

Chapter 1. Manuscript Preparation

The American Society of Agronomy (ASA), Crop Science Society of America (CSSA), and Soil Science Society of America (SSSA) have a reputation for publishing high-quality papers in their journals, books, and other publications. Authors are strongly urged to have their papers thoroughly reviewed by competent colleagues before submitting those papers for consideration by any ASA, CSSA, and SSSA publication.

The format used in ASA, CSSA, and SSSA journals differs from that used in books, special publications, and other media (see Chapter 10). This chapter deals mainly with journal formats, but the discussion applies broadly to the other formats.

For questions of English and of scientific style and format beyond what is covered in this manual, consult the style manuals of the American Chemical Society (Coghill and Garson, 2006) and the Council of Science Editors (CSE, 2006). If a question is still not resolved in these sources, consult the *Chicago Manual of Style* (UCP, 2010). All three books provide detailed examples, along with general principles and advice. Recent issues of ASA, CSSA, and SSSA journals also provide examples of the desired format. Be consistent in whatever style choices you make.

All manuscripts are critically reviewed before they are published in any ASA, CSSA, or SSSA journal, monograph, book, or special publication. Written guidelines for manuscript submission are published periodically in all ASA, CSSA, and SSSA journals and can be accessed online by visiting <https://www.agronomy.org/publications>, <https://www.crops.org/publications>, or <https://www.soils.org/publications> and clicking on the journal of interest.

DETAILS OF MANUSCRIPT PREPARATION

Eligibility of Authors

Membership is not required for publishing in ASA, CSSA, or SSSA publications. Some of the journals, however, assess a surcharge to nonmembers. Authors who wish to join a society to avoid this charge should do so before the paper is accepted for publication. For information on membership, visit <https://www.agronomy.org/renewals>, <http://www.crops.org/renewals>, or <http://www.soils.org/renewals>. Eligibility policies, updated as necessary, are summarized in each journal's masthead.

Publication Charges

Publication charges vary depending on the journal and whether at least one of the authors is a member of ASA, CSSA, or SSSA. These charges are subject to change. Check the journals' mastheads for current information.

Applicable charges for reprints are shown on the Publications Charge and Reprint Order Form authors complete at the proof stage.

No Prior Publication, No Simultaneous Submission

Except for reviews or timely essays, papers published in the scientific journals of the ASA, CSSA, and SSSA must be original reports of research. Submission of a scientific manuscript for review is understood to imply that the work is original and unpublished and not being considered for publication elsewhere. If portions of the paper have been submitted or published elsewhere, the authors are required to disclose that fact at the time of submission and to provide copies of relevant prior publications.

Whether publication in nontechnical outlets constitutes prior publication is decided on a case-by-case basis. In general, publication in nontechnical media will be considered prior publication only if substantially all of the data and conclusions have been published.

Manuscript Handling

Manuscripts are handled by similar, but not identical, procedures in ASA, CSSA, and SSSA journals. The basic policy is that at least two independent scientists must agree before a paper is accepted for publication or released back to the author (rejected). Release of a paper by a journal does not preclude its resubmission to that same or another ASA, CSSA, SSSA journal after its weaknesses have been eliminated. For example, a paper released because it needed another year of data may be resubmitted after those data have been gathered and the results incorporated into the paper. Such a resubmission must be accompanied by a copy of the original release letter. A manuscript may be released before review, either because it does not conform to acceptable standards or because the subject matter is outside the scope of the journal.

Manuscript Submission

Authors are encouraged to submit manuscripts to a journal's editorial board using the journal's online manuscript submission system. Consult the instructions in the masthead and in the instructions to authors of the journal you want to submit to for its requirements and procedures.

Receipt of manuscripts will be acknowledged. Normally, communication from editorial board members and the professional editing staff at headquarters is with the corresponding author only, and normally the submitting author is the corresponding author (see Authorship, below). The cover letter or title page should give the corresponding author's current phone and fax numbers and email address, for use during review and production.

Occasionally the editor of a journal who receives a submission may determine that the paper's subject matter is more suitable for a different journal. In those cases, the editor will contact the paper's author or authors before review of the paper begins to investigate the possibility of a transfer. If the author concurs, the editor of the other journal will also be contacted before the transfer is made.

Manuscript Processing

Upon receipt, each paper is assigned a unique manuscript number that identifies both the manuscript and the publication (and, for journals, the year). A typical journal manuscript number is in the form $XNN-nnnn$, where X is a letter identifying the journal, NN identifies the year, and $nnnn$ is the number of the particular manuscript (e.g., Q11-0042 is the 42nd manuscript submission received for the *Journal of Environmental Quality* in 2011). This number is communicated to the corresponding author along with acknowledgment of receipt. Refer to the manuscript number in all subsequent communications. Authors will be informed (and usually asked for additional input) as the manuscript moves through the various steps involved in review, acceptance or release, and production. (See also Chapter 9.)

After a manuscript has been accepted for publication by the designated scientist member of the editorial board, it will be edited for style and grammar and prepared for publication by the professional editorial staff at headquarters.

Anonymous Review

All papers submitted to ASA, CSSA, SSSA journals are given an anonymous review—meaning that the names of reviewers are not revealed to the authors of the papers or to the other reviewers.

Agronomy Journal and the *Soil Science Society of America Journal* use a double-blind process and also withhold the names of the authors from the reviewers. For these journals, prepare the manuscript with no identifying information (e.g., no byline, addresses/ affiliations, acknowledgments, etc.; these will be added after a manuscript has been accepted). Take care to label tables and figures with reference to the paper's title, not author names. Any identification in headers or footers should be similarly anonymous. As a last consideration, authorship may be unintentionally revealed through such software features as document summaries. If this is a concern, consult your local software experts.

When authors submit a manuscript via the online manuscript submission system, they will be asked to enter contact information into the system database, and the editors will have access to this information so that they can contact the authors about the outcome of the review.

Consult the editor of the journal with any specific questions you may have regarding anonymous review.

SUBMISSION SPECIFICS

All accepted manuscript files will be edited in Microsoft Word. Therefore, authors are encouraged to compose manuscripts in Microsoft Word. The manuscript must be double-spaced, with line numbering.

Avoid the temptation to use complicated font and feature available in Microsoft Word. Limited use of italics, bold, and superscripts and subscripts is acceptable.

Do not use such word-processing features as automatic footnoting and outlining. These features interfere with both electronic editing and typesetting. If you need to place a numbered list in your manuscript, enter the numbers and use appropriate tabs and indents manually instead of using automatic outlining.

Headings and Subheadings

Headings guide the reader, but too many headings can be distracting. Keep headings short.

Differentiate between the heading levels in your manuscript. For style, examine recent issues of the publication to which the manuscript will be submitted. In most ASA, CSSA, SSSA journals, Level 1 headings (the main headings) are used for the main sections, such as Materials and Methods, Results, and Discussion, with Level 2 headings often used for subsections. Level 3 and Level 4 headings are allowed, but use them sparingly.

Estimating Length of Journal Articles and Book Chapters

The best length estimates are obtained by counting the number of words; most word-processing software does this quickly and easily. About 1000 words will fill one journal page, and about 500 words will fill one book page.

Space required for figures can be estimated from the size of the originals and the reproduction percentage (usually 40 to 60%, except 60 to 100% for photographs) that will be made in preparing the illustrations for production. Space required for tables can be estimated from the number of lines of headings, subheadings, and data rows. Ten lines require about 25 mm (1 inch) of column space. Tables with many columns or complex data typically require the full width of the published page (two-column width), but a table may fit across half the

page (one-column width) if row headings are simple and data columns are few or narrow. A rule of thumb is that a table with more than about 60 characters per row requires two-column width in print.

TYPES OF JOURNAL ARTICLES

The most common type of paper to appear in ASA, CSSA, and SSSA journals is the standard research paper. The journals also publish other paper types. Consult the instructions to authors of each journal for a description of all current types of papers.

Review Papers

Review papers are usually less formal than full-length articles. Such papers should provide a synthesis of existing knowledge and give new insights or concepts not previously presented in the literature, or at least not with the same level of detail.

These articles should not be considered exhaustive reviews of the literature (as per *Annual Review of Plant Physiology and Molecular Biology*) but should include enough literature review to provide a basis for understanding and interpretation of the topic under consideration.

A good review is often one of the most important ways to advance an area of science. Readers expect a review paper to

- deal with an important subject that needs a scholarly review,
- cover the entire spectrum of the subject, not just the segment about which the author of the review paper has published articles,
- present a balanced coverage that is fair to all the work it reviews, and
- add a perspective to the entire subject and contribute significantly to understanding.

Issue Papers

The intent of these papers is to stimulate discussion and possibly a rethinking of current views. They may be provocative and controversial.

Perspectives papers (*Crop Science*) and Forum papers (*Agronomy Journal*) give a broader and often more personal perspective on a subject than a review paper. Although most are invited by the editor, volunteer submissions are welcomed.

Environmental Issues papers (*Journal of Environmental Quality*) include discussion of contemporary environmental issues from a combination of scientific, political, legislative, and regulatory perspectives. These papers often have more of a philosophical bent but must still be based on a foundation of good science.

Notes and Short Communications

Notes and Short Communications represent a separate category of scientific manuscripts. Papers in this category typically describe research techniques, apparatus, and observations. Observations usually are limited to studies and reports of unrepeatable phenomena or other unique circumstances. These articles are usually shorter than research papers, normally occupying four or fewer printed pages in the journal.

Occasionally an editor may determine that a paper submitted as a research paper will better fit this category, or vice versa. If the author agrees, the manuscript can be transferred to or from this category of papers.

The review procedure for these papers is identical to that for research papers.

Letters to the Editor

All the journals publish Letters to the Editor. Letters may contain comments on articles appearing in the journals or general discussions about agronomic research and are limited to one printed page. Letters must be approved by the editor and may be peer reviewed. If a letter discusses a published paper, the author of that paper will be invited to submit a response to the comments; typically, the response is published along with the letter.

Executive Summaries

Authors of *Vadose Zone Journal* and *The Plant Genome* articles will be asked to prepare a brief summary. These are published separately from the article as a way of highlighting research in the journal. The structure of the summary is as follows:

Sentence 1: Statement of the problem.

Sentence 2: Summary of the approach used in the experiments.

Sentence 3 and (if needed) 4: Summary of key findings.

Final sentence: Statement of the impact of the findings.

Research Papers

Manuscripts of research papers prepared for ASA, CSSA, and SSSA journals are normally arranged in the following order:

1. Title and byline.
2. Author–paper documentation (addresses/affiliations, email address of the corresponding author, etc.—see below).
3. Abstract.
4. Introduction (including literature review). This is the only section that has no heading.
5. Materials and Methods.
6. Results. This section is sometimes combined with the discussion section.
7. Discussion. This may include a subsection for conclusions. No separate summary section is used because it would duplicate the function of the abstract; a summary statement may, however, be given as a closing paragraph.
8. Acknowledgments (optional).
9. References.
10. Figure captions, then tables, then the figures themselves.

For *Agronomy Journal* and *Soil Science Society of America Journal*, the byline, author–paper documentation, and acknowledgments should not be included at the time of submission to ensure a double-blind review—authors will be asked to add these items once the paper has been accepted.

Sometimes a Theory section substitutes for or precedes Materials and Methods. Any section may include subheadings to guide the reader through significantly different aspects of the topic.

Manuscript Format

Title. The title should represent the article’s content and facilitate retrieval in indexes developed by secondary literature services. The terms in the title should be limited to those words that give significant information about the article’s content. Start the title with key words—not with words such as ‘Effect of’ or ‘Influence of.’ Many readers peruse titles in a journal’s table of contents to decide whether to turn to a given paper. A good title briefly

identifies the subject, indicates the purpose of the study, and introduces key terms or concepts. It must do all this briefly or lose its point. The recommended limit is 12 words.

Keep titles free of nonstandard abbreviations, chemical formulas, or proprietary names, and avoid unusual or outdated terminology. Use common names of crops and chemicals. If a crop or microorganism has no common name or if the common name is in dispute, then the scientific name (with authority) may be used in the title.

Series titles are used infrequently in ASA, CSSA, SSSA journals. An author contemplating a series of articles on the same subject should refer to the journal's current editorial policy. Articles in a series are not discouraged as such, but the editors need to be assured that all papers in the series are available for review and that the reader will be able to obtain earlier and later material in that series.

Titles may be descriptive (e.g., Variables A and B under C Conditions), declarative (A Relates to B in C Manner), or even a question (Does A Do X?). EXAMPLES: Soil-Water and Root Dynamics under Hedgerow Intercropping in Semiarid Kenya (Govindarajan et al., *Agron. J.* 88:513–520); Clipping Foliage Differentially Affects Phytosiderophore Release by Two Wheat Cultivars (Hansen et al., *Agron. J.* 87:1060–1063); Is Soil Temperature Better Than Air Temperature for Predicting Winter Wheat Phenology? (McMaster and Wilhelm, *Agron. J.* 90:602–607).

Authorship. We encourage the use of full names in bylines (e.g., Morgan L. Jones or M. Louise Jones instead of M.L. Jones). The first person listed in the title is, by definition, the *senior author*; the *corresponding author* deals with proofs and, after publication, with reprint requests. An asterisk (*) follows the name of the corresponding author in the byline, matched to the words “*Corresponding author” at the end of the author–paper documentation paragraph. Following standard American rules of punctuation, the asterisk comes after any comma (e.g., Frances L. Dudeck, Sayeed S. El-Marhawi,* M. Agnes Santello, and Vernon S. Foell). The authors of the paper decide the sequence of author names; the order should be agreed upon by all authors involved.

Author–Paper Documentation. The single-paragraph author–paper documentation appears on the first page of the published article. The purpose is to give addresses for all authors and an email address for the corresponding author (*author documentation*), as well as the date the paper was received for review and any necessary institutional identification such as a grant support, dissertation requirement, or a journal article number (the *paper documentation*). In the manuscript, put this paragraph after the byline, on the cover page only.

If all authors are at one address, do not repeat the names in the documentation paragraph. Otherwise, group together all authors at a single address in the order they appear in the byline. Give only initials and surname, without professional titles. Following complete addresses for all authors, give any sponsoring institutional information, with brief addresses; then a statement of “Received [date].”; and lastly “*Corresponding author” (immediately followed by that person’s email address in parentheses). EXAMPLE:

A. Brandon Holm, Carl D. James,* Maria C. Dinescu, and Albert F. Barrow

A.B. Holm and A.F. Barrow, Dep. of Crop Sciences, Univ. of Illinois, 1102 S. Goodwin Ave., Urbana, IL 61801; and M.C. Dinescu, Dep. of Natural Resources and Environmental Science, Univ. of Illinois, 1102 S. Goodwin Ave., Urbana, IL 61801; C.D. James, Dep. of Agronomy, Purdue Univ., West Lafayette, IN 47907. Joint contribution of the Illinois and Indiana Agric. Exp. Stn. Purdue Journal no. 1234. Received 11 Jan. 1999. *Corresponding author (cjames@dept.agry.purdue.edu).

Brief acknowledgment of grant funding can be included in this documentation paragraph, but extensive support information and personal thanks belong in the acknowledgments section at the end of the paper. Any required government or institutional disclaimer in reference to commercial products or trade names mentioned in the text can also be placed in this section.

Footnotes. Avoid using footnotes.

Abstract. A journal abstract has two typical uses. Printed at the head of a scientific paper, an abstract helps readers decide whether to delve into the paper as a whole; abstracts are also published via abstracting and indexing services. Because the abstract will be seen and read by many more people than will read the paper, everything that is important in the paper must be reflected in the abstract. The abstract should call attention to new techniques, observations, or data. Be specific.

In essence, an *informative abstract* (also called a *substantive abstract*) presents the paper in miniature, complete within itself. It moves from an introductory statement of the rationale and objectives or hypotheses, through materials and methods, to the results and conclusions. (A *descriptive abstract* is more like a table of contents for the paper and is rarely used in scientific publications except, perhaps, for review or opinion papers.) A number of books and articles offer useful advice on preparing abstracts (e.g., O'Connor and Woodford, 1976; O'Connor, 1979; Day, 1988), and an Internet search for "informative abstract" is likely to have recent course materials on scientific writing among the results.

Because an informative abstract has to stand alone, do not deflect the reader with phrases such as "will be discussed" or "will be explained." For the same reason, do not include reference, figure, or table citations. Equations also are inappropriate in an abstract unless they are the central finding of the study. Limit your use of abbreviations, and define the ones you do use.

At first mention in the abstract, give the complete scientific name (with authority) for plants. In the body of the text, give scientific names of other organisms, including causal agents of diseases. The scientific names for larger animals (e.g., sheep) do not need to be given unless germane to the article and/or there may be confusion as to what animal is being discussed. The full names of chemicals and complete soil series descriptions should be provided upon first mention in the body of the text.

Write the abstract as a single paragraph, with a limit of 250 words (~1250 characters) for full-length papers and 150 words (~750 characters) for notes. Some abstracting services truncate text beyond a certain length; what is lost is most likely the conclusions.

We reproduce below (with permission of the author) a published abstract with its structure labeled. This example shows both the overall construction of the abstract and the contents of its parts. (From *Agron. J.* 78:720–726 [1986], updated to conform to new style guidelines.)

Introduction. Use the introduction to review published literature and issues related to your topic. A thorough introduction helps the reader recognize what your research contributes to the current knowledge in your subject area. Begin your article by clearly identifying its subject, and state the hypothesis or definition of the problem the research was designed to solve. To orient readers, give a brief reference to previous concepts and research. Limit literature references to essential information, and do not rely on old references when newer ones are available.

Keep the introduction short, but include (i) a brief statement of the problem that justifies doing the work, or the hypothesis on which it is based; (ii) the findings of others that will be further developed or challenged; and (iii) an explanation of the general approach

**Dryland Grain Sorghum Water Use, Light Interception,
and Growth Responses to Planting Geometry**

J.L. Steiner*

ABSTRACT

<i>Rationale</i>	Crop yields are primarily water-limited under dryland production systems in semiarid regions.
<i>Objectives or hypothesis</i>	This study was conducted to determine whether the growing-season water balance could be manipulated through planting geometry.
<i>Methods</i>	The effects of row spacing, row direction, and plant population on the water use, light interception, and growth of grain sorghum [<i>Sorghum bicolor</i> (L.) Moench] were investigated at Bushland, TX, on a Pullman clay loam (fine, mixed, superactive thermic Torrertic Paleustoll).
<i>Results</i>	In 1983, which had a dry growing season, narrow-row spacing and higher population increased seasonal evapotranspiration (ET) by 7 and 9%, respectively, and shifted the partitioning of ET to the vegetative period. Medium population crops yielded 6.2 and 2.3 Mg ha ⁻¹ of dry matter and grain, respectively. High population resulted in high dry matter (6.1 Mg ha ⁻¹) and low grain yield (1.6 Mg ha ⁻¹), whereas low population resulted in low dry matter (5.4 Mg ha ⁻¹) and high grain yield (2.3 Mg ha ⁻¹). Row direction did not affect water use or yield. In 1984, dry matter production for a given amount of ET and light interception was higher in the narrow-row crops. Evapotranspiration was less for a given amount of light interception in the narrow-row crops and in the north-south row crops.
<i>Conclusions</i>	Narrow-row planting geometry appears to increase the partitioning of ET to the transpiration component and may improve the efficiency of dryland cropping systems.

and objectives. This last part may indicate the means by which the question was examined, especially if the methods are new.

Abbreviations and acronyms defined in the abstract do not need to be defined again in the main body of the text.

Materials and Methods. In the Materials and Methods section, give enough detail to allow a competent scientist to repeat the experiments, mentally or in fact.

In the materials section, describe the preparation method, equipment, and measurements, including SI units. Not all materials need to be identified by brand name and manufacturer. Consider first whether the particular product is essential to the outcome of the research, and then how readily available that particular product might be to other researchers. For example, if any standard test tube will work, it is not necessary to state the manufacturer of the tubes you used. If, however, the test tube must be lined with Teflon or be made of Pyrex (or in any other way differ from standard), then say so and, if such a test tube is not readily available, tell where it can be obtained.

When a product must be identified by trade name, add the name of the manufacturer or a major distributor parenthetically after the first mention of the product. EXAMPLE: "Soil respiration was measured with a CO₂ analyzer (Model LI-6251, LI-COR)." If the particular product is both essential to the research and no longer commercially available, describe a suitable substitute and its source.

In the case of specially procured or proprietary materials, give the pertinent chemical and physical properties (e.g., purity, pH, concentration). Chemical rather than trade names are preferred. EXAMPLE: "Reference Suwannee River fulvic acid (IHSS-FA) and humic acid (IHSS-HA) were purchased from the International Humic Substance Society (IHSS)."

Plants and other organisms, including viruses, insects, bacteria, and pathogens should be identified accurately at first mention by scientific name (with authority for plants) and

cultivar name if applicable. soil taxonomy, and special characteristics. Scientific names for larger animals (e.g., sheep) should be given if relevant to the article and/or there may be confusion as to what animal is being discussed. Identify soils by Great Group name at least, and preferably by soil series name and description.

Cite references for your methods, and reference the edition you actually used. If the techniques are widely familiar, use only their names. If a method is modified, outline the modification or cite a reference, unless the modification is trivial. Give details of unusual experimental designs or statistical methods.

The Materials and Methods section may be arranged chronologically, by a succession of techniques, or in any other logical manner, such as by experiment or location, and may include tables and figures.

Results. Use tables, graphs, and other illustrations in the Results section to provide the reader with a clear understanding of representative data obtained from the experiments. Call attention to significant findings and special features (e.g., one quantity is greater than another, one result is linear across a range, or a particular value is optimum), but do not repeat in detailed prose what is already clear from an examination of the graphics.

If you have minimal results, describe them in the text. For more complicated results, you may want to summarize them in tables or figures.

If you do not have a separate Discussion section, relate the results to your objectives and to each other.

Discussion. Use the Discussion section to interpret your results. Give particular attention to the problem, question, or hypothesis presented in the introduction. A good discussion typically covers most or all of the following steps:

1. Relate the results to the original objectives.
2. Explain the principles, relationships, and generalizations that can be supported by the results.
3. Address any exceptions or lack of correlation that qualify the findings, or difficulties that point to areas for further investigation.
4. Explain how the results relate to previous findings, whether in support, contradiction, or simply as added data.
5. Present conclusions, supported by a summary of the evidence.

Whether combined with the Results section or standing alone, the Discussion section should focus on the meaning of your findings, not recapitulate them.

Scientific speculation is encouraged, but it should be reasonable, firmly founded in observation, and subject to tests. It must also be identified as such. Where results differ from previous results for unexplained reasons, possible explanations should not be labored. Controversial issues should be discussed clearly and fairly.

References. The References section lists only the literature cited in the paper. Authors are encouraged to cite only significant, published, and up-to-date references.

Figure Captions, Tables, and Figures. Group the captions for all figures together following the references. Tables follow the figure captions. No separate list of table titles is needed.

Prepare figures and provide them in high-resolution TIF or EPS files. This is the required format for the layout process. If a figures are larger than 5 MB, contact the appropriate editor at the Headquarters Office following acceptance to arrange for ftp transfer.

(You will need to reduce the resolution for the review process, but the high-resolution version is needed for publication.)

To maintain clear contrast, use line patterns instead of shading and avoid thin, light lines. As feasible, plan for reduction to one-column width (84 mm, or ~3.25 inches). The original should be one-third to one-half larger than the intended final size. Keep relative sizes in mind when adding symbols, letters, and numbers.

For books, figures are sometimes separated into black-and-white illustrations published within chapters and full-color illustrations published as a set for the whole book, as a cost-saving measure. In these cases, full-color illustrations are denoted as *plates*, with separate numbering system (e.g., Plate 1, Plate 2) to differentiate them from the black-and-white figures (Fig. 1, Fig. 2). Contact your book editor to discuss whether color figures will be included in a separate section and identified as plates.

The sequence of these final elements in a book manuscript is as follows: The figure caption pages (and plate caption page, if there is one) follow the reference list and are followed by the tables, in numerical order. Do not intersperse the tables within the text of the paper.

SUPPLEMENTAL MATERIAL

Journals of ASA, CSSA, and SSSA accept supplemental material that will enhance and support your research. Supplemental files will appear online and will be accessible from the issue TOC and article-level pages. Authors are encouraged to submit materials that contribute to the content and quality of the article, or to use supplemental material as a means to shorten the text of manuscripts. Ancillary information such as some experimental data, including schematics of apparatus and maps of study sites, or material of interest mainly to specialists are examples of potential supplemental material. When using supplemental material to shorten the text of a manuscript, keep in mind that the Materials and Methods section should provide enough detail to allow the reader to determine whether the interpretations are supported by the data.

Supplemental material must undergo peer review and should be submitted along with the original manuscript. A one- or two-sentence description of the supplemental material should be included in the main manuscript directly preceding the reference list. Supplemental tables and figures should be cited in order in the main manuscript.

Supplemental material should be formatted with a cover sheet listing authors and manuscript title, and the number of pages, figures, and tables. Tables and figures should be numbered Supplemental Table S1, S2, Supplemental Fig. S1, S2, etc.

Ideally, the supplement should consist of a single PDF or MS Word file (rather than a series of files with individual images or structures); however, most file types are allowed, including video, spreadsheets, and PowerPoint files. To keep file size down, please compress the files if possible. The following are not allowed: executables (.exe) of any kind or TeX.

CITATION STYLE

The author–year notation system is required; do not use numbered notation. For within-text citations of papers with two authors, name both. With three or more authors, use "et al." For two or more articles using the same within-text citation, add a distinguishing lowercase letter (a, b, c, etc.) to the year in both the text and references list. Separate citations with a semicolon. For citations of multiple works by the same authors, the author names do not need to be repeated. EXAMPLES:

(Murphy, 2001; Murphy and Smith, 2001; Murphy et al., 2001)

(Murphy, 2001; Murphy and Wong, 2001a, 2001b; Murphy et al., 2001)

(Murphy, 2001; Murphy et al., 2001, 2002; Murphy and Davis, 2002)

Citing Quotations

Direct quotations from a book or very long chapter require a page number in the text citation, to spare the reader a tedious hunt for the original wording in context. When practical, the exact page number is preferred for any quotation.

EXAMPLE [*from Weidenhamer, 1996: Agron. J. 88:867*]: Harper (1977, p. 372), who called for a Koch's postulates type of approach..., remained skeptical about the feasibility of designing "an experiment that conclusively tests the toxin hypothesis of plant interaction."

Citing Unpublished Sources

In ASA, CSSA, and SSSA publications, only literature available through libraries or other readily accessible public media may be cited. All other material, such as personal communications (information from someone other than the authors) and unpublished data (information from one or more author named in the byline), is cited in the text as parenthetical matter. Give both the source and the date for the information. EXAMPLES:

(R.D. Jackson, personal communication, 1997)

(unpublished data, 1998) [*when all authors are responsible for the data*]

(Faribault, unpublished data, 1998) [*when only the author Faribault is responsible for the data*]

Placing "unpublished data" or "personal communication" between the name and year clearly distinguishes these citations from those keyed to the reference list.

The terms *in review* and *in press* are not synonymous. Material that is in press has been accepted for publication but has not yet appeared in print. This material may be listed in reference sections because the reader will eventually be able to locate it. Material submitted for publication but not yet accepted may be included in the reference list of your paper during the review process, but upon your paper's acceptance these entries must be converted to citations of unpublished data or personal communication. If the change from review status to in press status occurs before or by the proof stage, the citation can be restored and completed.

Reviewers and editors are not expected to verify the accuracy of the literature citations. Authors should check the alphabetical reference list against the citations in the body of the manuscript as one of the last steps before submitting the manuscript for publication.

REFERENCES

Preparing the Reference List

Authors are responsible for the completeness and accuracy of the all references.

If you have consulted abstracts, theses or dissertations, extension bulletins, in-press articles, or secondary materials during your research or for early drafts of the paper, check again upon acceptance for publication whether this information has by now been published in a more readily available source.

Alphabetization

Arrange the list alphabetically by the surnames of authors. All single-authored articles of a given individual should precede multiple-author articles of which the individual is senior author. Alphabetize entries with the same first author according to surnames of succeeding coauthors and then by year, when the names are repeated exactly. Two or more

articles by the same author (or authors) are listed chronologically and then by title. Articles by the same author or authors published within a single year by adding lowercase letters, a, b, c, etc., to the year. EXAMPLE:

- Shotwell, C.A., and G.W. Smith. 2001.
- Shotwell, O.L. 1998.
- Shotwell, O.L., M.L. Goulden, and C.W. Hesseltine. 1994.
- Shotwell, O.L., C.W. Hesseltine, and M.L. Goulden. 1993a.
- Shotwell, O.L., C.W. Hesseltine, and M.L. Goulden. 1997.
- Shotwell, O.L., C.W. Hesseltine, E.E. Vandegraft, and M.L. Goulden. 1993b.
- Shotwell, O.L., W.F. Kwolek, M.L. Goulden, L.K. Jackson, and C.W. Hesseltine. 1991.
- Shotwell, O.L., and D.W. Zweig. 1994a.
- Shotwell, O.L., and D.W. Zweig. 1994b.

In the reference list itself, give the names of all authors if less than six authors. If the paper has more than six authors, the rest may be abbreviated to "et al." Do not use a dash to indicate names repeated from the prior entry. Do not use "ibid." or "op cit."

Authors

An author can be a person, committee, organization, or other party responsible for the work. Avoid the use of "anonymous." Only when no author can be determined for a document should "anonymous" be used. For Web pages, it is most common to use the name of the organization as the author. Similarly, use the organization and location as the publisher of the site. EXAMPLES:

- University of Wisconsin Extension. 2012. University of Wisconsin automated weather observation network. University of Wisconsin Extension. <http://www.soils.wisc.edu/wimnext/awon/awon.html> (accessed 18 Jan. 2012).
- SAS Institute. 2004. User's guide: Statistics. SAS Inst., Cary, NC.

The author's name is listed by last name first, followed by initials (Smith, J.R.). For works by more than one author, only the first author's name is inverted (Smith, J.R., M. Jones, and C. Rosen).

Titles

Use sentence-style capitalization for titles and subtitles of articles, book chapters, bulletins, and books, capitalizing the first letter of the first word as well as proper nouns and adjectives. Capitalize journal titles, abbreviated or not.

Journal Titles

Journal titles are abbreviated according to an international standard, as given in *Chemical Abstracts Service Source Index*, which is available in most research libraries and at <http://cassi.cas.org/search.jsp>. See Appendix A for guidelines and examples. If you are unsure of the correct abbreviation, write out the title in full (or at least the part in question).

Acronyms

Use acronyms or commonly understood abbreviations (e.g., SSSA, USEPA, ICRISAT) for publishers in the reference list and in the text citation. A list of abbreviations appropriate for use in references is included in Appendix A. For institutional authors, it is usual to spell out acronyms and abbreviations. As an exception, acronyms are used

for IPCC and the international agricultural research centers of the Consultative Group on International Agricultural Research (CGIAR) system (www.cgiar.org). Use standard English abbreviations for names of states in journal titles; with publisher locations, use postal state abbreviations to identify US states or Canadian provinces (see Table 2-2).

Style of the Reference List

Some common types of references are shown below. Extensive rules and examples for references of all kinds are given in the *Chicago Manual of Style* (UCP, 2010, Chapters 14 and 15), *Scientific Style and Format* (CSE, 2006, Chapter 30), and the *ACS Style Guide* (Coghill and Garson, 2006, Chapter). Although the examples given do not always conform to the details of ASA, CSSA, SSSA style, they can be used to prepare reference entries that contain all the required elements.

Journal Articles

Each reference to a periodical publication must include, in order, the author(s), year of publication, full title of the article, publication in which it appears, and volume and inclusive page numbers. For publications without consecutive pagination (i.e., each issue within the volume begins with page 1), include the issue number. EXAMPLE: 11(2):5–10.

First author, second author, and third author. Year. Title of article. Journal Title Vol.:pages.

Bordoli, J.M., and A.P. Mallarino. 1998. Deep and shallow banding of phosphorous and potassium as alternatives to broadcast fertilization for no-till corn. *Agron. J.* 90:27–33.

Lemmon, H. 1986. Comax: An expert system for cotton crop management. *Science* 233:29–32.

Lyle, W.M., and J.P. Bordovsky. 1995. LEPA corn irrigation with limited water supplies. *Trans. ASAE* 38:455–462.

Online Journal Articles

For electronic-only journals, the format is similar to print journal articles. Provide the DOI at the end of the citation, instead of the URL, which may change with time.

Doerge, T.A. 2002. Variable-rate nitrogen management creates opportunities and challenges for corn producers. *Crop Manage.* doi:10.1094/cm-2002-0905-01-RS

Kato, C., T. Nishimura, H. Imoto, and T. Miyazaki. 2011. Predicting soil moisture and temperature of Andisols under a monsoon climate in Japan. *Vadose Zone J.* 10:541–551. doi:10.2136/vzj2010.0054

Nippgen, F., B.L. McGlynn, L.A. Marshall, and R.E. Emanuel. 1998. Landscape structure and climate influences on hydrologic response. *Water Resour. Res.* 47:W12528. doi:10.1029/2011WR011161

Article in serial publication.

Brown, P.D., and M.J. Morra. 1997. Control of soil-borne plant pests using glucosinolate-containing plants. *Adv. Agron.* 61:167–231.

Edwards, A.C., and M.S. Cresser. 1992. Freezing and its effect on chemical and biological properties of the soil. *Adv. Soil Sci.* 18:59–79. [*After Vol. 20, Advances in Soil Science is no longer published as a serial with volume numbers. Treat listings in later editions as you would a chapter in a book.*]

Article not in English with English abstract.

Title translated into English

Rosolem, C.A., J.C.O. Silverio, and O. Primaves. 1982. Foliar fertilization of soybean: II. Effects of NPK and micronutrients. (In Portuguese, with English abstract.) *Pesq. Agropec. Bras.* 17:1559–1562.

Title in original language

Rosolem, C.A., J.C.O. Silverio, and O. Primaves. 1982. Adubação foliar de soja: II. Efeitos de NPK e micronutrientes. (In Portuguese, with English abstract.) *Pesq. Agropec. Bras.* 17:1559–1562.

Article not in English and without English abstract (translated title).

Vigerust, E., and A.R. Selmer-Olsen. 1981. Uptake of heavy metals by some plants from sewage sludge. (In Norwegian.) *Fast Avfall.* 2:26–29.

Article with known erratum follow-up.

Baker, J.M., E.J.A. Spaans, and C.F. Reece. 1996. Conductimetric measurement of CO₂ concentration: Theoretical basis and its verification. *Agron. J.* 88:675–682 [erratum: 88(6):vi].

Articles in press.

For an in-press article, use the current year as the date. If the manuscript has been posted online ahead of publication, include the DOI (digital object identifier).

Author. Year. Article title. Journal Title DOI number (in press).

Magazine Article

Davenport, C.H. 1981. Sowing the seeds. *Barron's*, 2 March, p. 10.

Mulvaney, D.L., and L. Paul. 1984. Rotating crops and tillage. *Crops Soils* 36(7):18–19.

Books (including bulletins, reports, multivolume works, series)

Brown, J. 1966. Soils of the Okpilak River region, Alaska. CRREL Res. Rep. 188. US Army Cold Reg. Res. Eng. Lab, Hanover, NH.

Budavari, S., editor. 1996. The Merck index. 12th ed. Merck Publ. Group, Rahway, NJ.

California Certified Organic Farmers. 1995. California Certified Organic Farmers certification handbook. CCOF, Santa Cruz.

Chemical Abstracts Service. 1989. Chemical Abstracts Service source index: 1907–1984 cumulative, plus annual supplements. Chemical Abstracts Service, Columbus, OH.

Doty, W.T., M. Amacher, and D.E. Baker. 1982. Manual of methods: Soil and environmental chemistry laboratory. Rep. 121. Dep. of Agronomy, Pennsylvania State Univ., University Park.

Dzombak, D.A., and F.M.M. Morel. 1990. Surface complexation modeling: Hydrous ferric oxide. John Wiley & Sons, New York.

Fehr, W.R., and C.E. Caviness. 1977. Stages of soybean development. Spec. Rep. 80. Iowa Agric. Home Econ. Exp. Stn., Iowa State Univ., Ames.

Food and Agricultural Organization. 1994. Production and trade yearbook, 1993. FAO, Rome.

- Goering, H.K., and P.J. Van Soest. 1971. Forage fiber analysis (apparatus, reagents, procedures, and some applications). Agric. Handb. 379. US Gov. Print. Office, Washington, DC.
- Schneiter, A.A., editor. 1997. Sunflower technology and production. Agron. Monogr. 35. ASA, CSSA, and SSSA, Madison, WI.
- Snedecor, G.W., and W.G. Cochran. 1989. Statistical methods. 8th ed. Iowa State Univ. Press, Ames.
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd ed. USDA-NRCS Agric. Handb. 436. US Gov. Print. Office, Washington, DC.
- Southern Cooperative Series. 1983. Reference soil test methods for the southern region of the United States. S. Coop. Ser. Bull. 289. Georgia Agric. Exp. Stn., Athens, GA. [*Publisher varies as the series rotates among institutions.*]
- Steel, R.G.D., and J.H. Torrie. 1960. Principles and procedures of statistics, with special reference to the biological sciences. McGraw-Hill, New York.
- Steel, R.G.D., and J.H. Torrie. 1980. Principles and procedures of statistics: A biometrical approach. 2nd ed. McGraw-Hill, New York.
- Taylor, B.N. 1995. Guide for the use of the International System of Units (SI). NIST Spec. Publ. 811. US Gov. Print. Office, Washington, DC.
- USEPA. 1981. Process design manual for land treatment of municipal wastewater. USEPA Rep. 625/1-77-008 (COE EM1110-1-501). US Gov. Print. Office, Washington, DC.
- Westerman, R.L., editor. 1990. Soil testing and plant analysis. 3rd ed. SSSA Book Ser. 3. SSSA, Madison, WI.

Online Books

Online books usually correspond to printed versions, and the reference style is similar. Use the DOI in place of a URL if available.

- Boverhof, D.R., and B.B. Gollapudi, editors. 2011. Applications of toxicogenomics in safety evaluation and risk assessment. John Wiley & Sons, New York. doi:10.1002/9781118001042

Chapter in a Book

The entry for a chapter or article within a larger work must give the author(s), year, chapter title, the word "In" followed by a colon, any editors, and the publication title, followed by the volume (for multivolume works), edition (when more than one has been published), publisher, place of publication, and page range.

- Author. Year. Chapter title. In: Editor name(s), editor(s), Book title. Publisher, Place of publication. page range.
- Achorn, F.P., and H.L. Balay. 1985. Developments in potassium fertilizer technology. In: R.D. Munson, editor, Potassium in agriculture. ASA, CSSA, and SSSA, Madison, WI. p. 49–66.
- Boutton, T.W. 1991. Stable carbon isotope ratios of natural materials: II. Atmospheric, terrestrial, marine, and freshwater environments. In: D.C. Coleman and B. Fry, editors, Carbon isotope techniques. Academic Press, New York. p. 173–185.
- Buresh, R.J., P.C. Smithson, and D.T. Hellums. 1997. Building soil phosphorus capital in Africa. In: R.J. Buresh et al., editors, Replenishing soil fertility in Africa. SSSA Spec. Publ. 51. SSSA, Madison, WI. p. 111–149.

- Campbell, G.S., and J.M. Norman. 1989. The description and measurement of plant canopy structure. In: G. Russell et al., editors, *Plant canopies: Their growth, form, and function*. SEB Seminar Ser. 31. Cambridge Univ. Press, Cambridge, UK. p. 1–19.
- Gardner, W.H. 1986. Water content. In: A. Klute, editor, *Methods of soil analysis*. Part 1. Physical and mineralogical methods 2nd ed. Agron. Monogr. 9. ASA and SSSA, Madison, WI. p. 493–544.
- Johnson, D.W., and D.E. Todd. 1998. Effects of harvesting intensity on forest productivity and soil carbon storage. In: R. Lal et al., editors, *Management of carbon sequestration in soils*. *Advances in Soil Science*. CRC Press, Boca Raton, FL. p. 351–363.

Online Chapter in a Book

- Casado, M.R., R. Corstanje, P. Bellamy, and B. Marchant. 2013. Issues of sampling design in wetlands. In: R.D. DeLaune et al., editors, *Methods in biogeochemistry of wetlands*. SSSA Book Ser. 10. SSSA, Madison, WI. p. 1–19. doi:10.2136/sssabookser10.c1

Conference, Symposium, or Workshop Proceedings and Transactions

An entry for conference proceedings is similar to an entry for a book, with two more pieces of information: the place of the meeting and the the date. Conference proceedings often have two titles: the title of the book of proceedings and the name of the conference. If both are present, the title of the book is given first, with only the first word of the title, proper nouns, and proper adjectives capitalized, followed by a period. After the book title comes the name of the conference; capitalize all significant words for the conference name.

Published proceedings.

- Editor. Year. Title of book. Number and Name of Conference, place of conference. Date of conference. Publisher, place of publication.
- Bailey, S.W., editor. 1976. *Proceedings of the International Clay Conference*, Mexico City. 16–23 July 1975. Applied Publishing, Wilmette, IL.
- Faw, W., editor. 1992. *Forages '92, grassroots of animal agriculture*. 1992 American Forage Grassland Council Proceedings, Grand Rapids, MI. 5–9 Apr. 1992. AFGC, Georgetown, TX.
- Pascale, A.J., editor. 1989. *Proceedings of the World Soybean Research Conference IV*, Buenos Aires. 5–9 Mar. 1989. Orientación Gráfica Editora S.R.L., Buenos Aires.
- Wilkinson, D., editor. 1993. *Proceedings of the 49th Annual Corn and Sorghum Industry Research Conference*, Chicago. 8–9 Dec. 1993. Am. Seed Trade Assoc., Washington, DC.

Chapter in a proceedings volume.

Papers published in a proceedings volume are treated much like a book chapter.

- Dawson, J.C., and I. Goldringer. 2009. Direct or indirect selection in breeding for organic agriculture. In: H. Østergård, E.T. Lammerts van Bueren, and L. Bouwman-Smits, editors, *Proceedings of the BioExploit/Eucarpia Workshop on the Role of Marker Assisted Selection in Breeding Varieties for Organic Agriculture*, Wageningen, the Netherlands. 25–27 February. BioExploit Project, Wageningen, the Netherlands. p. 15–18.
- Golding, K.A., D.A. Davidson, and C.A. Wilson. 2010. Micromorphological evidence for the use of urban waste as a soil fertiliser in and near to historic Scottish towns. In: R.J. Gilkes and N. Prakongkep, editors, *Soil solutions for a changing world*. *Proceedings*

- of the 19th World Congress of Soil Science, Brisbane, Australia. Symposium 4.5.1 Brisbane, Australia: IUSS. p. 12–15. <http://www.iuss.org> (accessed 3 Jan. 2012).
- Power, J.F., and V.O. Biederbeck. 1991. Role of cover crops in integrated crop production systems. In: W.L. Hargrove, editor, *Cover crops for clean water. The Proceedings of an International Conference*, West Tennessee Experiment Station. Jackson, TN. 9–11 Apr. 1991. Soil and Water Conserv. Soc., Ankeny, IA. p. 167–174.

Abstracts.

Cite meeting abstracts only until a more formal publication becomes available.

- Caldwell, B.A. 1997. Fatty acid esterase activity in forest soils and ectomycorrhizal mat communities. In: 1997 Agronomy abstracts. ASA, Madison, WI. p. 223.
- Krischnamurti, G.S.R., and P.M. Huang. 1991. The role of Al in Fe(II) transformation. In: Abstracts, Annual Meeting, Clay Mineral Society, Houston, TX. 5–10 Oct. 1991. p. 96.

Papers and poster sessions presented at meetings.

Use this format when citing unpublished conference papers. When possible, avoid citing conference papers older than two years. If subsequent publication is known, cite the published form.

- Author. Year. Title of paper. Paper [or poster session] presented at: Title of conference. Number and Name of the Conference, place of the conference. Date.
- Kaeppler, S., N. De Leon, R. Sekhon, C. Hansey, C. Buell, H. Lin, and K. Childs. 2011. Expression analysis supporting functional genomics research in maize. Paper presented at: Fundamental for life: Soil, crop, and environmental sciences. ASA, CSSA, and SSSA Annual Meetings, San Antonio, TX. 16–19 Oct. Paper 110-5.

Miscellaneous

Dissertations and theses.

- Maraqa, M.A. 1995. Transport of dissolved volatile organic compounds in the unsaturated zone. Ph.D. diss., Michigan State Univ., East Lansing.

Software and software documentation.

- Abacus Concepts. 1991. *SuperANOVA user's guide*. Release 1.11. Abacus Concepts, Berkeley, CA.
- Minitab. 1998. *MINITAB 12*. Minitab, State College, PA.
- SAS Institute. 1994. *The SAS system for Windows*. Release 6.10. SAS Inst., Cary, NC.

Encyclopedia article.

- Salisbury, F.B. 1981. Response to photoperiod. In: O.L. Lange et al., editors, *Physiological plant ecology: I. Responses to the physical environment*. Encyclopedia of plant physiology. Vol. 12A. Springer, Berlin. p. 135–167.

Map.

Cite a map separately only if it is a stand-alone publication. If there is no author for a map, do not use "Anonymous." In such cases, the name of the map stands in for the author.

Author. Year. Map title [map type, e.g., demographic map]. Map number (if included). Publisher, Publisher location. Notes (e.g., scale).

Patent and plant patent.

Dudeck, A.E. 1995. Bermudagrass plant 'FHB-135'. US Plant Patent 9030. Date issued: 3 January.

Titcomb, S.T., and A.A. Juers. 1976. Reduced calorie bread and method of making same. US Patent 3,979,523. Date issued: 7 September.

Performance and variety test.

Pietsch, D., R. Gaas, D.T. Rosenow, F. Miller, and G.C. Peterson. 1992. Grain sorghum performance tests in Texas: 1991. Tech. Rep. 92-2. Texas Agric. Exp. Stn., College Station.

Schapaugh, W.T., and K.L. Roozeboom. 1993. 1992 Kansas performance tests with soybean varieties. Agric. Exp. Stn. Rep. Prog. 673. Kansas State Univ., Manhattan.

Tyler, J.M., and P.P. Bell. 1998. Uniform soybean tests, southern states, 1997. USDA-ARS, Stoneville, MS.

Crochet, W.D. 2011. The uniform soybean tests, northern states: 2010. USDA-ARS, West Lafayette, IN.

Standard.

Institution. Year. Rule number: Title. Publisher, Place of publication.

ASABE 1993. ASABE Standard D384.1: Manure production characteristics. ASABE, St. Joseph, MI.

ASTM. 2003. ASTM Standard C33: Specification for concrete aggregates. ASTM Int., West Conshohocken, PA. doi:10.1520/C0033-03

Electronic Sources

Treat electronic sources as you would the same kind of material in print. Start with the author, date, article or Web page title, and further information essential to the online reference. Because of the potentially ephemeral nature of electronic publications, if a publication exists in both print and electronic versions, cite the print version only.

Some electronic sources are the equivalent of personal communications or unpublished data (e.g., email, an online interview or chat session, or information posted on an individual's home page). Cite these in the text only; include the full URL address and the date.

Author. This is the *organization* or *person* responsible for the Website. The Webmaster or contact person for the site is not usually considered the author.

Date. Three dates are important: (1) the date when the publication was placed on the internet or was copyrighted, (2) the latest date of any update or revision, and (3) the date when the person doing the citing accessed the publication.

Title. Book and journal titles are usually clearly stated on a Website. For other Web pages, look for (i) the most prominent (usually the largest) words on the screen, (ii) wording followed by a copyright or registered-trademark symbol, (iii) the title bar of the Web browser (generally in the top left corner).

Publisher. In electronic terms, a publisher is defined as the person or organization that produces or sponsors the site. Look at the bottom of a home page, at the top or on a sidebar of the first screen, at the end of a document, or for the organization named after a copyright statement.

For original content from online sources, other than formally published documents such as journal articles and books, include as much of the following as can be determined: Author of the content, title or description of the page, the owner of the site if it can be determined, and the URL. Also provide the date you accessed the material. Citations to a home page should be cited in text only. Citations to databases should include the URL or DOI, if one is given.

For citing an online document that gives no publication date, use the year accessed rather than n.d.

Author. Year. Title of document. Title of site. Owner or sponsor of site. URL (accessed day month year).

Rummer, B., J. P. Prestemon, D. May, P. Miles, J. Vissage, R. McRoberts et al. 2003. A strategic assessment of forest biomass and fuel reduction treatments in western states. USDA Forest Service, Research and Development. http://www.fs.fed.us/research/pdf/Western_final.pdf (accessed 5 Jan. 2012).

Soil Survey Staff. 2012. Web soil survey: Soil data mart. USDA-NRCS. <http://websoilsurvey.nrcs.usda.gov> (accessed 3 Jan. 2012). [2012 is year accessed]

USEPA. 2002. National Water Quality Inventory: 2000 report. EPA-841-R-02-001. USEPA. <http://www.epa.gov/305b/2000report/> (accessed 10 Jan. 2012).

Electronic, Non-Internet Sources

It is standard practice to indicate a publication is not in print format by placing after the title a word that describes the specific nonprint medium. Use brackets, such as [CD].

Watschke, T.L., J.M. DiPaola, and D.P. Shepard. 2012. Turf growth regulation. [CD]. CSSA, Madison, WI.