Weed Science 2013 61:609–616

Directions For Contributors To *Weed Science* and *Weed Technology*

Content

The Weed Science Society of America (WSSA) publishes original research and scholarship in the form of peer-reviewed articles in two international journals. *Weed Science* is focused on understanding "why" phenomena occur. As such, it focuses on fundamental research directly related to all aspects of weed science, including invasive plant species. *Weed Technology* focuses on understanding "how" weeds are managed. As such, it is focused on more applied aspects concerning the management of weeds and invasive plant species.

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 Acceptance is made with the understanding that the substance of the manuscript has not been and will not be published elsewhere other than as an abstract or as a preliminary report to growers or cooperators. Experiments should be repeated in time or space and must provide confirming results. Progress reports, nonreplicated experiments, and simple observational information are not acceptable. Visual estimates of percentage weed control and of crop injury are acceptable when supported by objective measurements of response.

Weed Science. Topics include the biology and ecology of weeds and invasive species in agricultural, forestry, aquatic, turf, recreational, rights-of-ways, and other settings; genetics of weeds and herbicide resistance; chemistry, biochemistry, physiology and molecular action of herbicides and plant growth regulators used to manage undesirable vegetation, and herbicide resistance; ecology of cropping and non-cropping systems as it relates to weed management; biological and ecological aspects of weed control tools including biological agents, herbicide resistant crops, etc.; effects of weed management on soil, air, and water. Symposia papers and reviews are accepted. Consult the editor for additional information.

Weed Technology. Topics include the management of weeds agricultural, forestry, aquatic, turf, recreational, rights-of-ways, and other settings; design, efficacy, and impact of weed control tools; technology for integrated weed management; scholarship in education, extension, and outreach methods and resources; technology and product reports; and regulatory affairs. Symposia papers and reviews are accepted. Articles dealing with plant growth regulators and management of undesired plant growth may also be accepted, provided there is clear relevance to weed science technology, e.g., turfgrass or woody plant management along rights-of-way, vegetation management in forest, aquatic, or other non-crop situations. Consult the editor for additional information.

Types of Articles

Weed Science.

Refereed Articles.

a. *Research.* Original articles concerning research in the area of physiology, chemistry, and biochemistry; weed biology and ecology; weed management; soil, air, and water; and other special topics related to weed science are encouraged. See recent issue for examples.
b. *Reviews. Weed Science* also welcomes concise review articles that provide 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.
c. *Symposium Papers.* Proceedings of WSSA symposia may be published in *Weed Science*. Chairs of symposia must obtain approval for publication of symposia no later than the midsummer WSSA Executive Committee meeting, and an associate editor will be assigned to work with the authors on paper submittal. Symposia authors must submit their manuscripts promptly for review and must cooperate so papers are published by a predetermined date, normally within one year of the symposia.
d. *Rapid Communication.* Rapid communications should be submitted in the usual format for initial consideration. The rapid communication should not exceed 4000 words. The following rules concern the submission of rapid communications. 1. The observations must be novel and of immediate relevance. Rapid Communication is not a preliminary note. 2. Methods must be so described as to permit repetition; results must be adequate to justify claims. 3. Communications must be accompanied by a separate brief statement setting out the author's reasons for requesting rapid rather than regular publication. 4. The Editor will assign the communication to two referees, one of whom may be a member of the Editorial Board. 5. In all instances the decision of the Editor will be final. 6. In general the author guidelines for original research papers apply. Articles that do not meet the criteria as a Rapid Communication may be returned to authors without a full review. The materials described in Rapid Communications should not be included in a later paper.

Weed Technology.

Refereed Articles.

a. *Research and Education.* Original articles concerning research, teaching, extension, industry, consulting, regulation, surveys, and equipment are encouraged. Research articles and nontraditional reports such as surveys and new educational programs from extension and teaching are welcomed.
b. *Notes.* Notes are short original articles on topics that do not meet the criteria for Research or Education papers, such as descriptions of newly discovered weeds, new research methods or equipment, and some surveys. Articles determined by the editor to be limited in content and scope, but that make unique contributions, may also be published as Notes rather than full papers.
c. *Invited Reviews. Weed Technology* also welcomes concise review articles that provide current information and appeal to a broad audience. Authors should contact the editor to discuss the proposed article. Once received by

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the journal Editor, the article will be reviewed and edited as a regular submission.

d. *Symposium Papers.* Proceedings of WSSA symposia may be published in *Weed Technology*. Chairs of symposia must obtain approval for publication of symposia no later than the midsummer WSSA Executive Committee meeting, and an associate editor will be assigned to work with the authors on paper submittal. Symposia authors must submit their manuscripts promptly for review and must cooperate so papers are published by a predetermined date, normally within one year of the symposia.

Submitting the Manuscript

Please use PeerTrack to access manuscript submissions (www.editorialmanager.com/ws/ for *Weed Science* and www.editorialmanager.com/wt/ for Weed Technology). The figures must be submitted as a separate file(s) from the text/tables. The following text file formats are acceptable for text: Microsoft Word, Corel Word Perfect, Rich Text Format (RTF), and Text. Electronic versions of graphics are accepted in the following formats: TIFF, EPS, PDF, JPEG, Word, PowerPoint, and Postscript. You can visit http:/verifig.allenpress.com to check the quality of your figures prior to submission. Additional information is given in the "Figures" section below.

Authors are asked to pay a portion of publication costs. These costs for *Weed Science* are currently $65 per page plus an additional processing charge of $50 per manuscript if none of the authors are WSSA members. The costs for *Weed Technology* are currently $80 for the first page and $65 per additional page plus an additional processing charge of $50 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.

Open Access. Charges to make articles open access are $2,000 for authors who are members of the Weed Science Society of America and $2,500 for non-members. Journal articles are posted at WSSA Online Journals (www.wssajournals.org/) and BioOne (www.bioone.org). Authors who opt for open access do not have to pay regular page charges.

Manuscript Review. Manuscripts will be reviewed for content and presentation by two or more anonymous Reviewers and an Associate Editor. Communications concerning changes are with the Associate Editor. Final acceptance or rejection is the prerogative of the Editor.

Preparing the Manuscript

Style. In addition to these Directions for Contributors, refer to recent issues of *Weed Science* and *Weed Technology* as guides to proper style. Both journals follow Scientific Style and Format: The CSE (Council of Science Editors, Inc.) Manual for Authors, Editors, and Publishers, Cambridge University Press, Cambridge, MA (formerly CBE, the Council of Biology Editors), 7th ed., 2006. A database of WSSA approved common and Latin names of common weed species can be found at http://wssa.net/weed/composite-list-of-weeds/. A list of common and chemical names of herbicides approved by the WSSA is available at http://wssa.net/weed/herbicides/.

Language & Copyediting Services. Manuscripts submitted to scholarly journals are sometimes rejected not on the basis of their science, but because of poor readability. This is especially true of manuscripts submitted by nonnative speakers of English. The Weed Science Society of America does not provide language and copy editing services to authors prior to manuscript acceptance. However, there exist a number of language and copyediting services that may be of assistance to you. We have listed some of them below. Weed Science Society of America does not endorse any individual or agency. Professional qualifications and compensation must be discussed with the editing service that you contact.

- http://www.journalexperts.com (10% discount with the referral code "WSSA")
- http://www.internationalscienceediting.com
- http://www.asiascienceediting.com
- http://www.prof-editing.com
- http://www.alphascienceeditors.com
- http://www.editage.com

Typing Instructions. Include line numbers in your manuscript. Lines should be numbered consecutively throughout the entire document. Double-space everything, including pages with tables, figure legends, footnotes, and literature citations. Do not indent subheadings or sub-subheadings. Indent paragraphs.

Order. Manuscripts should be in the following order: Short title for running footer, Title (no separate title page), Author(s), Abstract (untitled), Nomenclature, Key Words, Introduction (untitled, begin on a new page), Materials and Methods, Results and Discussion, Acknowledgments, Literature Cited (begin on a new page), Tables (begin on a new page), and Figures Legends (begin on a new page). Figures should each be a separate file, and not included with the text.

Headings. Place each main section heading centered on its own line in bold and capitalize the first letter of all major words. Main section headings will generally be: Materials and Methods, Results and Discussion, Acknowledgments, and Literature Cited. Omit a summary or conclusion section. The introductory section is not titled. Center each main section heading two lines below the previous section; use boldface type and capitalize the first letter of major words. Begin subsection headings at the left-hand margin. Capitalize the first word and each major word following, type in boldface, and end with a period. Begin the first sentence on the same line. If sub-subsection headings are used, begin at the left-hand margin, capitalize the first word and all major words, italicize, and end with a period. Begin the first sentence on the same line. Use fourth-level headings (level following sub-subheadings) sparingly. If used, paragraph indent, capitalize only the first word (and proper nouns that are normally capitalized), italicize, and end with a period. Begin the first sentence on the same line. Avoid use of nonspecific headings such as General, Field, Greenhouse.

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Format

Title. The title page includes a short title for the running footer that is not to exceed 30 characters and spaces. The title, centered and typed in bold with the first letter of all major words capitalized, should be no more than 80 characters and spaces and should include words useful in computer searches. Use the WSSA-approved common name for weeds followed by the scientific name (without authority) in parentheses. If there is no WSSA-approved common name, use only the scientific name. 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, and indicate a footnote with an asterisk. Provide the full name of each author (first, middle initial [optional], and last). In the footnote, give the affiliation(s) of the authors at the time the study was conducted, followed by the institutional address(es). Spell out names of institutions in full. Addresses of U.S. authors should include the two-letter postal abbreviation for the state and the ZIP code. E-mail address of the corresponding author should be included. **Also** include the full job titles of the authors at the institution and time that the study was conducted. ORCID numbers are optional and can be included parenthetically after the job title. Current addresses should be listed at the end. An example of an author address footnote follows:

> * First, third, and fourth authors: Graduate Student (ORCID: 0000-0000-0000-0000), Assistant Professor (ORCID: 0000-0000-0000-0000), and Professor (ORCID: 0000-0000-0000-0000), Department of Soil and Crop Sciences, Texas A&M University, College Station, TX 77840; Second author: Professor, Agronomy Department, University of Florida, P.O. Box 11111, Gainesville, FL 32611. Current address of third author: Department of Horticultural Science, North Carolina State University, Raleigh, NC 27695. Corresponding author's E-mail: correspondingauthor@wssa.com

Abstract. Place the abstract on the same page as the title and authors. Do not include the word "Abstract." The text of the abstract should not exceed 3% of the length of the manuscript, including tables but not including the Literature Cited. It must be written as a single paragraph and must contain an objective and informative digest of the significant content of the paper, not simply a description of the contents. Representative quantitative data from the results often make the abstract more informative. Use only common names in the body of the abstract for herbicides, plants, animals, and microorganisms. Omit tables, graphs, long lists of names, references to literature, or footnotes. At the first mention of the herbicide rate, express the rate either on the acid equivalent (ae) basis or active ingredient (ai) basis. Omit trade names for herbicides, other pesticides, and surfactants or other adjuvants in the abstract.

Nomenclature. Immediately after the abstract, type "Nomenclature" followed by a colon and use boldface type. Then repeat each common name appearing in the title and abstract. Only include weeds and crops in the Nomenclature that are mentioned in the Abstract. For herbicides, use WSSA-approved common names or other designations. Give full chemical names for herbicides, other pesticides, or safeners that have no WSSA-approved common names. For plants use the common name followed by the Latin binomial and classifier; Bayer codes may be included for weeds, but are not required. For other organisms, use the common name followed by the binomial and the authority. The preferred order is herbicides, weeds, and crops, alphabetized within each group. Example: **Nomenclature:** Glyphosate; 2,4-D; cheat, *Bromus secalinus* L. BROSE; wild oat, *Avena fatua* L. AVEFA; corn, *Zea mays* L. Note the use of commas and semicolons. A database of WSSA approved common and Latin names of common weed species, including Bayer codes, can be found at http://wssa.net/weed/composite-list-of-weeds/. A list of common and chemical names of herbicides approved by the WSSA is available at http://wssa.net/weed/herbicides/.

Key words. Immediately after the nomenclature, type the phrase "Key words" at the left margin. Use boldface type, followed by a colon. List words, word pairs, or phrases (usually not more than five words) not included in the title or nomenclature that further describe the content of the manuscript. List only specific words or phrases that will be useful in indexes and in computerized literature searches. Capitalize only the first letter of the first word of this list, except for proper names. Place a comma after each word or phrase and a period after the last word.

Introduction, Materials and Methods, Results and Discussion, and Acknowledgments. These sections follow the Key words section in that order. Each first-level section head is centered on the second line below the preceding section. Text begins one line below each heading. Begin the introduction on a new page. There is no heading for the introduction.

In the Materials and Methods section, the 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. The company's address (full mailing address or just city and state/country) may also be included although it is not required. Software packages should be cited in this way and not in the Literature Cited. Following is an 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)." 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.

Submissions including five or more herbicides 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 website (no mailing address or zip code). Long herbicide treatment lists in the text will also be discouraged; herbicide treatments and rates will be easily discerned in the Table. Use one sentence in the Materials and Methods and/or other appropriate locations within the manuscript to refer readers to the Table.

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Likewise, when it is necessary to describe more than one experiment with five or more herbicides, the information can be listed in the same Table or in an additional Table.

The use of separate Results and Discussion sections and a separate concluding section are generally discouraged, but authors may wish to conclude the Results and Discussion section with an untitled summary. Type second-level heads flush left and boldface, with the first letter of each word capitalized, and end with a period. Third-level heads are flush left and italic, with the first letter of each word capitalized, and end with a period. Fourth-level heads are paragraph indented, italicized, with only the first letter capitalized, and end with a period. The text following second-, third-, and fourth-level heads should immediately follow the head on the same line.

Literature Cited. Beginning on a separate page, type "Literature Cited" in bold, centered. Begin the first entry two lines below the heading. The first line of each entry should be flush left; subsequent lines should be paragraph indented. 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 the most recent issue of *BIOSIS Serial Sources*, published by Biological Abstracts, Inc., and recent issues of *Weed Technology* and *Weed Science*. 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. (Example: Baver LD, Gardner WH (1972) Flow in stratified soil systems. Pages 343–345 *in* Baver LD, ed. Soil Physics. New York: Academic). Unpublished texts are not permitted in the Literature Cited section. Please cite submitted or unpublished articles parenthetically in the text as personal communications: (KM Novosel, personal communication). Theses and dissertations may appear in Literature Cited. Do not cite or footnote abstracts more than 3 years old unless the information contained is of vital importance and has not been reported elsewhere. Authors should consult *Scientific Style and Format: The CSE* (Council of Science Editors, Inc.) *Manual for Authors, Editors, and Publishers*, Cambridge University Press, Cambridge, MA (formerly CBE, the Council of Biology Editors), 7th ed., 2006.

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

For online-only publications, use the DOI in the place of the page numbers (example: 50:10.1614/00004.1)

Book:

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

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

Wiese AF, Kyle, DJ (1985) Weed Control in Limited Tillage Systems. 2nd edn. 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 (1999) Market and Industry Services Branch, Horticulture and Special Crops Division. http://www.Agr.ca/misb/spcrops/bean_e.html. Accessed: January 29, 2001

Anonymous (2001) Project Summary Comparative Genomics of Domestication Traits in Lettuce and Sunflower. http://veghome.ucdavis.edu/faculty/michelmore/projectsummary.htm. Accessed August 23, 2001

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.

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One author:	Jones (1995) or (Jones 1995)
Two authors:	James and Smith (1994) or (James and Smith 1994)
Three or more authors:	Jones et al. (1994) or (Jones et al. 1994)
Two or more citations:	James and Smith (1994), Jones (1995)
or	
	(James and Smith 1994; Jones 1995)
Multiple citations by one author:	Jones (1989, 1994a, 1994b)
or	
	(Jones 1989, 1994a, 1994b)
Multiple citations by different authors:	(James and Smith 1989; Jones et al. 1993; Smith 1991)

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 Literature Cited (except unpublished data and personal communications), and all listed references must be cited.

Tables. Type each table on a separate page following the Literature Cited. Tables should be numbered with Arabic numerals in the sequence of first reference in the text. Begin at the left margin with the word "Table" and its associated number followed by a period. Begin the title on the same line. Do not indent after the first line. Double space everything. Do not give the scientific name of a weed or crop if it has already been given in the text. Redefine all abbreviations used in the table, even if the definition has already been given in the text. If horizontal lines in a table need to span more than one cell, it is advisable to merge the cells to prevent line breaks from being introduced during typesetting.

Legends for Figures. Type the list of legends on a separate page. Begin the legend at the left margin, type the word "Figure" and its number, and place a period after it. Begin the first sentence on the same line. Do not indent after the first line. Double space everything. Do not give the scientific name of a weed or crop if it has already been given in the text. Do redefine all abbreviations used in the figure if the definition has already been given in the text. If an explanation of symbols is required, include the key in the figure. Authors may be charged a fee if artwork has to be generated to match a symbol used in the figure.

Figures. Number figures consecutively with Arabic numerals in the sequence of first reference in the text. Upload each figure as a separate file. The following figure formats are acceptable:

TIFF (.tif), Adobe Illustrator (.ai), Canvas, EPS (.eps), Adobe Photoshop (.psd), Quark documents, PDF (.pdf), Corel Photo-Paint, PageMaker documents, JPEG (.jpg), Corel Draw, Postscript, and PictureViewer documents. Figures should be at least 300 dpi in quality for printing. You can check the quality of your figures prior to submission at http:/verifig.allenpress.com. Log in with your email address and use "figcheck" as the password. You will receive a report with details about the resolution, figure size, fonts, and color mode of the files. Authors are encouraged to submit photos that make the manuscript more compelling. There are no extra charges for black and white photos and a $450 charge for color photos in the manuscript. Photos can be published in color online only for no extra charge. See the **Figures** section under "Detailed Instructions" for more information.

Detailed Instructions

Abbreviations. Acceptable abbreviations for frequently used terms or phrases that need not be defined follow:

A	absorbance
ae	acid equivalent
AFLP	amplified fragment length polymorphism
ai	active ingredient
ANOVA	analysis of variance
Bq	Bequerel
C	Celsius
CEC	cation exchange capacity
cm	centimeter
d	day
diam	diameter
dicot	dicotyledon
g	gram
g (Italics)	acceleration due to gravity
h	hour
ha	hectare
ht	height
kg	kilogram
km	kilometer
kPa	kilopascal
L	liter
LD50	dose lethal to 50% of test organisms
LSD	least significant difference
m	meter
M	molar
min	minute
ml	milliliter
mm	millimeter
mM	millimolar
mmol	millimole
mo	month
mol	mole
monocot	monocotyledon
N	normal
nm	nanometer
NS	not significant
Pa	pascal
POST	postemergence
PPI	preplant incorporated
ppmv	parts per million by volume
ppmw	parts per million by weight
PRE	preemergence

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RAPD	random amplification of polymorphic DNA
rpm	revolutions per minute
RNA	ribonucleic acid
s	second
SD	standard deviation
SE	standard error
SNP	single nucleotide polymorphism
µl	microliter
µM	micromolar
µmol	micromole
UV	ultraviolet
vol	volume
wk	week
wt	weight
yr	year

Other 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.

Adjuvant Names. Where possible, use WSSA-approved terminology as given in the WSSA monograph, Adjuvants for Herbicides, or in *Weed Science* 33 (Supp. 1):22–23 1985. Otherwise, use the most complete chemical description of the adjuvant.

Enzymes. Use the nomenclature and numbering system recommended by the Committee on Nomenclature and Classification of Enzymes of the International Union of Biochemistry (see *Enzyme Nomenclature*, 1986, Academic, New York).

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).

Figures. 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). Note the use of capital and lower case letters (capitalize only the first word of each axis label). Photomicrographs should be supplied in the correct size for printing with scale bars placed directly on the prints. Keys to symbols should be included in the figure itself. Authors may be charged if artwork must be generated to reproduce a graphic in the figure captions. There is no charge for black and white figures or online–only color figures. Authors will be charged $450 for color figures that are printed in the journal.

Number figures consecutively with Arabic numerals in the sequence of first reference in the text. Upload each figure as a separate file. The following figure formats are acceptable: TIFF (.tif), Adobe Illustrator (.ai), Canvas, EPS (.eps), Adobe Photoshop (.psd), Quark documents, PDF (.pdf), Corel Photo-Paint, PageMaker documents, JPEG (.jpg), Corel Draw, Postscript, and PictureViewer documents.

Figures should be at least 300 dpi in quality for printing. The size of a figure and the lettering and lines must be carefully considered for reduction because these figures will be reduced as much as possible to one column (8.89 cm) or two columns (18.415 cm). The minimum size of a reduced letter should be about 2 mm high. For a figure that is to be reduced to 1/4 of its size (1/2 length of size), lines of 0.5 to 0.8 mm and 16 to 18 point bold are recommended.

We encourage you to visit http:/verifig.allenpress.com to check the quality of your figures prior to submission. Log in with your email address and use "figcheck" as the password. You will receive a report with details about the resolution, figure size, fonts, and color mode of the files.

More information is available on the Allen Press website:
http://allenpress.com/system/files/pdfs/library/apmk_artwork_prep.pdf
http://allenpress.com/system/files/pdfs/library/apmk_digital_art.pdf

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

Herbicide and other Pesticide Names. At the first mention in text of a herbicide or other pesticide, give its approved common name or other designation. A list of common and chemical names of herbicides approved by the WSSA is available at http://wssa.net/Weeds/Tools/Herbicides/Herbicide Names.htm. Full chemical names are not required for herbicides and safeners that have WSSA-accepted common names. However, the full chemical name is required for any herbicide, other pesticide, growth regulator, or safener that does not have a WSSA approved common name. A chemical referred to by a code designation must be followed by its full chemical name enclosed by parentheses, brackets, or braces, unless already included in "Nomenclature." Use only the common name or other designation thereafter. Do not repeat in the text chemical names that have been given in "Nomenclature". The company code name should be used in lieu of a common name when the latter has not been approved by the WSSA Terminology Committee. 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 *Weed Technology* or *Weed Science* 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

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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 nonsignificant 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}.

Plant and Animal Names. At the first mention in the text of a plant or animal that is not included in the nomenclature, give its common name followed by the approved scientific name enclosed in parentheses or in brackets when parentheses occur within the binomial. Give the genus, species, and author or authors for the binomial. Underline or italicize the genus and species. 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. Do not repeat scientific names in the text that have been given in Nomenclature. For cultivar names that are registered trade names, insert the registered trademark (®) after the name. Refer to http://wssa.net/weed/composite-list-of-weeds/ for approved scientific names, common names, and Bayer codes of weeds. Bayer codes are optional and should be used only for plant species included in the study; do not use Bayer codes for weeds mentioned only in literature citations. After the first mention, use only common names. Describe animals and microorganisms in the same way at first mention. For the scientific and common names of crops, refer to *Important Crops of the World and their Weeds*, 2nd Edition, 1992 (Business Group, Crop Prot. Bayer AG, Germany), or *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.

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. 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. For regression, the R should be used to delineate multivariate coefficient of variation, r bivariate correlation coefficients, and R2, the coefficient of determination. Clearly identify all statistical procedures used, including methods of analysis, numbers of replicates and subsamples, transformations used, and statistical tests per-formed. Give literature citations for statistical analyses.

Supplemental Material. Additional material too long for publication in print can be submitted as supplementary material to be available online. This material may include (but is not limited to) data, tables, figures, appendices, video, or program code. Supplemental files can be uploaded along with the manuscript via PeerTrack and should be no larger than 5 megabytes in order to assure accessibility to readers.

Tables. Tables cannot be more than 120 character-spaces wide. First reference to tables included primarily to present results should be in the Results and Discussion section. All text within each table should be in lower case letters except for the first word of a phrase or sentence, proper nouns which should have initial capitals, and Bayer codes. Column headings should relate to data or information in the body of

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the table, not just to other information in column headings, as in this example (note separation of thousands by a comma):

Proper Form:		Improper Form:	
Corn yield		Year	
1988	1989	1988	1989
kg ha^{-1}		kg ha^{-1}	
6,400	7,800	6,400	7,800
…	…	…	…

Avoid the use of exponents in column headings. If a weed name must be abbreviated in column headings, use only the Bayer code. 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 below the solid horizontal line. Do not place the unit of measurement in parentheses. If horizontal lines in a table need to span more than one cell, it is advisable to merge the cells to prevent line breaks from being introduced during typesetting. 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. Study the form of a table in a recent copy of *Weed Science* or *Weed Technology*. Leave a space between values and letters used to indicate significant differences.

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.

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