INVASIVE PLANT SCIENCE AND MANAGEMENT - INSTRUCTIONS FOR AUTHORS

Journal Scope

Invasive Plant Science and Management (IPSM) is an online peer-reviewed journal focusing on fundamental and applied research on invasive plant biology, ecology, management, and restoration of invaded non-crop areas, and on other aspects relevant to invasive species, including educational activities and policy issues. Topics include the biology and ecology of invasive plants in rangeland, prairie, pasture, wildland, forestry, riparian, wetland, aquatic, recreational, rights-of-ways, and other non-crop (parks, preserves, natural areas) settings; genetics of invasive plants; social, ecological, and economic impacts of invasive plants and their management; design, efficacy, and integration of control tools; land restoration and rehabilitation; effects of management on soil, air, water, and wildlife; education, extension, and outreach methods and resources; technology and product reports; mapping and remote sensing, inventory and monitoring; technology transfer tools; case study reports; and regulatory issues.

Types of Articles

Manuscripts must contain original material constituting logical units of subject matter, and must contribute to the advancement of knowledge. Acceptance is made with the understanding that the substance of the manuscript has not been and will not be published elsewhere other than as an abstract, thesis or dissertation, or as a preliminary report to agencies, land managers, or cooperators. Most experiments, particularly those involving invasive plant control, should be repeated in time or space and must provide confirming results. Progress reports, non-replicated experiments, and simple observational information are not acceptable. Visual estimates of percentage invasive plant control and of non-target plant injury are acceptable in efficacy studies and in support of objective measurements of response.

a. ***Research and Education.*** Original articles concerning research, teaching, extension, industry, consulting, regulation, and equipment are encouraged. Research articles and nontraditional reports such as surveys and new educational programs from extension and teaching are also welcomed. Research papers should include a short summary of management implications (see below).

b. ***Case Studies.*** Case studies are original articles on topics that describe and document highly focused invasive plant management, restoration or rapid response projects. These typically encompass completed projects, or progress of long-term projects, and include critical components such as program organizational structures, technologies, technology-transfer, evaluation criteria, quality assurance/quality control and implementation of adaptive management. Case studies are expected to contain critical evaluations of the project and recommendations for improvements, particularly in the context of similar or related invasive plants and habitats. Case studies will also be peer-reviewed and should contain original material not published elsewhere other than as an abstract or as a preliminary report to agencies, land managers, or cooperators. Case studies should include well-developed discussions that provide instructive information on invasive plant management or restoration of infested plant communities. Such articles should focus on a specific study, and should include an abstract, introduction with a brief overview of the

problem or hypothesis tested and its relevance, a description of the site, materials and methods, results, discussion of the practical applications for land managers, and literature cited. Although it is not expected that case studies will be repeated in time or space, data collected should be robust enough for statistical evaluation.

c. ***Invited Reviews.*** *IPSM* also welcomes concise review articles that synthesize current information and appeal to a broad audience. Authors should contact the editor to discuss the proposed article. Once received by the journal Editor, the article will be reviewed and edited as a regular submission.

d. ***Symposium Papers.*** Proceedings of WSSA and other symposia on invasive plants may be published in *IPSM*, normally within one year of the symposium. Symposium organizers should contact the Editor within one month after the symposium to discuss a timeframe for manuscript submission and the expected number of papers. Symposium authors must submit manuscripts promptly for review to allow publication by a predetermined date. An Associate Editor will be assigned to work with the authors on paper submittal.

e. ***Notes and Commentary.*** These submissions can include short descriptions of new research methods or equipment, and some surveys. Commentaries generally cover topical issues related to invasive plant science and management and are understood to represent the opinion(s) of author(s), but also must include appropriate citations and references to published sources. Submissions are expected to stimulate constructive discussions, responses by other authors, and thoughtful examinations of the topic addressed.

f. ***Invasion Alert*** consists of brief communications that document new invasive plant introductions, significant range extensions (e.g., new habitats or regions of the country or world), or new relevant taxonomic information. New invasions and range extensions should consist of a significant population or plants with potentially high impact, and not a single plant or very small low impact population. Papers can be either short research papers or non-experimental notes. Both formats should contain an abstract and supporting citations. Notes and papers should also contain a short introduction to species including conditions associated with presence and impacts, likelihood of persistence and/or spread (if known), previous distribution in native and non-native range, and relevant taxonomic information. Indicate on the left-hand upper corner of the paper the region of the United States (West, North Central, South or Northeast) or country (other than the US) where the invasive was found or the study was conducted. Good color photos or line drawings of the invasive plant should accompany both notes and papers.

- Research papers (text) on new invasions should not be over six pages long double spaced and should contain an abstract, materials and methods, as well as a results and discussion section.
- For publication of a note (and if relevant to the research papers), all reported invasive plants must have a cited voucher specimen that is properly identified (including who made the determination and the date) and stored in a public herbarium at a university or governmental agency. The herbarium sheet number, including all information on the label, must be included in the note along with herbarium designation or *Index*

Herbariorum acronym(s) as designated by Holmgren and Holmgren (1998). For example: Voucher specimens: **U.S.A. MISSISSIPPI. Issaquena Co.:** Ca. 5 air mi NE of Mayersville at jct. of Grace Road and Steele Bayou, 30 Oct 2006, *Bryson 21940* (DOV, SWSL, VSC).

All **Invasion Alert** papers will be peer-reviewed. To expedite the dissemination of this information, reviewed **Invasion Alert** notes and papers will be published immediately online and in the next issue following their acceptance. In addition, they will be included on open access to facilitate wider distribution.

g. ***The Forum.*** *IPSM* will publish short papers in a section referred to as "The Forum" which includes short letters, opinions, book reviews, and responses or rebuttals to published papers in *IPSM* or other journals. Topics should be of broad interest or concern to the readership of the journal. Papers submitted in The Forum section will be reviewed and edited to conform to style by the Editor and an Associate Editor, if appropriate, but submissions are not considered peer-reviewed papers. The Editor reserves the right to reject any submissions deemed unsuitable for publication. Forum papers cannot contain new data previously unpublished in a peer-reviewed journal. Maximum length of The Forum papers is 1000 words, with no more than seven references. A table or figure may be appropriate, depending on the subject, but is typically discouraged.

Authorship

All individuals listed as author or co-authors must meet the following criteria:

1. They made substantial contributions to the conception and design of experiments; acquisition of data, and/or analysis and interpretation of the data.
2. They drafted the article and/or revised it critically for important intellectual content.
3. They approved the final version of the article to be published.

Contributions by individuals who do not meet all the above criteria for authorship should be recognized in the Acknowledgements section. The corresponding author must confirm that the author list is complete, that all co-authors have agreed to be included in the author list, and that all co-authors have read and agreed to submit the manuscript.

ORCID

IPSM now requires that all corresponding authors identify themselves using their ORCID iD when submitting a manuscript to the journal. ORCID is a unique identifier for researchers that increases the discoverability of your publications and provides a place to store and share validated information about your research activities. If you do not already have an ORCID iD, you can register for one directly from your user account on Editorial Manager or via https://orcid.org/register. Please provide this iD when submitting a manuscript, either by linking it to your Editorial Manager account or supplying it during submission by using the "Link to ORCID record" button.

Publication Charges
Authors are asked to pay a portion of publication costs. These costs for *IPSM* are currently $65 per final composed page plus an additional processing charge of $55 per manuscript if none of the authors are WSSA members. Exceptions can be made by the Editor ***but must be requested when the manuscript is first submitted.*** There is no additional charge for publishing color figures or images included in the manuscript.

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Manuscript Submission
Manuscript submissions to *IPSM* should be uploaded at http://www.editorialmanager.com/ipsm/.
For information on formatting figures and other image files for submission, see https://www.cambridge.org/core/services/authors/journals/journals-artwork-guide.
IPSM now publishes Accepted Manuscripts (AM) online 3-5 days after acceptance, allowing authors to make their work available to read and cite much more quickly. When submitting manuscripts (particularly upon revision), include the manuscript, tables, and figures all merged into a single Word file (do not include any Supplementary files). In the event of acceptance, this file will be posted as an Accepted Manuscript on Cambridge Core prior to FirstView publication. Please make sure the manuscript is formatted exactly as it should appear in the AM version. The Accepted Manuscript will eventually be replaced with the final copy-edited and typeset Version of Record. Authors wishing to opt out of Accepted Manuscript publication must contact the Editorial Office (wssa@cambridge.org) before acceptance or no later than 24 hours after acceptance.

Manuscript Review

All manuscripts submitted to *IPSM* are screened for plagiarized content using iThenticate software and are reviewed for suitability by the journal Editor before being assigned to an Associate Editor. The Associate Editor coordinates review of the manuscript for content and presentation by two or more anonymous reviewers, and communicates with the corresponding author concerning manuscript revisions. Final acceptance or rejection is the prerogative of the Editor.

Manuscript Style
For a detailed guide, see *Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers* 8e, *Council of Science Editors (2014)* http://www.scientificstyleandformat.org. See also published articles in recent issues of *IPSM* as guides to proper style.

Manuscript Format
Double-space everything, including pages with tables, figure legends, footnotes, and references. Include line numbers in your manuscript: lines should be numbered consecutively throughout the entire document. Indent paragraphs.

Scientific Names
Give scientific names in full (without authority) in the paper title, in the headings of sections and tables, in figure captions, and at the beginning of sentences. Refer to https://plants.usda.gov/ for approved scientific names for weeds. Use italic font for genera and species names. Provide complete scientific names (with authority abbreviated as is customary, e.g., Japanese honeysuckle, *Lonicera japonicum* Thunb.) of plants, animals, and microorganisms when first mentioned in the abstract. If the author wishes to provide synonyms for common names and Latin binomials, these can be placed in the keyword section. See http://theplantlist.org/ for an authoritative list of synonyms.

At the first mention in the text of a plant or animal, give its common name (if any) followed by the approved scientific name with the authority abbreviated enclosed in parentheses, or in brackets when parentheses occur within the binomial [e.g., garlic mustard [*Alliaria petiolata* (Bieb.) Cavare & Grandel]. Thereafter use the abbreviated scientific name throughout the text (e.g., *A. petiolata*), except for crops, where the common name (e.g., wheat) may be used. For the scientific and common names of crops, refer to *Standardized Plant Names*, 2nd edition, prepared for the Joint Committee on Horticultural Nomenclature and the International Code of Nomenclature for Cultivated Plants whenever a more recent, authoritative taxonomic reference is not available.

Manuscript Order
Manuscripts should be in the following order: **Short title** for running footer, **Title** (no separate title page), **Author(s), Abstract**, **Key Words, Management Implications** (see below), **Introduction** (begin on a new page), **Materials and Methods, Results and Discussion**, **Acknowledgments, References** (begin on a new page), **Tables** (begin on a new page), and **Figure Legends** (begin on a new page) and **Figures.**

Title

The title page includes a ***short title*** for the running footer that is not to exceed 30 characters and spaces. The full title should be no more than 200 characters and spaces, centered, in bold, sentence case, and should include words useful in online searches. Give scientific names in full (without authority) in the title, with genera and species names italicized. Use only the common name of crops. Use only common name or code numbers of herbicides.

Authors

Place the names of the authors—with first initials only capitalized, and with "and" before the last author—centered two lines below the title, Provide the full name of each author (first, middle initial [optional], and last) and include a numbered superscript for each author. In the footnote, give the affiliation(s) of the authors and full institutional job titles at the time the study was conducted, followed by the institutional address(es). Spell out names of institutions in full. Inclusion of current addresses (if different) is optional, and they should be listed at the end. Addresses of U.S. authors should include the two-letter postal abbreviation for the state and the ZIP code. E-mail and full mailing address of the corresponding author should be included. E-mail and full mailing address of the corresponding author should be included. We require all corresponding authors to identify themselves using ORCID when submitting a manuscript to the journal. Please visit this page for more information and to register. ORCID identifiers are encouraged for all coauthors, and should be included parenthetically after the job title.

Example of an author listing and address footnote:

Vipan Kumar [1], Joel Felix[2], Don Morishita[3] and Prashant Jha[4]

[1]Postdoctoral Research Associate, Montana State University, Southern Agricultural Research Center, Huntley, MT, USA; [2]Associate Professor, Oregon State University, Malheur Agricultural Experiment Station, Ontario, OR, USA; [3]Professor, University of Idaho, Kimberly Research and Extension Center, Kimberly, ID, USA; and [4]Associate Professor (ORCID 0000-000x-xxxx-xxxx), Montana State University, Southern Agricultural Research Center, Huntley, MT, USA. Author for correspondence: Prashant Jha, Associate Professor, Montana State University, Southern Agricultural Research Center, 748 Railroad Highway, Huntley, MT, 59037. (E-mail: pjha@montana.edu)

Abstract

Place the abstract on the same page as the title and authors. The text of the abstract should not exceed 300 words. It must be written as a single paragraph and should provide an objective and informative digest of the significant content of the paper, not simply a description of the contents. Use complete scientific names with abbreviated authority in the body of the abstract for plants, animals, and microorganisms. Do not include tables, graphs, long lists of names, references to literature, or footnotes. At the first mention of a herbicide rate, express the rate either on the acid equivalent (ae) basis or active ingredient (ai) basis. Use common names and omit trade names for herbicides, other pesticides, and surfactants or other adjuvants in the abstract. A list of ISO-approved common and chemical names of herbicides is available at the Compendium of Common Pesticide Names (http://www.alanwood.net/pesticides/index.html). A database of approved common and Latin names of common weed species can be found at https://plants.usda.gov/.

Management Implications

Following the abstract, include a one-page (double spaced) description of the importance of this work to the field practitioner. This section should not be a rewording of the abstract. Rather, it should be a clearly written interpretation of how the work can be used currently or in the future for better prevention or management of invasive plants. This section will be included in a boxed addendum in either the first or second page of the published paper. The Management Implications section is only required for original research articles and not for review articles or case studies.

Key words
Immediately after the abstract, list words, word pairs, or phrases (usually not more than five words) ***not included in the title*** that further describe the content of the manuscript. List only specific words or phrases that will be useful in indexes and literature database searches. Synonyms for common names and Latin binomials are optional. If provided, they should be placed in the keyword section. See http:theplantlist.org for an authoritative list of synonyms.

Introduction
Begin the Introduction on a new page.

Materials and Method
Sources of the material should be shown in parentheses following the first mention. Provide a brief description of the item, model number (if applicable), and the source, including the company's address (full mailing address or city and state/country). Software packages should be cited in this way and not in the References. For example: "During a single year, large plots were treated with glyphosate (Roundup WeatherMax®, 540 g ai L^{-1}, Monsanto Canada, 900 One Research Road, Winnipeg, Manitoba, Canada, R3T 6E3)." Commercially available software packages (e.g. SAS/STAT) should be cited in this way and not in the References. Freely available software described in the peer-reviewed literature (e.g. R) should be referenced by citing the relevant article in the text and in the References section.

Long herbicide treatment lists in the text are discouraged. In cases where five or more herbicides are mentioned, they should be listed in a Table providing the following details: herbicide common and trade names; herbicide formulation (if necessary); herbicide rate(s) in active ingredient or acid equivalent; name of respective herbicide manufacturer; and herbicide manufacturer city, state, and web site.

Authors are encouraged to include latitude and longitude coordinates for field locations. After each location name they should specify the coordinates in parenthesis e.g. "Vegetable Crop Research Farm in Champaign, Illinois (40.08°N, 88.26°W)".

Results and Discussion
These are combined as one section. There is no separate Conclusion section, but authors may choose to end the Results and Discussion with an untitled summary.

Acknowledgments
WSSA requires that authors disclose sources of all funding received to support the research described in the manuscript. Funding sources should be appropriately described and recognized

in the Acknowledgments section, accompanied by declaration of any potential conflicts of interest (see below). Where no specific funding has been provided for research, please provide the following statement: "This research received no specific grant from any funding agency, commercial or not-for-profit sectors." Acknowledgment of individuals who contributed to the research, but who do not meet the criteria for authorship listed above in the Authorship section, is at the discretion of the authors. Consult a recent issue of *IPSM* for examples.

Conflicts of Interest

A conflict of interest (COI) may include, but is not limited to, any financial, professional, contractual or personal relationship or situation that could be perceived to influence an author's objectivity in presenting the work. Conflicts of interest must be disclosed if relevant to the content of the manuscript. A COI declaration does not invalidate the research presented or preclude publication of the manuscript, but is required to allow reviewers and readers to assess research in the context in which it was conducted. Determination and disclosure of all COIs involving co-authors is the responsibility of the corresponding author. If no conflicts of interest are noted, then the following statement should be included: "No conflicts of interest have been declared."

References

Begin on a separate page. Double-space the entire section (with no extra spaces between entries). List citations alphabetically by author. Each citation should include the names of all authors, year of publication, complete title, publication, volume number, and inclusive pages, in that sequence. Journal names should be abbreviated as shown in ISI guidelines, accessible at https://woodward.library.ubc.ca/research-help/journal-abbreviations/. Initials should follow the last name of each author, with no comma after the last name and no periods or spaces between initials. For references to a specific portion of a book or similar publication, cite those pages rather than the total pages of the book. See example below.

Unpublished texts are not permitted in the References section. Please cite submitted or unpublished articles parenthetically in the text as personal communications e.g. (KM Novosel, personal communication). Theses and dissertations may appear in References. Do not cite or footnote abstracts more than three years old unless the information contained is of vital importance and has not been reported elsewhere.

Citation examples:

Journal:

Pline WA, Wilcut JW, Duke SO, Edmisten KL, Wells RFP (2007) Tolerance and accumulation of shikimic acid in response to glyphosate applications in glyphosate-resistant and nonglyphosate-resistant cotton (*Gossypium hirsutum* L.). J Agric Food Chem 50:506–512

Wardell DA, Parkinson D (1990) Influence of the herbicide glyphosate on soil microbial community structure. Plant Soil 21:187–204

Citation of material published online, including articles published online but not yet assigned to a journal issue, should include the DOI (digital object identifier). Citations from online journals

should also include volume and page numbers if available. Example: Clouse JW, Adhikary D, Page JT, Ramaraj T, Deyholos MK, Udall JA, Fairbanks DJJellen EN and Maughan PJ (2016) The amaranth genome: genome, transcriptome, and physical map assembly. Plant Genome 9, 10.3835/plantgenome2015.07.0062.

Book:
Ahrens WH, ed (1994) Herbicide Handbook. 7th ed. Champaign, IL: Weed Science Society of America. Pp 224–226

Kyle DJ, Osmond CB, Arntzen CJ, eds (1987) Photoinhibition. 4th ed. Volume 2. New York: Elsevier. 315 p

Wiese AF, Kyle, DJ (1985) Weed Control in Limited Tillage Systems. 2nd ed. Champaign, IL: Weed Science Society of America. Pp 78–96

Article in book:
Baver LD, Gardner WH (1972) Flow in stratified soil systems. Pages 343–345 *in* Baver LD, ed. Soil Physics. New York: Academic Press

Frankland B (1981) Germination in shade. Pages 187–204 *in* Smith HL, Taylor GHM, eds. Plants and the Daylight Spectrum. London: Academic Press

***Proceedings*:**
Forcella F, Buhler DD (1994) Dynamic environmental regulation of secondary dormancy in summer annual weeds. Pages 3–7 *in*Proceedings of the 1st International Symposium on Plant Dormancy. Corvallis, OR: Weed Science Society of America

Report or government publication:
Taylor AG (1992) Pre-compliance Date Testing for Pesticides in Illinois' Surface Water Supplies. Springfield, IL: State of Illinois Environmental Protection Agency Rep 026. 6 p

[USDA] US Department of Agriculture (1994) Kentucky Agricultural Statistics 1993– 1994. Washington, DC: U.S. Department of Agriculture, p 101

Anonymous (1995) 1994–1995 Nebraska Agricultural Statistics. Nebraska Agricultural Statistics Service. 164 p

Thesis or dissertation:
Nieto-Hatem J (1963) Seed Dormancy in *Setaria lutescens*. Ph.D dissertation. Ames, IA: Iowa State University. 81 p

Patent:
Harred JF, inventor; Dow Chemical Company, assignee (1972) April 4. Epoxidation process. US patent 3,654,317

Package labels and inserts:

Anonymous (1996) Assure® II herbicide product label. DuPont Publication No. H-59334. Wilmington, DE: DuPont. 9 p

Website:
Agriculture and Agri-Food Canada (2014) Market and Industry Services Branch, Horticulture and Special Crops Division. http://www.Agr.ca/misb/spcrops/bean_e.html. Accessed: January 29, 2016

Anonymous (2015) Project Summary Comparative Genomics of Domestication Traits in Lettuce and Sunflower. http://veghome.ucdavis.edu/faculty/michelmore/. Accessed August 23, 2016

In-Text Citations
Literature citations in the text should use the author and year system. Literature citations should be enclosed in parentheses. Authors are directed to consult the *CSE Manual*. A brief summary of the citation method is shown below. Entries are in alphabetical, then chronological order.

One author: Jones (2005) or (Jones 2005)
Two authors: James and Smith (2015) or (James and Smith 2015)
Three or more authors: Jones et al. (2016) or (Jones et al. 2016)
Two or more citations: James and Smith (2012), Jones (2013) or (James and Smith 2012; Jones 2013)
Multiple citations by one author: Jones (2001, 2012a, 2012b) or (Jones 2001, 2012a, 2012b)
Multiple citations by different authors: (James and Smith 2013; Jones et al. 2011; Smith 2014)

No comma is required to separate name and year, but multiple citations by the same author should be separated by commas as shown above. Multiple citations by different authors are separated by a semicolon. When referring to the authors of a paper with more than two authors, use the first author's name, followed by et al. Unpublished data and personal communications are cited parenthetically in the text using this form: (JTC Renner, unpublished data) and (KM Novosel, personal communication). All citations must be listed in References (except unpublished data and personal communications), and all listed references must be cited.

Tables
Type each table on a separate page following the References section. First reference to tables included primarily to present results should be in the Results and Discussion section, and tables should be numbered with Arabic numerals in the sequence of first reference in the text.

Include titles for all tables. Use the full scientific name (without authority) for weeds and other non-crop species in the table title. Redefine all abbreviations used in the table, even if the definition has already been given in the text. All text within each table should be in lower case letters except for the first word of a phrase or sentence, and proper nouns that should have initial capitals. Column headings should relate to data or information in the body of the table, not just to other information in column headings, as in this example (note separation of thousands by a comma):

Proper Form:

Corn yield	
1988	1989
hg ha^{-1}	
6,400	7,800
...	...

Improper Form:

Year	
1988	1989
kg ha^{-1}	
6,400	7,800
...	...

Avoid the use of exponents in column headings. When reporting data for a number of years or locations, group the data in adjacent columns under each factor measured. This facilitates comparison for repeatability of responses. The unit of measurement for a column of figures should be abbreviated and placed at the top of the column. Do not place the unit of measurement in parentheses. Footnotes to tables should be designated with superscript lowercase letters at the highest appropriate level within the table, except probability values, which should use asterisks. For sample layouts, see published tables in a recent issue of *IPSM*.

Figures

Figures should be appended to the end of the manuscript for inclusion in a posted Accepted Manuscript, for which total manuscript file size should not exceed 500 MB. High resolution figure files that expand the composite manuscript file beyond this limit can be uploaded separately for inclusion in the final published version of the article. Experimental data may be presented in graphic or tabular form, but the same data will not be published in both forms. Data points should be included with plotted curves. Equations must be given with predicted curves or in figure legends. Legends for the axes of graphs must follow the 'Parameter (unit)' format; e.g., Time (h). Capitalize only the first word of each axis label. If an explanation of symbols is required, include the key in the figure. Scale bars included in photomicrographs should be placed directly on the image.

Number all figures, including photographs, consecutively with Arabic numerals in the sequence of first reference in the text. Figures should be cited in the text as Figure 1, Figure 2 etc. Type the list of figure legends on a separate page. Use scientific names in full (without authority) in figure legends for weeds and other non-crop organisms. Redefine all abbreviations used in the figure even if the definition has already been given in the text.

Supplementary Material

The reader should be able to fully understand the author’s work through a reading of the article alone. However, the provision of Supplementary Material may be beneficial to readers if it supports reproducibility and transparency. Additional material too extensive for publication in a journal issue can be submitted as supplementary files to be made available online (e.g. figures, videos, 3-D structures/images, extensive datasets, etc).

Supplementary tables should be identified and referenced in the text as "Supplementary Table S1", "Supplementary Table S2" etc.; supplementary figures should be identified and referenced as "Supplementary Figure S1", "Supplementary Figure S2" etc. Any supplementary file that is not a table or figure should be referenced and identified as "Supplementary Appendix S1", "Supplementary Appendix S2" etc. All Supplementary Material should be uploaded in Editorial Manager at the time of parent article submission and clearly cited in a "Supplementary Materials" references list at the end of the body text. Supplementary Material will be made available for peer review for both relevance to the parent article and accuracy, but will be neither copyedited nor typeset.

Detailed Instructions

Abbreviations. Abbreviations should be introduced in parentheses immediately after the first use of the term: e.g., days after treatment (DAT), thin-layer chromatography (TLC). Avoid excessive use of acronyms. See (INSERT HYPERLINK) for approved abbreviations for frequently used terms or phrases that need not be defined.

Adjuvant Names. Consult Young B, F Whitford and J Matthews (2016) *Compendium of Herbicide Adjuvants* 13e (available at https://edustore.purdue.edu) for correct terminology. Otherwise, use the most complete chemical description of the adjuvant.

Crop Variety Names. Enclose the cultivated variety of a crop plant, if known, in single quotation marks at first mention; thereafter, omit the quotation marks. Example: Corn (*Zea mays* L. 'Dixie 18'), but later Dixie 18 corn or just corn if only one cultivated variety is used. For cultivar names that are registered trade names, insert the registered trademark (®) after the name.

Enzymes. Use the nomenclature and numbering system recommended by the Committee on Nomenclature and Classification of Enzymes of the International Union of Biochemistry (http://www.chem.qmul.ac.uk/iubmb/enzyme/).

Equations. Center display equations on a separate line, number sequentially starting with 1, and place the number in square brackets at the right-hand margin. Example:

$$Y = mx + b \quad [1]$$

Equations must be included in figures with predicted curves or put in the figure legend. Refer to equations in the text, tables, or figures by number: Equation 1 or (Equation 1).

Herbicide and other Pesticide Names. At the first mention in the text of a herbicide or other pesticide, give its common name or other designation. A list of ISO-approved common and chemical names of herbicides is available at the Compendium of Common Pesticide Names (http://www.alanwood.net/pesticides/index.html). The full chemical name is required for any herbicide, other pesticide, growth regulator, or safener that does not have an ISO-approved common name. A chemical referred to by a code designation must be followed by its full chemical name enclosed by parentheses. Use only the common name or other designation thereafter. If the particular commercial formulation of a herbicide used affects results, identify the formulation in parentheses.

When the common name of the herbicide refers to the parent acid, the salt or ester portion of the active ingredient should be identified at first mention. Example: the methyl ester of diclofop or the isopropylamine salt of glyphosate. Use the approved common name in the remainder of the paper unless there is a need to distinguish between the active ingredient and the parent acid in the text. In such cases, a modifier can be added to the common name (e.g., 2,4-D-amine), and can be used in the text to identify the active ingredient. Recent issues of *IPSM* can be used to determine appropriate modifiers. When rates of acid herbicides are expressed as weight per volume or weight per area, indicate at first mention whether weight refers to the acid equivalent (ae) or the active ingredient (ai), (kg ae ha-^{1} or kg ai ha^{-1}).

Measurements and Units. Use exponents rather than a slash (/) or dot (·) in reporting units of measure. e.g., kg ha^{-1} and µmol m^{-2} s^{-1}, not kg/ha or µmol · m^{-2} · s $^{-1}$. Report all measurements in SI units or SI-derived units (see *CSE Manual*). Do not use quintals or metric tons. Describe lighting conditions as irradiance (W m^{-2}) of photosynthetically active radiation or as photosynthetic photon flux density (µmol m^{-2} s^{-1}). Leave a space between units in a series. Use nanometers (nm) to designate wavelength, and give spectrophotometric readings in absorbance units (A) rather than optical density (OD). In laboratory studies, express concentration of acids and bases in normality (N) and of herbicide and salt solutions in molarity (M) rather than ppm. Express pressure in kPa (kilopascals) rather than kg cm^{-2} or bars. Express radioactivity in Bq (Bequerels). Use kg rather than Mg (megagrams). Use L or ml rather than cc for measurements of volume. Express the makeup of solid systems as in the following: sand and peat (1:1 by wt). Words are preferred when units of measure are not involved; e.g., use buds per rhizome and tillers per plant. In field or laboratory studies, indicate whether ppm and percentages are on a w/w or v/v basis. Do not use w/v as a ratio. Use only the weight/volume units; e.g., 100 g L-1, rather than 1:9 (w/v). Express the makeup of solvent systems as follows: methyl alcohol, water, and kerosene (1:2:1 by vol).

Numbers. Use Arabic numerals for all numbers with two or more digits and for all measurements such as time, weight, length, area, quantity, concentration, or temperature, with the following exceptions. Spell out a number if it is the first word in a sentence or if it is less than 10 and not a measurement, except in a series in which one number has two or more digits. Do not use a hyphen for the preposition 'to', or × for the preposition 'by' except in tables and figures. Write 100 by 20 rather than 100×20 and 1 to 3 rather than 1–3. Separate thousands with a comma (1,000, 10,000, 100,000).

Omit non-significant numbers. Herbicide dosages and injury levels usually are not known more accurately than to the nearest 10%. Yields, enzyme levels, and photosynthetic rates often are not known more accurately than to the nearest 1% (10% of LSD or a similar statistic). Therefore, report a herbicide rate as 0.9 kg ha^{-1} rather than 0.89 kg ha^{-1} and a grain yield as 590 kg ha^{-1}) 593 kg ha^{-1}.

Replication. While *IPSM* recognizes that experimental studies in wildland, aquatic, and natural environments are unique and may require flexibility in experimental approaches, it is expected that many experiments should be repeated in time or space. This primarily includes field plot experiments, but can also include some laboratory, greenhouse and growth chamber experiments. In addition, *IPSM* recognizes that, due to limitation in time and funding, some high

intensity manipulative experiments cannot be replicated temporally or spatially. In circumstances where limited replication is justified, *IPSM* will consider manuscripts on a case-by-case basis. We ask, however, that authors appropriately tailor their discussions and conclusions to reflect limitations of experiments conducted at single locations and/or over short periods of time. Authors need strong justification for not repeating an experiment in time or space. This can occur, for example, in cases where there is truly compelling supporting evidence from parallel experiments. In addition, repeating an experiment is not necessary if the experiment addresses a supporting study, which is not primary to the hypothesis being tested, and the lack of repetition is clearly stated with limited inferences. Experiments that are not repeated should be statistically robust with a high degree of confidence and with outcomes that are supported by other experiments of other peer reviewed literature. This can apply to unique experimental conditions (e.g., mesocosms or ecotrons), field experiments where populations are not large enough or the habitats are not sufficiently uniform to be repeated, or studies that may not allow replication in time such as large-scale disturbances. Such studies may require sufficient replication within a single experiment or pseudoreplication, but should report any spatial or time series covariance. Authors should identify their proposed inference space for their study and exercise caution in extrapolating across spatial scales or generalizing beyond the experimental condition.

Soil Terminology. Include the soil series with textural classification and the subgroup name, using the terminology of the U.S. Department of Agriculture Soil Conservation Services publication, *Soil Taxonomy*, 1988 (U. S. Government Printing Office, Washington, D.C.). For soils outside the United States, use the local official terminology.

Statistical Analyses. Data should be analyzed statistically, and results of the analyses should be included in the tables or figures where the data are presented. Authors are encouraged to refer to Onofri et al. (2010) *Current Statistical Issues in Weed Research.* Weed Res. 50:5-24; and to Ritz et al. (2015) *Research Methods in Weed Science: Statistics.* Weed Sci. 63sp1:166-187. Multiple comparison tests (LSD and Duncan's multiple range) may be used when appropriate, but not on structured data such as quantitative series of treatments (e.g., herbicide rates in stepwise increments) or factorial treatments. The least significant difference (LSD) is appropriate for paired multiple comparison procedures. In quantitative series, the correct procedure is use of regression or other curve-fitting techniques that can be included in an analysis of variance (ANOVA). An assumption with ANOVA is that variances are homogeneous, but this is unlikely for proportions, percentages, or values differing by orders of magnitude. In such cases, transformations of the raw data must be used if ANOVA is to be valid. Clearly identify all statistical procedures used, including methods of analysis, numbers of replicates and subsamples, transformations used, and statistical tests performed. Give literature citations for statistical analyses.

Trade Names. Use trade names sparingly and only if necessary to describe materials or methods. If a trade name is necessary, use it with the generic name in the text and include, where appropriate, the symbol ®. The capitalized trade name along with the name and address of the manufacturer or supplier, if not widely known, should be shown in parentheses immediately following the first mention. Submissions including five or more herbicides should be listed in a Table. Refer to the complete instructions for the Materials and Methods section for details.