses. *The Plant Journal* 38:203-214.

1 In this example, note the following points:

2 1) All authors are listed (never use et al.) in the order in which they appeared in the original
3 publication, with the surname, followed by all initials. Note the comma after the surname,
4 periods and comma after initials, and space between initials.

5 2) The year given is the year of publication listed by the journal. In some cases this may differ
6 from the year in which the article was actually published. In case of an article in press, give the
7 best estimate of the year that the journal will list publication. Authors should be prepared to
8 supply the JON editorial board with documented proof that a manuscript claimed as “in press”
9 truly has been accepted.

10 3) The title should be given in sentence case. If the title contains a colon, the word after the colon
11 should begin with a capital letter, even if not done so in the original reference. Do not use a
12 capital letter after a dash.

13 4) Journal names must be spelled out in full. There is no period after the name of the journal.

14 5) The volume number is followed by a colon, and then the inclusive page numbers. Note the
15 lack of spacing. Generally the issue number within a volume is not given, but in rare cases in
16 which all issues of a journal begin with page 1, it may be required: e.g., Journal Name 34(4):78-
17 93. For “in press” articles, include as much information as is known (such as the volume
18 number). Page numbers can be added at the proof stage as they become known.

19 Citing a book

20 For example:

21 Thorne, G. 1961. Principals of nematology. New York: McGraw Hill.

22 In this example, note the following points:

23 1) The format for author (or editor) name(s), date, and title are the same for journal articles
24 (above).

25 2) List the place of publication, then the publisher. Do not use “Inc.” or “Ltd.” for a publisher,
26 and for publishers with multiple locations, list only one city.

27 3) The number of total pages is not listed.

28 Citing a book chapter.

29 For example:

1 Herman, R. K., and Horvitz, H. R. 1980. Genetic analysis of *Caenorhabditis elegans*. Pp.
2 227-261 in B. M. Zuckerman, ed. Nematodes as biological models, vol. 2. New York: Academic
3 Press.

4 In this example, note the following points:

5 1) The page range of the chapter is included, after the term “Pp.” and is followed by the word
6 “in” in italics.

7 2) The initials of the editor(s) come before the surname(s); note the spaces between initials.

8 3) Information about the volume (abbreviated “vol.”) or edition (“ed.”) number comes after the
9 name of the book.

10 Citing electronic sources.

11 In most instances, journals that are published only as electronic journals will have a bona fide
12 citation and can be cited like a normal publication. Articles that do not have a true citation
13 probably should not be cited. The Editor handling the manuscript (or EiC) can make format
14 recommendations for cases that don’t readily fit standardized JON rules. The following citation
15 is to an electronic-only journal:

16 Scholl, E. H., Thorne, J. L., McCarter, J. P., and Bird, D. McK. 2003. Horizontally
17 transferred genes in plant-parasitic nematodes: A high-throughput genomic approach. *Genome*
18 *Biology* 4:R39.1-R39.12.

19 Similarly, many electronic resources, such as an on-line database, have been published in
20 journals, and thus can be cited in the standard manner. For example, the widely used BLAST
21 tools can be cited as:

22 Altschul, S. F., Gish, W., Miller, W., Myers, E. W., and Lipman, D. J. 1990. Basic local
23 alignment search tool. *Journal of Molecular Biology* 215:403-410.

24 Another example of an on-line publication is WormBook, which is edited by a community rather
25 than a single person and has no city for the publisher. A Wormbook citation may be formatted
26 as:

27 Eisenmann, D. M. 2005. Wnt signaling. (June 25, 2005). The *C. elegans* Research Community,
28 ed. WormBook. doi/10.1895/wormbook.1.7.1, <http://www.wormbook.org>.

29 Information about the web sites actually queried (including the URL and date), or versions of
30 computer programs or databases used, should rightfully be included in the Materials and
31 Methods section.

32 Citing other sources.

1 Authors should cite only those articles that are readily available, and should minimize the
2 citation of theses, bulletins, company brochures and the like. Here are some examples of
3 formatting for those types of articles:

4 Anonymous. 1945. Article title. Washington, DC: EPA Publications.

5 Jones, B. T. 1980. Article title. *In* P. L. Bond, ed. Title of larger work. Serial Publication
6 23:23-34.

7 Jones, B. T. 1987. Dissertation title. M.S./Ph.D. dissertation (or thesis), University Name,
8 Place.

9 McDowell, R. I., Jr., Dewey III, F. R., and Resh, Jr., H.-T. 1985. Title. Publication and no.,
10 Name of Experiment Station, University (if needed), Place.

11 Teller, A. P., and Green, B. S. Title. Journal Name 28:561 (Abstr.).

12 **Tables**

13 Like graphs, tables report data from multiple measurements and are most appropriate when the
14 authors wish to show actual numerical values, to report data with no trends, or to present data
15 with certain statistical comparisons. In most instances, short tables (i.e., those with a small
16 number of cells) are to be avoided; those data are better reported as narrative in the Results. Each
17 table should be self-explanatory without reference to the text.

18 Tables are numbered consecutively with an Arabic numeral based on the order that they are first
19 mentioned in the text. The word Table is always spelled out in full. The rules for mentioning
20 Tables in the text are the same as those for mentioning figures. For example: Table 1; (Tables
21 1,2), (Tables 1-4). However, unlike figures, tables should not be grouped together to make
22 composites. Tables would typically not be mentioned in the Discussion.

23 The actual tables are presented immediately after the Literature Cited section, beginning on a
24 new page, under the heading TABLES (in capital letters and centered on the page). Each table is
25 on a separate page, but not a separate file (i.e., the tables are part of the text file for the
26 manuscript).

27 Each table begins with a descriptive title. This is written in paragraph style, with the first line
28 indented, and may be one or more sentences. Avoid inclusion of material in the table title or in
29 column captions that would be more appropriate in footnotes. Linnaean binomials should be
30 spelled out in full at first mention in the table title, or spelled out in a footnote if it must be
31 abbreviated in the actual table.

32 A printed Journal page is 174 mm x 240 mm, arranged as two 85 mm wide columns. Although
33 tables should be designed with these dimensions in mind, the actual tables will be type set by the
34 Journals printer so it is not necessary to scale them exactly. What is important, however, is that
35 the numbers and symbols in the columns be clearly and unambiguously assigned to that column.

1 For this reason, authors are strongly encouraged to use the table-making feature of your word
2 processor, rather than inserting spaces or tabs. Do not insert any vertical lines.

3 It is important to distinguish the major parts of the table. Insert a single line to separate: 1) the
4 table from the legend; 2) the table subheadings from each other; 3) subheadings from the body of
5 the table; 4) and the body of the table from the footnotes.

6 Footnotes are used when their information will not fit into the logical structure of the table and
7 the essential information is not readily available in the accompanying text. Superscript lowercase
8 letters, e.g., ^{a,b,c}, are preferred signs directing readers to the footnotes of a table. The assignment
9 of footnote letters to column headings is hierarchical from upper left to lower right. The first line
10 of each footnote is indented, and each footnote ends with a period. The symbols *, **, and ***
11 are reserved for statistical probability levels (do not use them as footnote symbols).

12 Authors should be thoughtful in the use of numerical values and units and should follow the
13 Units of Measure and the Technical Style Glossary guides. Use exponents as appropriate, and
14 round numbers to sensible values rather than expressing non-significant digits.

15 **Figures**

16 Good figures (graphs, line drawings, photographs, etc.) often are essential to create informative
17 manuscripts, and properly designed figures are typically more useful to the reader than any other
18 part of a paper. Poorly constructed figures, or those that convey little information, detract from
19 the articles effectiveness. Authors are required to use good ethical judgment in the preparation of
20 figures, particularly digital figures. Images must not be cropped or otherwise manipulated to
21 obscure, move, or introduce any element germane to interpretation of the data. Although certain
22 manipulations are acceptable, such as adjusting the brightness or color balance of an entire
23 image, nothing should be done to any part of an illustration that does not affect all other parts
24 equally. Exceptions to this policy (such as introducing false color to highlight a feature) are
25 permitted only if the full consequences of that manipulation are explicitly described.

26 Authors concerned about detail being lost within a specific part of a figure should alert the
27 editors and printer to this fact.

28 Figures are numbered consecutively with an Arabic numeral based on the order that they are first
29 mentioned in the text. The word Figure is spelled out in full at the start of a sentence or when
30 used outside parentheses in any sentence. Use the abbreviation Fig. or Figs. followed by the
31 number inside parentheses in the body of the text. For example: (Figs. 1,2), (Figs. 1-4). Where
32 several subfigures are grouped together to make a composite figure, the subfigures are labeled
33 with the figure number followed by a capital Roman letter (e.g., Fig. 1A). Each of the subfigures
34 should be mentioned in the text before the next numbered figure is introduced. For example, it
35 would be incorrect to mention Figure 3 before mentioning Figure 2D. There is no spacing
36 between the letters of subfigures. For example: (Fig. 1A,B), (Fig. 1A-C), (Figs.1A,B; 2A).
37 Figure (and Table) numbers should not be mentioned in the Discussion.

1 **Figure legends:** Each figure has a correspondingly numbered figure legend. Figure legends, with
2 their figures, should stand alone, i.e., not require a reading of the manuscript to comprehend the
3 figure. These are listed consecutively beginning on a new page entitled LEGENDS FOR
4 FIGURES. The abbreviation Fig. followed by the number begins the actual legend (e.g., Fig. 1).
5 Use a paragraph style for all figure legends in the same plate; indent the first line. All
6 abbreviations and symbols within a figure should be explained within the legend. Linnaean
7 binomials should be spelled out the first mention in figure legends.

8 **Figure submission:** Figures should be prepared as digital files and submitted with the text.
9 Figures may be submitted in various formats, providing that: 1) Initial submission may be in
10 various formats that are accessible to the reviewer (MSWord) but it is important to note that final
11 figures should be in JPEG format 2) the quality of the figures submitted for review purposes
12 must be sufficiently high as to permit suitable review. Authors should also be mindful of file
13 size. Exceptionally large files (>5 Mb) may have to be compressed for review in consideration of
14 editors and reviewers ability to manage your manuscript files. File names should include the
15 manuscript number, first author name, and the figure number. The resolution of these figures
16 should be at least 900 dpi for line art; half tone images (photographs) should be at least 300 dpi.

17 **Size:** Figures should be designed with the printed Journal page dimensions of 174 mm x 240
18 mm, arranged as two 85 mm wide columns in mind. Ideally, authors should exactly scale their
19 figures to either one-column or full-page width. If the figures submitted do not conform to these
20 dimensions, authors should indicate on the figure whether full-page width or one-column width
21 is desired. Figures should not be submitted smaller than the final size desired. Because it is
22 preferred that the figure legend be printed on the same page as the figure, authors should strive to
23 make the height less than 240 mm.

24 Whenever it makes logical sense to group them, illustrations, graphs, and photographs should be
25 combined and assembled into composite figures. Each subfigure, labeled A, B, C, etc., may be
26 arranged across the page, down a column, or assembled into a composite plate. Because
27 separation of subfigures by wide gutters attracts the readers eye to the empty space between the
28 subfigures instead of the illustration, it is important that subfigures should be assembled as close
29 to each other as possible without having them mistaken for a single figure.

30 **Labeling:** Lettering on illustrations should be of high contrast and at least 1 mm high at final
31 print size. The location and color (black or white) of the letters should ensure that they can easily
32 be read. The chosen font (ideally a sans-serif type such as Helvetica) and size (no smaller than 12
33 point) should be the same for all letters within a figure (except for italicized scientific names)
34 and for all figures within the same manuscript. Large letters and bold type can overwhelm the
35 data contained within a figure and are discouraged. Authors should pay attention to the effect
36 that digitally resizing subfigures might have on the lettering. Subfigures should be labeled with
37 uppercase A, B, etc., ideally in the upper left corner of the subfigure. Labels should be within the
38 logical border of the figure so as not to introduce excessive white space.

39 **Composite plates:** Halftone images, such as photographs (digital or otherwise) should be
40 combined and assembled into composite plates where possible. The size of each of the
41 subfigures may be different from each other, but each subfigure must be square or rectangular.

1 Each of the subfigures should be immediately adjacent to each other, without any white space;
2 the printer will insert a 1-mm hairline between each. The final composite plate should conform to
3 JON column- or page-width size.

4 **Magnification:** Size bars should be added to figures to indicate magnification when they are
5 appropriate. Because figure size may change during reproduction, numerical values of
6 reproduction (e.g., x100) may change during reproduction and therefore must not be used in
7 figures or in figure legends.

8 **Graphs:** Graphs are used to present relational data characterized by a pronounced trend; tables
9 are often more appropriate to report accurate numbers, report data with no trends, or present data
10 with certain statistical comparisons. If practical, all graphs within the same manuscript should
11 have the same size, format, scaling, and type style. Ideal graphs are slightly wider than they are
12 high, but this rule should not be followed if lack of clarity results.

13 Labels in graphs should clearly state what was measured and in what units; the units should be in
14 parentheses at the end of the label. Labels should be parallel to the axis, not perpendicular or
15 askew.

16 All four sides of a graph should form a square. Do not use X- or Y-axis grid lines for line or bar
17 graphs. All segments of all lines (including axes and tick marks) should be distinct, and error
18 bars should be easily readable. Tick marks along the axes should be used and should describe
19 real intervals instead of being merely decorative. Identify some (but not all) of the tick marks.
20 The axes should not extend beyond the range of data points and should not be thicker than the
21 data lines, which are the focal points of the graph and are ideally twice as wide as the axis lines.
22 The finest lines in a graph should be the error bars. Excessively heavy lines and letters will
23 become exaggerated in thickness when reduced and should be avoided. All lines must be
24 uniformly black.

25 Graphs within the same figure should be labeled A, B, etc. Linnaean binomials must be italicized.
26 All letters and symbols should be distinct when the graph is printed at final size. Any symbol used
27 within a graph to mark a data point should be one that is commonly typeset. Solid and hollow
28 circles, triangles, and squares are best. In addition, use different styles of lines as well as different
29 symbols for identifying different groupings of data. If space permits, lines may be defined within
30 the graph instead of the figure legend, but the graph should maintain an uncluttered appearance.

31 Shading in bar graphs is desirable and can be best achieved by setting different levels of gray
32 scale. If other patterns are needed, they should consist of solid black or line patterns rather than
33 stippled dots. Three-dimensional graphs are acceptable only if the Z-axis contains information.

34 **How will my manuscript be processed?**

35 All manuscripts are received by the EiC who assigns each to one of the Editors. The assigned
36 Editor is charged with overseeing the review process, communicating to the author(s) the
37 reviewers comments, deciding what revisions (if any) must be made to the manuscript, and

1 deciding if the manuscript is acceptable for publication in the JON. See Procedures and
2 Instructions for Editors below for complete details.

3 **Review of Manuscripts**

4 All manuscripts submitted to the JON are reviewed by at least two peer reviewers and an Editor.
5 Authors are encouraged to submit a list of up to six potential peer reviewers to assist the Editors.
6 Suggested reviewers should not have a conflict of interest (such as being a recent or current
7 collaborator, advisor/advisee, or member of the same institution) with any of the authors. They
8 also may request that certain individuals not review a manuscript. This review process assures
9 readers of the highest professional quality of articles published and ensures that all articles
10 satisfy the following questions:

- 11 1. Is the information new and significant? Is the work original?
- 12 2. Were the experiments well planned? Were adequate experimental techniques used?
- 13 3. Were the experiments repeated in time or space and is there demonstration of
14 reproducibility?
- 15 4. Is the discussion relevant, and are the conclusions justified by the data?
- 16 5. Is the writing clear, concise, and appropriately organized? Are there sections that should
17 be expanded, condensed, or deleted?
- 18 6. Are all the tables and figures of high quality and properly labeled? Do they materially aid
19 the text? They should not be too complex, repetitive of the text, or contain extraneous
20 material.
- 21 7. Is the form and style of the manuscript proper for the Journal? In particular, are the
22 literature citations presented correctly and all cited in the text?

23 Emphasis of reviewers should be on assessing the scientific merit of the work. You should
24 document and substantiate substantive criticisms. Keep in mind that a manuscript is a privileged
25 document. Protect it from exploitation, and endeavor to retain your anonymity. In particular, do
26 not discuss the manuscript with colleagues or the author(s), as your opinions may differ from
27 those of the other reviewer(s) and the Editor, and the author(s) may be misled by your
28 discussions.

29 Reviewers are given 2 to 3 weeks to review manuscripts before electronically submitting their
30 reviews and recommendations. The assigned Editor may also suggest revisions to the manuscript
31 to the author. Authors have 2 months to make revisions and return manuscripts to the assigned
32 Editor. A manuscript returned after 2 months may be considered as a new submission.

33 Revised manuscripts are accepted for publication by the assigned Editor who notifies the EiC
34 that revisions are complete, and the manuscript is ready for publication. The EiC then
35 coordinates preparation of page proofs with authors, the technical editor, and the printer.

36 **Page Proofs**

37 Proofs (including figure proofs) are sent to the corresponding author along with the Open Access
38 Agreement (.pdf). It is the responsibility of authors to carefully read the proofs and to return

1 them promptly to the Technical Editor (within 48 hours of receipt). Authors should answer all
2 questions from the printer and technical editor, which will be found on the proof cover sheet or
3 marked in the margins of the proofs.

4 **General Editing Procedures**

5 **Receipt and Transmission to Editors:** The Editor-in-Chief (EiC) receives all manuscripts, and
6 chooses an Editor based on the general topic. The chosen Editor will select two external
7 reviewers. If extensive corrections are required (e.g., to bring the manuscript into JON style),
8 manuscripts may be returned to the author for revision prior to being sent out for review.

9 **Receipt by Editors:** Upon receipt of a manuscript from the EiC, the Editor should read the
10 manuscript sufficiently thoroughly to select two suitable reviewers. In most instances, this read is
11 expected to be fairly quick, as at this point Editors are not attempting to judge the work presented
12 in the manuscript. If an Editor feels that a manuscript is far outside their area of expertise, they
13 should contact the EiC. Initial delays in processing manuscripts come from difficulties in
14 identifying willing reviewers. The identity of reviewers must remain confidential unless the
15 reviewer chooses to reveal their identity to the authors. Editors should ensure that any files
16 uploaded by reviewers do not contain any personal identification unless the reviewer chooses to
17 reveal their identity.

18 If after three weeks the Editor has not received a review, prompt the reviewer to submit their
19 reviews. If the reviewer does not respond to this prompt, then the manuscript should be
20 immediately forwarded to a new reviewer chosen by the Editor. If a reviewer has taken an
21 inordinately long time (more than six weeks), then the Editor can serve as the second reviewer,
22 but this procedure should be kept to a minimum. A complete list of reviewers and a log of the
23 performance and timeliness of the selected reviewers is maintained in the PeerTrack system.
24 Editors should not overburden particular reviewers, especially those who are exceptionally
25 efficient.

26 **Confidentiality**

27 Although the identity of the Editor is known to the authors, confidentiality of peer reviewers is
28 an established tradition in the JON review process and under no circumstances are the names of
29 reviewers to be given to authors or other reviewers. Do not inadvertently reveal identities in e-
30 mail address or 'cc' lines, for example. Because most manuscripts will be handled as electronic
31 files, reviewers often will use the 'Track Changes' feature of MS Word to "mark" the
32 manuscript. Reviewer instructions request that reviewers ensure that this feature is configured so
33 as not to reveal their identities; any revisions that do show identity should not be returned to the
34 author(s).

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5 that the authors of all articles published in the Journal under this Agreement will retain
6 copyright.

7

8 **Instructions for Taxonomic Descriptions**

9 **General Principles**

10 International code: Manuscripts proposing new species must conform to requirements of the
11 International Code of Zoological Nomenclature (<http://www.nhm.ac.uk/hosted-sites/iczn/code/>).

12 Taxonomic authority: With the first usage of the name of each taxonomic category, cite the
13 taxonomic authority and year of authorship for that name. Examples are as follows: *Meloidogyne*
14 *incognita* Kofoid and White, 1919; *Globodera pallida* Stone, 1973. In the case of changed
15 combinations, the original author should also be given, e.g., *Pristionchus maupasi* (Potts, 1910)
16 Paramonov, 1952. References for authorities should be included in the Literature Cited. The first
17 usage of a newly proposed species name should be acknowledged as in the following example:
18 *Meloidogyne incognita* n. sp. Additional newly proposed taxonomic categories should be
19 similarly acknowledged as in the following example: Heteroderidae n. fam.

20 General organization for taxonomic descriptions: The overall organization of the article is
21 recommended as follows:

22

23 **ABSTRACT**

24

25 **KEY WORDS**

26

27 **INTRODUCTION** (omit heading for this section)

- 28
- 29 • **Content:** Provide the taxonomic context and literature background relevant to the new
30 species. It is advisable to include some statement justifying the decision to designate a
31 new species.
 - 32 • **Etymology:** It is recommended that at the point of initial reference to a new species name
33 (often the Introduction), the etymology of the name be given. Typically this can be done
34 parenthetically or as a footnote. Alternatively, the etymology can be given as a footnote
35 in the Description: because the etymology is most suitably included in this section,
36 avoiding use of the binomial until this part of the manuscript would facilitate proper
introduction of the new name.

37 **MATERIALS AND METHODS**

- Conditions and practices for making measurements: To the extent required for repeatability, an explanation must be given of the conditions under which the measurements were taken (specimens live, heat relaxed, fixative). Where researchers might differ in their methods for taking a measurement (e.g., pharynx length or spicule length), it is helpful to specify the approach used in this particular publication.

DESCRIPTION

- Kinds of individuals represented: A holotype must be designated. Designation of an allotype (the opposite sex of the holotype) is no longer regulated by the ICZN and is therefore meaningless and should not be used, the specimen is just a paratype of the opposite sex of the holotype. After the single holotype has been labelled, any remaining specimens of the type series should be labelled as paratypes. With rare exceptions, descriptions must include females/hermaphrodites and, where available, males. Including juveniles, dauers, eggs, and additional stages is generally optional but may be required if they are pertinent to diagnostics (e.g., cysts, eggs or infective stages of some parasites).
- What to present about each kind: For each kind of individual, morphometrics are to be followed by a narrative description. Morphometrics are best presented in a table. Where it is necessary to use abbreviations in the table, define these abbreviations – this could be done in footnotes. What specific morphometrics and details of the description must be included will vary with the taxon and what is pertinent to diagnostics within that group. Contrary to previous JON requirements, it is preferred that the narrative be in a concise but not telegraphic style. Appropriate supporting figures should be referenced within the narrative.
- Numbers of specimens: With few exceptions (rare parasites or material from habitats of limited access), species descriptions should be based on a minimum of 10 females/hermaphrodites. Where available, males and any additional kind of individuals represented (see above) should be described from at least 10 individuals.
- Analysis of variance: The above should be presented with range, mean, and a statistical measurement of variability.
- Subheadings to use under “Description”:
 - Females or hermaphrodites (required)
 - Males (required if present)
 - Juveniles, eggs, additional stages (generally optional)
 - Molecular data (optional) - if included, data should at least be comparable to those of other species in the taxonomic group, if such data are available, so that species diagnoses can be supported by genetic or phylogenetic information.
 - Type locality and habitat (required) - generally the type locality needs to be presented in such a way that the precise location can be identified and revisited for future study. In this regard GPS coordinates are preferable but optional. In the case of parasites, the host and host tissue must be identified if possible.
 - Type designation and deposition (required) – it is required that type specimens be deposited in one or more curated, broadly accessible taxonomic collections. The number of specimens deposited at each site should be indicated, and it is helpful to include the accession numbers for the material.

- 1 ○ Biology and ecology (optional) – a description of distribution, ecological
2 associations or behaviors such as dormancy stages, feeding, or mating is helpful
3 and particularly so where these features are particular to certain species. In the
4 case of parasites, it is desirable to include information on host-parasite
5 relationships. Where possible, mating tests with putatively closely related species
6 can also strengthen hypotheses of species identities, although such tests are
7 optional and, by nature, subjective.
8 ○ Differential diagnosis (required) – a description of how the new species is
9 distinguished from other species must be presented. For conciseness, often the
10 narrative can be supplemented by a table showing comparisons.

11 DISCUSSION

- 12 • Typically the discussion places the significance of the findings in a broader context.
13 Generally it is appropriate to suggest hypotheses of relationships/phylogenetics.

14 LITERATURE CITED

15

16 FIGURES

- 17 • Illustrations of morphology (required): drawings should convey all the diagnostic features
18 of the species in the context of the entire organism.
19 • Light micrographs (optional): light micrographs of key features are highly recommended
20 as a supplement to illustrations. Through-focus video light microscopy can also provide a
21 useful supplement to illustrations and can be referenced online.
22 • Scanning electron micrographs (SEM) and other imaging tools (optional): SEM and other
23 imaging tools that contribute to species descriptions are encouraged.

24 Terminology

25 Biological nomenclature:

26 The genus and species of each organism must be identified by its Linnaean binomial, which
27 should be *italicized* and fully spelled out for each first use in text, figure captions and table titles.
28 As applicable, additional information may be included to identify authority, cultivar or varietal
29 names, breed, race, or accession number. If the word “cultivar” (or “cv.”) precedes the actual
30 cultivar name (e.g., soybean cv. Kirby, or the soybean cultivars were Forrest, Picket, and
31 Hartwig), the cultivar name is not bounded by quotation marks. Use single quotation marks if the
32 cultivar name immediately follows the botanical name (e.g., *Arachis hypogaea* ‘Florunner’).
33 Complete authorities and dates are required in taxonomic and systematic papers, but they would
34 be included at the editor’s discretion in other manuscripts. When new names of nematodes are
35 introduced, the recommendations of the *International Code of Zoological Nomenclature* (2000)
36 should be strictly applied, especially regarding type designation and statements indicating where
37 such type material is deposited. Although JON is available in print and is therefore deposited in
38 libraries, it is recommended that new Linnaean binomials be registered in ZooBank

1 (<http://zoobank.org>), as required by the International Commission on Zoological Nomenclature
2 for digital taxonomic publications.

3 If common names are used for nematodes, they should conform to the names listed below for
4 common names for plant-parasitic nematodes. Common crop names should not end in the letter
5 “s” (e.g., “oat” not “oats”), although the plural form is appropriate for seed of each crop (e.g.,
6 soybeans, peanuts). If commonly accepted model organisms are mentioned (e.g., *Arabidopsis*, *C.*
7 *elegans*, *Medicago*, etc.), it is correct not to italicize these names, as they are not intended to be
8 Linnaean binomials. However, as with all organisms mentioned in JON, the Linnaean binomial
9 must be spelled out at the first use (e.g., *Arabidopsis thaliana*, *Medicago truncatula*).

10 **Common Names for Nematodes**

11 JON requires that the full Linnaean binomial be given for all nematode species mentioned. But,
12 as long as it is explained, the use of common names, or even an abbreviation, is also permitted.
13 For example: *Meloidogyne* spp. (root-knot nematode: RKN). However, authors should be
14 judicious in using common names and only do so when it improves clarity to the wider
15 readership. There are several points to consider in electing to use a common name:

- 16 1. Is the common name likely to be recognized across or beyond the narrow discipline of
17 the paper? For example, home gardeners are likely to have heard of root-knot nematodes,
18 and soybean farmers will know about soybean cyst nematode. A similar case might be
19 made for dog heart worm (*Dirofilaria immitis*) or Guinea worm (*Dracunculus*
20 *medinensis*). But the same could probably not be said of *Romanomermis culicivorax* and
21 so, although likely known to many JON readers, assigning a common name to this
22 species would be discouraged.
- 23 2. Does using the common name convey some information that might not be readily
24 apparent from the binomial? For example, calling *Globodera* spp. “potato cyst nematode”
25 might help the flow of the writing if one were talking about host preference.
- 26 3. Is the common name ambiguous? Some names are applied to multiple genera (e.g.,
27 *Cactodera*, *Globodera* and *Heterodera* have all been called “cyst nematodes,” and
28 *Criconema* and *Criconemella* both have been called “ring nematode”). In some instances,
29 an author may intend the redundant term to be inclusive of the different species, but not
30 in other cases.
- 31 4. What is the precedent in using the common name? Although some generic common
32 names have little meaning or have only restricted application to a genus, long-standing
33 use has legitimized them (e.g., stunt nematode for *Tylenchorhynchus* spp.)

34 The coining of common names is permissible. Priority in providing a common name for a new
35 species rests with the describer. Suggested sources for the common name include: geographic
36 location for a species thought to have a restricted range (e.g., Columbia root-knot nematode for
37 *M. chitwoodi*); host plant (e.g., citrus nematode for *T. semipenetrans*); morphological character
38 (e.g., awl nematode for *Dolichodorus* spp.); specific symptom; or translation of the specific

1 epithet. However, as many nematodes are polyphagous, geographically widespread, or have no
2 symptomatic effects on plants, a rigid system is impossible to institute.

3 Listed below are “officially” designated common names for plant parasitic nematodes:

4 COMMON NAMES FOR PLANT-PARASITIC NEMATODES

5
6 Where two names are listed, the first name should be afforded priority.

- 7
8 *Anguina* spp.: seed and leaf gall nematodes, seed-gall nematodes
9 *A. agrostis* (Steinbuch) Filipjev: bentgrass nematode
10 *A. tritici* (Steinbuch) Filipjev: wheat cockle nematode, wheat gall nematode
11 *Aphelenchoides* spp.: bud and leaf nematodes, foliar nematodes
12 *A. arachidis* Bos: testa nematode
13 *A. besseyi* Christie: rice white tip nematode, strawberry bud nematode, summer crimp, summer
14 dwarf nematode
15 *A. fragariae* (Ritzema Bos) Christie: spring crimp nematode, spring dwarf nematode, strawberry
16 bud nematode
17 *A. ritzemabosi* (Schwartz) Steiner & Buhner: chrysanthemum nematode
18
19 *Belonolaimus* spp.: sting nematodes
20 *B. longicaudatus* Rau: sting nematode
21 *Bursaphelenchus cocophilus* (Cobb) Goodey: coconut palm nematode, red-ring nematode
22 *Bursaphelenchus xylophilus* (Steiner & Buhner) Nickle: pinewood nematode
23
24 *Cacopaurus pestis* Thorne: walnut nematode
25 *Cactodera* spp.: cyst nematodes
26 *C. cacti* (Fil. & Sch. Stek.) Krall & Krall: cactus cyst nematode
27 *C. weissii* (Steiner) Krall & Krall: knotweed cyst nematodes, smartweed cyst nematode
28 *Criconema* spp.: ring nematodes
29 *Criconemella* spp.: ring nematodes
30 *C. ornata* (Raski) Luc & Raski: peanut ring nematode
31 *C. xenoplax* (Raski) Luc & Raski: peach ring nematode
32
33 *Ditylenchus* spp.: stem and bulb nematodes
34 *D. destructor* Thorne: potato knot nematode
35 *D. dipsaci* (Kuhn) Filipjev: stem and bulb nematode, alfalfa stem nematode
36 *D. africanus* Wendt, Swart, Vrain & Webster: peanut pod nematode
37 *Dolichodorus* spp.: awl nematodes
38 *D. heterocephalus* Cobb: awl nematode
39
40 *Globodera* spp.: round-cyst nematodes
41 *G. pallida* (Stone) Behrens: white potato cyst nematode
42 *G. rostochiensis* (Wollenweber) Behrens: golden nematode, golden potato cyst nematode
43 *G. tabacum* (Lownsbery & Lownsbery) Behrens: tobacco cyst nematode

- 1 *G. virginiae* (Miller & Gray) Behrens: horsetail cyst nematode
- 2 *Gracilacus* spp.: pin nematodes
- 3
- 4 *Helicotylenchus* spp.: spiral nematodes
- 5 *H. dihystra* (Cobb) Sher: spiral nematode
- 6 *H. multicinctus* (Cobb) Golden: banana spiral nematode, Cobb???'s spiral nematode
- 7 *Hemicriconemoides* spp.: false-sheath nematodes
- 8 *Hemicycliophora* spp.: sheath nematodes
- 9 *H. arenaria* Raski: sheath nematode
- 10 *Heterodera* spp.: cyst nematodes
- 11 *H. avenae* Wollenweber: cereal cyst nematode, oat cyst nematode
- 12 *H. betulae* Hirschmann & Riggs: birch cyst nematode
- 13 *H. carotae* Jones: carrot cyst nematode
- 14 *H. cruciferae* Jones: cabbage cyst nematode
- 15 *H. cyperi* Golden, Rau & Cobb: nutgrass cyst nematode
- 16 *H. fici* Kirjanova: fig cyst nematode
- 17 *H. glycines* Ichinohe: soybean cyst nematode
- 18 *H. goettingiana* Liebscher: pea cyst nematode
- 19 *H. humuli* Filipjev: hop cyst nematode
- 20 *H. lespedezae* Golden & Cobb: lespedeza cyst nematode
- 21 *H. schachtii* Schmidt: sugarbeet cyst nematode
- 22 *H. trifolii* Goffart: clover cyst nematode
- 23 *H. zae* Koshy, Swarup & Sethi: corn cyst nematode
- 24 *Hirschmanniella oryzae* (van Breda de Haan) Luc & Goodey: rice root nematode
- 25 *Hoplolaimus* spp.: lance nematodes
- 26 *H. galeatus* (Cobb) Filipjev & Schuurmans Stekhoven: lance nematode
- 27 *H. columbus* Sher: Columbia lance nematode
- 28
- 29 *Longidorus* spp.: needle nematodes
- 30
- 31 *Meloidodera* spp.: cystoid nematodes
- 32 *M. charis* Hopper: mesquite cystoid nematode
- 33 *M. floridensis* Chitwood, Hannon & Esser: pine cyst nematode
- 34 *Meloidogyne* spp.: root-knot nematodes
- 35 *M. arenaria* (Neal) Chitwood: peanut root-knot nematodes
- 36 *M. camelliae* Golden: camellia root-knot nematode
- 37 *M. carolinesis* Eisenback: blueberry root-knot nematode
- 38 *M. chitwoodi* Golden, O'Bannon, Santo & Finley: Columbia root-knot nematode
- 39 *M. enterolobii* Uang & Eisenback: pacara earpod tree root-knot nematode
- 40 *M. exigua* Goeldi: coffee root-knot nematode
- 41 *M. graminis* (Sledge & Golden) Whitehead: grass root-knot nematode
- 42 *M. hispanica* Hirschmann: Seville root-knot nematode
- 43 *M. hapla* Chitwood: northern root-knot nematode
- 44 *M. incognita* (Kofoid & White) Chitwood: southern root-knot nematode
- 45 *M. javanica* (Treub) Chitwood: Javanese root-knot nematode
- 46 *M. konaensis* Eisenback, Bernard & Schmitt: Kona coffee root-knot nematode

- 1 *M. lusitanica* Abrantes & Santos: olive root-knot nematode
- 2 *M. megatyla* Baldwin & Sasser: pine root-knot nematode
- 3 *M. naasi* Franklin: barely root-knot nematode
- 4 *M. nataliei* Golden, Ross & Bird: Michigan grape root-knot nematode
- 5 *M. paranaensis* Carneiro, Carneiro, Abrantes & Almeida: Paraná coffee root-knot nematode
- 6 *M. partityla* Kleynhams: pecan root-knot nematode
- 7 *M. pini* Eisenback, Yang & Hartman: sand pine root-knot nematode
- 8 *M. platani* Hirschmann: sycamore root-knot nematode
- 9 *M. querciana* Golden: oak root-knot nematode
- 10 *M. suginamensis* Toida & Yaegashi: Suginami root-knot nematode
- 11 *M. thamesi* Chitwood: Thames? root-knot nematode
- 12 *Merlinius* spp.: stunt nematodes
- 13
- 14 *Nacobbus* spp.: false root-knot nematodes
- 15 *N. aberrans* (Thorne) Thorne & Allen: false root-knot nematode
- 16
- 17 *Orrina phyllobia* (Thorne) Brzeski: nightshade gall nematode
- 18
- 19 *Paratrichodorus* spp.: stubby-root nematode
- 20 *P. minor* (Colbran) Siddiqi: stubby-root nematode
- 21 *Paralongidorus* spp.: needle nematodes
- 22 *Paratylenchus* spp.: pin nematodes
- 23 *Pratylenchoides* spp.: false-burrowing nematodes
- 24 *Pratylenchus* spp.: lesion nematodes
- 25 *P. alleni* Ferris: Allen's lesion nematode
- 26 *P. brachyurus* (Godrey) Filipjev & Schuurmans Stekhoven: lesion nematode
- 27 *P. coffeae* (Zimmermann) Filipjev & Schuurmans Stekhoven: coffee lesion nematode
- 28 *P. penetrans* (Cobb) Filipjev & Schuurmans Stekhoven: lesion nematode, meadow nematode
- 29 *P. scribneri* Steiner: Scribner's lesion nematode
- 30 *P. thornei* Sher & Allen: Thorne's lesion nematode
- 31 *P. vulnus* Allen & Jensen: boxwood lesion nematode, walnut lesion nematode
- 32 *P. zaeae* Graham: corn lesion nematode
- 33 *Punctodera punctata* (Thorne) Mulvey & Stone: grass cyst nematode
- 34
- 35 *Radopholus* spp.: burrowing nematodes
- 36 *R. similis* Cobb: banana burrowing nematode, burrowing nematode
- 37 *Rotylenchulus* spp.: reniform nematodes
- 38 *R. reniformis* Linford & Oliveira: reniform nematode
- 39 *R. parvus* (Williams) Sher: reniform nematode
- 40 *Rotylenchus* spp.: spiral nematodes
- 41 *R. buxophilus* Golden: boxwood spiral nematode
- 42
- 43 *Scutellonema* spp.: spiral nematodes
- 44 *S. bradys* (Steiner & Lehew) Andrassy: yam spiral nematode
- 45 *Subanguina radicicola* (Greeff) Parmonov: grass root-gall nematode
- 46

- 1 *Trichodorus* spp.: stubby-root nematodes
- 2 *Tylenchorhynchus* spp.: stunt nematodes
- 3 *T. claytoni* Steiner: tobacco stunt nematode
- 4 *Tylenchulus semipenetrans* Cobb: citrus nematode
- 5
- 6 *Xiphinema* spp.: dagger nematodes
- 7 *X. americanum* Cobb: American dagger nematode
- 8 *X. chambersi* Thorne: Chambers’s dagger nematode
- 9

10 **Genetic nomenclature:**

11 Authors naming strains, genes, alleles, loci identified as DNA polymorphisms, and molecular
 12 clones should follow the guidelines specified in vol. 26, pp.138-143 of JON.

13 **Nematological phrases and terminology:**

14 A number of terms are used synonymously in the broader nematology literature, most notably
 15 juvenile and larva, hypodermis and epidermis, and pharynx and esophagus; an etymological and
 16 historical discussion of the use of these terms has been presented by Bird and Bird (1991). JON
 17 authors are free to choose which of these terms is most appropriate in their manuscript, providing
 18 they are consistent. The name of plant diseases caused by nematodes should not include the word
 19 disease (e.g., “red ring of palm” is preferred to “red ring disease;” “pinewilt” is preferred to
 20 “pinewilt disease”).

21 **Abbreviations**

22 Abbreviations should be used to improve the flow and clarity of the manuscript and those listed
 23 in the table below can be used in JON with no explanation. Units of measure should be used
 24 without explanation, but ensure that the correct abbreviation is used. Common Latin
 25 abbreviations (such as i.e., e.g., etc.) also may be used; NB, these are not italicized. The coining
 26 of abbreviations by authors is permissible, but it is preferred that authors keep this to a minimum.
 27 Coined abbreviations should be used more than twice in the manuscript. Spell out in full the
 28 word to be abbreviated at the first use and place the abbreviation in parentheses immediately
 29 afterwards. Use the abbreviation after that except at the beginning of a sentence, where the
 30 complete phrase must be written out. Do not add an s to make abbreviations plural; abbreviations
 31 are both singular and plural as written.

32

a.i.	active ingredient(s)
abstr.	abstract
bp	base pair(s)
cDNA	complimentary DNA

CFU	colony forming unit(s)
cv.	cultivar
d	day(s)
diam.	diameter
DNA	deoxyribonucleic acid
ed.	edition
EDTA	ethylenediaminetetraacetic acid
Eq.	equation
EST	expressed sequence tag(s)
Fig.	figure
<i>g</i>	gravity
ha	hectare(s)
hr	hour(s)
i.d.	inside diameter
IJ	infective juvenile(s)
J	juvenile(s)
J1, J2 etc	first stage juvenile(s), second stage juvenile(s), etc.
kb	kilobase pair(s)
L	Larva(e)
L1, L2, etc.	first stage larva(e), second stage larva(e), etc.
min	minute(s)
mon	month(s)
nt	nucleotide(s)
o.d.	outside diameter
PAGE	polyacrylamide gel electrophoresis
PCR	polymerase chain reaction
Pf	final nematode population density
Pi	initial/preplant nematode population density

Pm	midseason nematode population density
publ.	publication
Rf	reproduction factor
RFLP	restriction fragment length polymorphism
RNA	ribonucleic acid
rRNA	ribosomal RNA
RT-PCR	reverse transcription PCR
sec	second(s)
SSR	simple sequence repeat(s)
UV	ultraviolet
wk	week(s)
yr	year(s)

1 Units of measure

2 Use the metric system with decimal fractions and multipliers. Basic SI units (meter, kilogram,
3 etc) may be used, but use liter for volume and degrees Celsius (°C) for temperature. Specialized
4 units, such as S – Svedberg unit (for sedimentation coefficient) or E – Einstein (as a unit of light
5 irradiance) should be used where appropriate.

6 To express multiple units, different styles are permitted so as to maximize clarity in each
7 instance. To indicate division between two units, a solidus (“/”) should normally be used.
8 Examples include $\mu\text{g}/\text{ml}$ and m/s^2 . Where multiple units are used, it will sometimes be
9 appropriate to use “bullets” to indicate multiplication in units of measure. For example, light
10 intensity could be expressed $\mu\text{E}\cdot\text{s}^{-1}\cdot\text{m}^{-2}$. In other cases, using the common derived SI units will
11 be clearer. For example, use joule (J) instead of $\text{kg}\cdot\text{m}^2\cdot\text{s}^{-2}$.

12 Write out units that are not preceded by a number (e.g., the number of cysts per cubic centimeter
13 of soil increased with time). There are no plural forms for unit abbreviations, e.g., ml (not mls).

14 Spell out numbers at beginning of sentence (e.g., four milliliters) and if a number is not
15 specified, use “several” milliliters (i.e., spelled out, not abbreviated). Twenty-five milliliters was
16 (not “were”) added to the solution (because all 25 ml are dumped in at once - considered as an
17 entire unit of measurement).

18 Include a space between the numeral and the unit of measurement (e.g., 1.2 g, 3 ml, 1.2 g/liter).
19 There are several exceptions (e.g., g , °C - degrees Celsius, 16S).

1 **Common unit abbreviations:**

bp	base pair	cm	centimeter
d	day	<i>g</i>	gravity (note <i>italic</i>)
ha	hectare	g	gram
hr	hour	kb	kilobase
kg	kilogram	km	kilometer
liter	always spell out in full	ml	milliliter
m	meter	min	minute
mon	month	sec	second
wk	week	yr	year

2 $\log x$, $\log (x + 1)$, $\log_{10} x$ (note spacing). In text...“were transformed by $x^1 = \log_{10} (x + 1)$ before
 3 analysis,” “...were transformed by $\arcsin (\sqrt{x})$ before analysis” (not...“were log-transformed
 4 ($\log_{10} [x + 1]$) or \arcsin transformed”).

5 [^3H]leucine (no hyphen or space), sodium [$1\text{-}^{14}\text{C}$]acetate.

6 1.3×10^{-4} (*note spacing*)

7 **Decimal Fractions and Multiples:**

FRACTION	PREFIX	SYMBOL
10^{-1}	deci	d
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f
10^{-18}	atto	a
MULTIPLE	PREFIX	SYMBOL
10	deca	da
10^2	hecto	h

10^3	kilo	k
10^6	mega	M
10^9	giga	G
10^{12}	tera	T

1

2 ***Basic SI units:***

PHYSICAL QUANTITY	UNIT	SYMBOL
Length	meter	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Amount of substance	mole	mol
Luminous intensity	candela	cd

3

4 ***Common derived units:***

PHYSICAL QUANTITY	UNIT	SYMBOL
Frequency	hertz	Hz
Energy	joule	J
Force	newton	N
Pressure	pascal	Pa
Power	watt	W
Electric charge	coulomb	C
Electric potential difference	volt	V
Electric resistance	ohm	Ω
Electric conductance	siemens	S
Electric capacitance	farad	F
Magnetic flux	weber	Wb
Inductance	henry	H

Magnetic flux density (induction)	tesla	T
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1 **Technical Style Glossary**

2 **Apostrophes:** used to show possession, not to show plural form of abbreviations.

3 **Commas:** Serial commas should be used in lists, as in common American usage: “genetic,
4 morphometric, and behavioral...” instead of “genetic, morphometric and behavioral...”

5 **Dates:** 1992-95, June 1995, 15 June 1995.

6 **Degrees:** Ph.D., M.A., M.S., M.Sc.

7 **Enumeration:** Within text, use (i), (ii), (iii), (iv), etc., not 1), 2), 3), etc.

8 **Hyphens:** Used with compound adjective forms, including those with numbers:

9 2.5-cm-diam. core

10 5- to 10-cm deep

11 2-wk-old seedlings

12 60-kg weight

13 9- x 16-cm plastic pots

14 250-ml bottle

15 5-cm-diam. pots

16 (*use lowercase letters after hyphens*).

17 Other hyphenated words: degree-day, light-year

18 **Latin phrases not italicized:** in vivo, in vitro, sensu, per se, in situ.

19 **Light intensity units:** $\mu\text{mol}\cdot\text{s}^{-1}\cdot\text{m}^{-2}$ or $\mu\text{E}\cdot\text{s}^{-1}\cdot\text{m}^{-2}$

20 **Magnification:** x200 (note spacing and that x precedes magnification value. Use the
21 multiplication symbol or a sans serif (e.g., Helvetica letter x).

22 **Miscellaneous:** “As described previously” implies that the said information was described in a
23 previous paper and must be accompanied by a literature citation.

24 “Which” and “that” are often used incorrectly. *That* should be used as the relative pronoun
25 introducing a restrictive clause. *Which* should be used to introduce a nonrestrictive clause,
26 usually preceded by a comma (e.g., this is the nematode that I found yesterday. This nematode,
27 which I found yesterday, has not been identified.)

28 “Compared to” is used to show similarity (e.g., “You can compare my copy to the original”).

29 “Compared with” is used to show difference and similarity (e.g., “His work cannot compare with
30 mine.”)

- 1 “Was” and “were” - a total was, data were, either was.
- 2 Tris buffer
- 3 Gram stain
- 4 petri dish (lower case “p”)
- 5 gram positive
- 6 pipet
- 7 Parafilm
- 8 Molecular weight and daltons: The molecular weight of protein A is 74,000 (not 74,000 Da) or
9 the molecular mass of protein A is 74,000 Da. The term “molecular weight” is considered a
10 synonym for “relative molecular mass,” which is unitless. In some instances, the term amu
11 (atomic mass unit) may be appropriate.
- 12 **Nematicides:** Use generic names when available; otherwise use capitalized trade names
13 followed by their ingredient. Do not use trademark symbols. Nematicide doses should be
14 reported as amount of active or technical material applied per unit area (for field use) or
15 concentration for in vitro studies. The chemical formulation should be given and method of
16 application clearly stated.
- 17 **Nested parentheses:** Use ([]), except for taxonomic authorities, use (()).
- 18 **Numbers:** Spell out numbers lower than 10 except when used with units of measure; use
19 numerals for 10 and above (e.g., two plants, 10 plants, 4 ha, 10 ha, twofold, 10-fold). An
20 exception to this rule is a number at the beginning of a sentence, which is always spelled out. If
21 numbers are spelled out, the unit of measure should also be spelled out (“Fifteen percent” at
22 beginning of sentences).
- 23 Use % with numbers, “percentage” without numbers, for example: 13%, but use the word
24 “percentage” when there is no number, e.g., a smaller percentage; 32%, 43%, and 56%. Use
25 “between 3% and 5%,” “from 3% to 5%.” Note: A range of percentage is expressed with the
26 symbol [%] following each value to eliminate any ambiguity as to whether the first number
27 represents simply a number or a percentage; also note closed-up space between the number and
28 % symbol.
- 29 Fifteen percent of the samples were contaminated (note the plural verb “were”; the subject of the
30 sentence is not singular “percent” but the implied “fifteen samples of 100 samples”). But,
31 “Fifteen percent was contaminated.”
- 32 Use commas in numbers of four digits or more (1,000 and 1,000,000).

- 1 Do not use the symbol # as an abbreviation for number; abbreviate “no.” in tables or figures, or
2 in rare instances in text.
- 3 The words “number,” “total,” as well as actual numerical quantities and fractions take either
4 singular or plural verbs according to their meaning. For example, “The number of complaints has
5 been increasing,” “A number of changes have been made.”
- 6 When discussing quantities in technical writing, use “more than” rather than “over.” For
7 example, “A total of more than 16 species was isolated...”
- 8 When numbers are less than one, a zero should precede the decimal marker, e.g., 0.3, not .3.
9 When using \pm , do not enclose in parentheses, e.g., 34.2 ± 0.3 , not $34.2(\pm 0.3)$.
- 10 **Operator signs and spacing:** = word, = 2, < 12, + 1 SE, \pm 400.
- 11 Solidus (slash) – The main use of the solidus “/” is as a symbol for the mathematical operation of
12 division. Do not use as a substitute for the comma, hyphen, or full expression. Use “per” without
13 numbers-numerals (e.g., “a few eggs per gram”) and “/” with numerals (e.g., 0.18 kg/ha).
- 14 **Proprietary materials and apparatuses:** Follow the proprietary name with the manufacturer’s
15 name and address in parentheses (city and state or city and country outside the United States),
16 e.g., QIAquick (Qiagen Inc., Valencia, CA) PCR Purification kit.
- 17 **Quotation marks:** Commas or periods go inside quotation marks, except for the names of
18 cultivars, in which case any comma or period would always be outside single quotations, e.g.,
19 *Lycopersicon esculentum* ‘Rutgers’.
- 20 **Ranges:** Use the connecting word “to” rather than a hyphen, e.g., 21°C to 28°C. If the range is
21 given in parenthesis or in a table, use a short dash.
- 22 **Restriction endonucleases:** Eco RI, Bam I, Hind III, Sau 3A (note spacing and lack of
23 italicization).
- 24 **Single words:** cheesecloth, germplasm, preemergence, postemergence, preincubated, pretreated,
25 nonspecific, nonparasitic. Use “nontreated,” “noninoculated,” and “noninfected” (note the prefix
26 non- is not hyphenated when combined with most words).
- 27 **Soil identification and types:** All soils should be identified according to the U.S. soil taxonomic
28 system the first time each soil is mentioned. Give the series name in addition to the family name.
29 See: *National Soil Taxonomy Handbook* (U.S. Department of Agriculture, 1982-1986) and in
30 *Keys to Soil Taxonomy* (Soil Management Support Services, 1985).
- 31 (x% sand, y% silt, z% clay; n% organic matter; pH a.b). Note semicolons. x + y + z must equal
32 100.

1 **Spelling:** Spelling should conform to American usage, as preferred in *Webster's Third New*
2 *International Dictionary* (Merriam-Webster). Use American English and spelling except for
3 titles in literature citations, where the originally published spelling should be followed.

4 **Statistics:** Do not cite a reference for commonly used experimental designs, such as completely
5 randomized, randomized block, and split-plot designs, or simple procedures such as *t* tests. For
6 little-used statistical methods, designs, or analyses, cite an appropriate and accessible reference.
7 If computer software programs are used, they should be treated as proprietary material or
8 apparatus. Give the manufacture or developer name with location within the text body (in
9 parentheses). This includes SAS software. Do not list SAS software in the Literature Cited
10 section.

11 The achieved significance level for statistical tests (e.g., $P \leq 0.05$, $P \leq 0.001$; or $P > 0.05$, $P >$
12 1.10) should be given in parentheses after the comparison (generally end of clause or end of
13 sentence): ($P \leq 0.05$) ($P > 0.05$) (*note spacing*).

14 The asterisk symbols *, **, and *** are used to show significance at $P \leq 0.05$, 0.01 and 0.001
15 probability levels, respectively.

16 Student's *t*-test, *U*-test, k-ratio, *F*-test.

17 Some abbreviations commonly used in statistics and denotation of those to be typeset in italics:

\bar{x}	Arithmetic mean
χ^2	Chi-square
<i>r</i>	Correlation coefficient
R^2	Coefficient of multiple determination
r^2	Coefficient of simple determination
CV	Coefficient of variation
df	Degrees of freedom
LSD	Least significant difference
<i>R</i>	Multiple correlation coefficient
NS	Not significant
α	Probability of type I error
β	Probability of type II error
<i>b</i>	Regression coefficient
<i>n</i>	Sample size
SE	Standard error of mean
SD	Standard deviation of sample
<i>t</i>	Student's <i>t</i>
s^2	Sample variance

<i>F</i>	Variance ratio
<i>P</i>	Probability

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