

Directions for Contributors to *Weed Technology*

CONTENT

Weed Technology publishes original articles about current weed science research, teaching, extension, industry, consulting, and regulation. *Weed Technology* includes original research on weeds and their control, reports of new weed problems and new technologies for weed science, and special articles, emphasizing technology transfer to improve weed control.

1. **Refereed Articles.** A page charge is assessed for refereed articles (except c. *Invited Reviews*).

a. *Research and Education.* Original articles concerning research, teaching, extension, industry, consulting, regulation, and equipment are encouraged. Short research articles (4 to 12 manuscript pages) and non-traditional reports such as surveys and educational programs from extension and teaching are welcomed.

b. *Note.* Short original articles on topics that do not meet the criteria for "Research" or "Education" papers, such as new weeds discovered in the United States or Canada, new research methods or equipment, research that cannot be repeated such as where frost or hail occurred, and some surveys.

c. *Invited Reviews.* Invited articles are intended to review specific problem areas of weed science interest. Papers in this category will be solicited, reviewed, and recommended for publication (in either *Weed Technology* or *Weed Science*) by a special review of the Weed Science Committee.

Symposia Papers. Proceedings of WSSA symposia may be published in *Weed Technology*. Symposia chairmen must obtain approval for publication of symposia no later than the mid-summer WSSA Executive Committee meeting, and an associate editor will be assigned to work with the authors on paper submittal. Symposia authors must submit promptly their manuscript for review and must cooperate so papers are published by a predetermined date normally within one year of the symposia. Symposia papers may be distributed over two or more issues of *Weed Technology*.

2. **Special Articles.** A page charge will not be assessed for the following special articles:

a. *Technology Notes.* Short notes concerning news top-

ics of general weed science interest such as initial herbicide registrations, special meetings, updates on terminology, new publications from weed science organizations, etc. Items must be submitted to the Editor no later than 45 days before issue publication.

b. *New Technology.* An article prepared by industry concerning a new herbicide or other weed control technology. Herbicides considered for publication should have a WSSA-approved common name, and initial federal registration should be anticipated within 1 year after article publication.

c. *Intriguing World of Weeds.* Dr. Larry Mitich, the contributing author for this feature, will prepare this article. However, resource information for this feature may be forwarded to Dr. Mitich, and the contributor will receive credit.

d. *Helpful Hints for Technical Writing.* Dr. J. H. Dawson, the contributing author for this feature will prepare this article.

e. *Book Review.* Book reviews are included at the request of the Editor. Contact the Editor if you wish to prepare a review of a specific book.

f. *WSSA Communications.* Items such as the Presidential Address, other general session presentations, and special reports as requested by the WSSA Board of Directors.

3. **Advertisements.** Suitable paid advertisements for products of interest to weed scientists will be accepted for publication in *Weed Technology*.

SUBMITTING THE MANUSCRIPT

Check List. Following is a check list of information to send to Dr. Chester L. Foy, *Weed Technology* Editor, Dep. of Plant Pathol., Physiol., and Weed Sci., Virginia Polytech. Inst. and State Univ., 503 Price Hall, Blacksburg, VA 24061-0331.

1. Four manuscript copies (original plus three) plus four copies of all illustrative material. Retain a copy of your manuscript and of the photographs or drawings to insure against loss.

2. Seven stick-on labels showing the name and address of the corresponding author.

3. A covering letter with the following:

- a. Full manuscript title and author listing.
- b. The corresponding author's name, address, and telephone number.
- c. The name(s) and address(es) of three or more people in North America, not at your institution nor close colleagues, students, major professors, etc., who are competent to review the manuscript.

PREPARING THE MANUSCRIPT

Weed Technology and *Weed Science* will follow the same general editorial policy. Therefore, *Weed Technology* and *Weed Science* can be used as examples. Except as noted or in the latest reports of the WSSA Terminology Committee, *Weed Technology* follows the *CBE Style Manual*, 5th ed., Council of Biology Editors, Inc., Bethesda, MD.

Typing instructions. Type manuscripts on 22- by 28-cm paper with the lines numbered on each page. Numbers must be visible on all copies as well as on the original. Number all pages consecutively including the tables and legends for figures. Double space everything, including pages with tables, figure legends, footnotes, and literature citations. Indent three spaces for all footnotes, sentences, or paragraphs that do not begin with words in boldface type or italics.

Order. Assemble the manuscript in the following order: Title (no separate title page), Author(s), Abstract, Additional index words, Text, Literature Cited (begin on a new page), Tables, Figure Legends (begin on a new page), and Figures. The text of research articles commonly is divided into the following main sections: Introduction, Materials and Methods, Results and Discussion, Acknowledgments, and Literature Cited. However, the author(s) may use other section titles that are more appropriate for the specific manuscript. Omit a summary or list of conclusions. Place the main section headings in the center of the page and four lines below the previous section using boldface type and all capital letters. Begin subsection headings at the left-hand margin, use a squiggly underline or enter in boldface type, capitalize the first word only, and end with a period. Begin the first sentence on the same line. If sub-subsection headings are needed, begin at the left-hand margin, underline with a straight line or italicize, capitalize the first word only, and end with a period. Begin the first sentence on the same line.

DETAILED INSTRUCTIONS

Title. If possible, limit the title to no more than 80 characters. Include key words for a computerized literature search. Use WSSA-approved common and scientific names for weeds. If there is no WSSA-approved common name, use only the scientific name. Omit the author for the scientific name. Use only the common names of herbicides if they are listed on the back cover of *Weed Science*. Capitalize the first letter of the first word and all major words. Footnote the title with a superscript arabic one (1). Footnote one should be: 'Received for publication _____ and in revised form _____'.

Author(s). Place the name(s) of the author(s), in all capital letters except "and" before the last author, two lines below the title, and footnote with a superscript arabic two (2). Use of one given name and initial for each author is encouraged. In footnote two, give job titles of the authors at the institution(s) where the study was conducted, followed by the address(es) of the institution(s). New addresses of the authors should follow. See a recent issue of *Weed Technology* for title abbreviations. Addresses of U.S. authors should include the official two-letter state abbreviation and zip code.

Abstract. Place the abstract on the same page with the title and author(s). Begin with the word 'Abstract' at the left-hand margin, use a squiggly underline or enter in boldface type, and place a period after it. Begin the first sentence on the same line. The abstract body contains two components, the text and the nomenclature. The text should not exceed 3% of the length of the manuscript including tables but not including Literature Cited. It must be written as a single paragraph containing an objective, informative digest of the significant content of the paper, not simply a description of the contents. Use only common names of chemicals and plants in the text. Immediately after the text, type "Nomenclature:" in boldface or use squiggly underline. Then repeat each common name appearing in the title and abstract paired with the appropriate chemical or binomial name, and include the computer code for weeds. The preferred order is herbicides, weeds, and crops, alphabetized within each group. Example: **Nomenclature:** Glyphosate, *N*-(phosphonomethyl)glycine; 2,4-D, (2,4-dichlorophenoxy)acetic acid; cheat, *Bromus secalinus* L. #³ BROSE; wild oat, *Avena fatua* L. # AVEFA; corn, *Zea mays* L.

Note that common and chemical names are separated by commas and semicolons. Omit tables, graphs, long lists of names, literature, or footnotes, except for the computer

code for weed names. At the first mention of the herbicide rate, express the rate either on the acid equivalent (ae) basis or active ingredient (ai) basis, e.g., as kg ae/ha or kg ai/ha. Use a slash (/) between units. Omit trade names for herbicides, or other pesticides and surfactants or other adjuvants in the abstract.

Additional index words. Immediately after the abstract, begin the phrase, 'Additional index words' at the left-hand margin, use a squiggly underline or enter in boldface type, and follow with a colon. On the same line, 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 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. List information in the following order: (a) type of study, (b) herbicides or other compounds, (c) Latin binomials for weeds and crop plants not mentioned in the title (omit common names of plants), and (d) computer codes for weeds (omit # with these codes). Example: **Additional index words:** Selective applicators, glyphosate, *Cyperus rotundus*, *Glycine max*, CYPRO. Alphabetize within each subset.

Herbicide names. At the first mention of a herbicide, except in the title and abstract, give its approved common name or other designation first followed by its full chemical name enclosed by parentheses or by brackets when parentheses occur within the chemical name. Use the chemical names and common names as published by WSSA. Use only the common name or other designation thereafter. Do not repeat in the text chemical names that have been given in the Abstract. The company code name should be used in lieu of the common name if a common name has not been approved by the WSSA Terminology Committee. If the particular commercial formulation of a herbicide used may significantly affect the results, identify the formulation used in a footnote.

When the common name of the herbicide in the text refers to the parent acid, the salt or ester portion of the active ingredient should be identified. This should be at first mention of the herbicide and should be stated as the methyl ester of _____ or the isopropylamine salt of _____. The blank should contain the WSSA-approved common name of the acid equivalent. This should be followed by the chemical name of the parent acid as printed on the back cover of *Weed Science*. 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, such as 2,4-D-amine or diclofop-methyl, 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, the author must indicate at first mention of the rates whether weight refers to the acid equivalent (ae) or the active ingredient (ai), as kg ae/ha or kg ai/ha, unless this information is included in the abstract.

Soil terminology. Include the soil series with textural classification and the subgroup name, using the terminology of the U.S. Dep. Agric. Soil Conserv. Serv. publication, *Soil Taxonomy*, U.S. Gov. Printing Office, Washington, D.C; 1975. For soils outside the United States, use the local official terminology.

Adjuvant names. Where possible, use WSSA-approved terminology as given in the WSSA monograph, *Adjuvants for Herbicides*, or in *Weed Science* 26:204–205. Otherwise, use the most complete chemical description of the adjuvant available.

Plant and animal names. At the first mention of a plant or animal, give its common name followed by the approved scientific name enclosed by parentheses or by brackets when parentheses occur within the binomial. Give the genus, species, and author(s) for the binomial. Underline or italicize the genus and species. Enclose the cultivated variety of a crop plant if known in single quotes at first mention; thereafter, omit the single quotes. Example: Corn (*Zea mays* L. 'Dixie 18'), but later Dixie 18 corn. For cultivar names that are registered trade names, insert ® after the name. Use the most recent WSSA Terminology Committee Report for approved common and scientific names of weeds. After the scientific name of weeds, except in the title, place the five-letter, WSSA-approved computer code. After the author for the scientific name, follow this sequence: space, #, space, five-letter code in capitals, comma. At first use only, footnote the symbol # to give source of the code. Example: purple nutsedge (*Cyperus rotundus* L. #³ CYPRO) with footnote as follows: ³Letters following this symbol are a WSSA-approved computer code from Composite List of Weeds, Revised 1989. Available from WSSA, 1508 West University Ave., Champaign, IL 61821-3133. Use the code only for plant species included in the study; do not use the code for weeds mentioned in literature citations only. After the first mention,

use only common names. Describe microorganisms in the same way at first mention. Do not repeat in the text scientific names of plants or animals or the chemistry of herbicides that have been given in the Abstract. For the scientific and common names of crops, use those listed in the South. Weed Sci. Soc. publication, *Research Methods in Weed Science*, 3rd ed., or *Standardized Plant Names*, 2nd ed., 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.

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 Press, Inc., N.Y.).

Abbreviations. Use abbreviations as shown in the *CBE Style Manual* or as used in *Weed Technology*. Abbreviations that often cause trouble or differ from the Style Manual include the official two-letter abbreviations for states, M for molar, L for liter, ppmw for parts per million by weight, ppmv for parts per million by volume, ae for acid equivalent, and ai for active ingredient. The examples listed are correct abbreviations. See later in these Directions for Contributors to *Weed Technology* for other acceptable abbreviations commonly used in Weed Science literature. Place a period after all abbreviations in footnote two and in the LITERATURE CITED section. Do not place a period after an abbreviation in the text unless its omission might be confusing. All abbreviations used in the Abstract not shown in the Style Manual, *WSSA Herbicide Handbook*, *Weed Technology*, or *Weed Science* should be introduced in parentheses immediately after the first use of the word(s); e.g., days after treatment (DAT), thin-layer chromatography (TLC). All new abbreviations and acronyms introduced in the text must be collected in one abbreviations footnote with the appropriate superscript number. Example: ⁴Abbreviations: DAT, days after treatment; TLC, thin-layer chromatography. Avoid excessive use of acronyms.

Numbers. Use arabic numbers for all numbers with two or more digits and for all measurements of time, weight, length, area, quantity, concentration, or degrees temperature, except when the number is the first word in a sentence. Spell out numbers if they are the first word in a sentence or if they are less than 10 and not measurements, except in a series in which one number has two or more digits. Do not use a hyphen for the preposition 'to' or an \times 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.

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

Measurements and units. Report all measurements in SI units or SI-derived units. Do not use quintals or metric tons. Describe lighting conditions as irradiance (W/m^2) of photosynthetically active radiation (PAR) or as photosynthetic photon flux density (PPFD) as $\mu E/m^2/s$ or $mol/m^2/s$. 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. Use kg rather than Mg (megagrams). Express radioactivity in Bq (Becquerels) rather than μCi (microcuries). 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 rather than 1:9 (w/v). Use ml rather than cc for all measurements of volume. Express the makeup of solvent systems as follows: methyl alcohol, water, and kerosene mixture (1:2:1, v/v/v). Express the makeup of solid systems as in the following: sand and peat (1:1 by wt).

Statistical analyses. Data should be analyzed statistically. Include the analyses in tables or figures in which average values are presented. Clearly identify all statistical procedures used, including methods of analysis, numbers of replicates and subsamples, transformations used, and statistical tests performed.

Footnotes. Number all footnotes consecutively throughout the manuscript except for table footnotes which are indicated with superscript letters. Indent the first line of each footnote three spaces. Omit acknowledgments in footnotes. All personal communications should be footnoted.

Trade names. Use trade names only if necessary to describe the materials or methods adequately. If a trade name is necessary, put it as a footnote to the generic name in the text. The footnote should contain the capitalized trade

Conversion Factors for English and SI Units

To convert English to SI units, multiply by	English units	SI units	To convert SI to English units, multiply by
Length:			
2.540	Inches	Centimeters (cm)	0.3937
0.3048	Feet	Meters (mm)	3.281
1.609	Miles (statute)	Kilometers (km)	0.6214
30.48	Feet	Centimeters (cm)	0.0328
0.9144	Yards	Meters (m)	1.094
Area:			
0.4047	Acres	Hectares (ha)	2.471
6.452	Square inches	Square cm (cm ²)	0.1550
Volume:			
0.9463	Quart, liquid, U.S.	Liters (L)	1.057
1.136	Quart, imperial	Liters (L)	0.8799
3.785	Gallon, U.S.	Liters (L)	0.2642
4.546	Gallon, imperial	Liters (L)	0.2200
28.41	Ounce (British fluid)	Milliliters (ml)	0.0352
29.57	Ounce (U.S. fluid)	Milliliters (ml)	0.0338
Weight:			
28.35	Ounces (avoirdupois)	Grams (g)	0.0353
0.4536	Pounds (avoirdupois)	Kilograms (kg)	2.205
907.2	Tons (short)	Kilograms (kg)	0.0011
Pressure:			
98.0665	Kg/cm ²		
6.8941	Pounds per square inch		
0.100	Bars		
Other conversions:			
1.12	Pounds/acre	Kilograms/hectare (kg/ha)	0.892
9.35	Gallons/acre	Liters/hectare (L/ha)	0.107
0.120	Pounds/gallon	Kilograms/liter (kg/L)	8.33
0.3937	Mesh size (wires/in)	Mesh size (wires/cm)	2.54
37.000	Microcuries	Kilobecquerels (kBq)	0.0270

name and the name and address (including zip code) of the manufacturer or supplier.

Acknowledgments. Place all acknowledgments in a separate section immediately following RESULTS AND DISCUSSION. See recent issues of *Weed Technology* for examples.

Literature citations. Literature citations in the text should use the number system (see *Literature cited*) enclosed in parentheses. Two or more citations within a set of parentheses should be separated by a comma and a space. When referring to the authors of a paper with more than two authors, use et al. All citations must be listed and all listed references must be cited.

Literature cited. Begin this section on a separate page. List citations alphabetically, and number them consecutively. 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 1985 BioSciences Information Service publication, *Serial Sources for the BIOSIS Data Base*, and recent issues of *Weed Technology* and *Weed Science*. When two or more authors are listed, initials should follow the last name for the first author, but the initials should precede the last name of other authors. When three or more authors are listed, place a comma after the next to last name as well as after earlier names in the sequence. Leave a space between the period after each initial and the next initial. k references to a specific portion of a book or similar publication, cite those pages rather than the total pages of the book (Example: Bayer, L. D. and W. H. Gardner. 1972. Flow in stratified soil systems. p. 343–345 in L. D. Bayer, ed. Soil Physics. Academic Press, New York.) Publications not normally available in libraries must appear as text footnotes. Do not cite or footnote abstracts more than 3 years

Table 1. Seed weight and germination of downy brome as affected by DPX-Y6202 and fluzifop treatments at three stages of plant growth^a.

Herbicide	Rate	Growth stage	100-seed weight		Germination	
			1984	1985	1984	1985
			mg		%	
DPX-Y6202	0.07	Culm elongation	280	—	100	—
		Anthesis	300	270	99	99
		Seed fill	340	290	100	89
	0.28	Culm elongation	—	—	—	—
		Anthesis	310	250	96	71
		Seed fill	340	240	99	63
Fluzifop	0.07	Culm elongation	—	—	—	—
		Anthesis	310	—	93	—
		Seed fill	360	240	99	85
	0.28	Culm elongation	—	—	—	—
		Anthesis	—	—	—	—
		Seed fill	360	200	99	33
None			360	300	99	99
LSD (0.05)			25	35	2	10

^aDashes indicate that no seeds were produced.

old unless the information contained is of vital importance and has not been reported elsewhere.

Tables. Tables should be no more than 120 character spaces wide. Type each table on a separate sheet. Tables should be numbered with arabic numerals in the sequence of first reference in the text. First reference to tables included primarily to present results should be in the RESULTS AND DISCUSSION section. The caption, column headings, and side headings of each table should be in lower case letters except for the first word and proper nouns which should have initial capitals. Begin the table title at the left-hand margin, underline or italicize the word 'Table' and its number, and follow with a period. Begin the first sentence on the same line. Double-space the caption, the body of the table, and all footnotes. The unit of measurement for a column of figures should be abbreviated at the top of the column below the solid horizontal line. Avoid exponents in column headings. Footnotes to tables should be designated with superscript, lower-case letters. Place the footnote designation at the highest appropriate level. Study the form of Table 1. Leave a space between values and letter(s) used to indicate significant differences.

Legends for figures. Type the list of legends on a separate page. Begin the legend at the left-hand margin, underline or italicize the word 'Figure' and its number, and place a period after it. Begin the first sentence on the same line.

Figures. Experimental data can be presented in graphic or tabular form, but the same data will not be published in

both forms. Figures will be published only if they convey an essential concept that cannot be adequately expressed by words or numbers. Number figures consecutively with arabic numerals in the sequence of first reference in the text. Do not abbreviate the word 'Figure' in the text. Place the author's name(s), figure number, and label the top on the back of each figure, insert a sheet of paper between figures, and then enclose all figures in an envelope also bearing the author's name(s). Figure size should not exceed 20 by 28 cm. Never fasten figures to paper by paper clips or staples. Photographs should be clear, black and white, glossy prints trimmed of unessential portions. Color prints will be used if the authors bear reproduction costs. Computer-drawn figures that will reproduce well are acceptable. Legends for the axes of graphs must follow the 'parameter (unit)' format, e.g., Time (h). Freehand lettering is not acceptable in figures. Legible machine copies may be submitted in lieu of glossy prints for use in reviewing the paper, except for photomicrographs or other halftone pictures. Four originals are required for such figures. Figures will be published at the maximum width of one journal column (8.8 cm), unless authorized otherwise by the editor. Figure preparation should allow for such a reduction without loss of clarity or legibility. Avoid excessively coarse or excessively fine lines. The final size of all letters or symbols should be 1.0 to 2.5 mm tall, and all lines should be 0.1 to 0.6 mm thick. Photomicrographs should be supplied

in the correct size for printing with scale bars placed directly on the prints.

MANUSCRIPT REVIEW

Three or more reviewers and an associate editor will review manuscripts for content and presentation. Communicate any initial changes with the associate editor. Final acceptance or rejection is the prerogative of the editor. Correct and return author proofs to the business office within 10 days after receipt for timely publication of manuscripts.

PAGE CHARGES AND REPRINTS

Authors are asked to bear a portion of the cost of publication as shown on the flyleaf of a recent issue of *Weed Technology*. The editor can make exceptions when the author is unable to pay. Reprints on a lower grade paper than that used for the journal are available at a nominal cost. Reprints on a glossy paper (preferable for papers with halftone figures) are available at a higher cost.

ABBREVIATIONS

Below are some acceptable abbreviations as recommended by the WSSA Terminology Committee for frequently used terms or phrases which need not be footnoted:

ae:	acid equivalent
ai:	active ingredient
cec:	cation exchange capacity
dicot:	dicotyledon
ec:	emulsifiable concentrate
monocot:	monocotyledon
wp:	wettable powder

Other acceptable abbreviations for frequently used terms or phrases which need not be footnoted:

A:	absorbance
ANOVA:	analysis of variance
Bq:	becquerel
C:	Celsius

cm.:	centimeter
d:	day
DAT:	days after treatment
diam:	diameter
g:	gram
g:	acceleration due to gravity
h:	hour
ha:	hectare
ht:	height
kg:	kilogram
km:	kilometer
kPa:	kilopascal
L:	liter
LD ₅₀ :	dose lethal to 50% of test organisms
LSD:	least significant difference
M:	molar
m:	meter
min:	minute
ml:	milliliter
mm:	millimeter
mM:	millimolar
mo:	month
mol:	mole
N:	normal
nm:	nanometer
NS:	not significant
Pa:	pascal
PAR:	photosynthetically active radiation
POST:	postemergence
PPFD:	photosynthetic photon flux density
PPI:	preplant incorporated
ppmv:	parts per million by volume
ppmw:	parts per million by weight
PRE:	preemergence
rpm:	revolutions per minute
s:	second
μl:	microliter
μM:	micromolar
μmol:	micromole
UV:	ultraviolet
vol:	volume
WAT:	weeks after treatment
wk:	week
wt:	weight
yr:	year