



# JOURNAL OF APPLIED POULTRY RESEARCH

An official journal of the [Poultry Science Association](#).

## AUTHOR INFORMATION PACK

### TABLE OF CONTENTS

●	<b>Description</b>	<b>p.1</b>
●	<b>Impact Factor</b>	<b>p.1</b>
●	<b>Abstracting and Indexing</b>	<b>p.1</b>
●	<b>Editorial Board</b>	<b>p.1</b>
●	<b>Guide for Authors</b>	<b>p.3</b>



ISSN: 1056-6171

### DESCRIPTION

*The Journal of Applied Poultry Research (JAPR)* publishes original research reports, field reports, and reviews on breeding, hatching, health and disease, layer management, meat bird processing and products, meat bird management, microbiology, food safety, nutrition, environment, sanitation, welfare, and economics. As of January 2020, *JAPR* will become an Open Access journal with no subscription charges, meaning authors who publish here can make their research immediately, permanently, and freely accessible worldwide while retaining copyright to their work. Papers submitted for publication after October 1, 2019 will be published as Open Access papers.

The readers of *JAPR* are in education, extension, industry, and government, including research, teaching, administration, veterinary medicine, management, production, quality assurance, product development, and technical services. Nutritionists, breeder flock supervisors, production managers, microbiologists, laboratory personnel, food safety and sanitation managers, poultry processing managers, feed manufacturers, and egg producers use *JAPR* to keep up with current applied poultry research.

### IMPACT FACTOR

2019: 1.015 © Clarivate Analytics Journal Citation Reports 2020

### ABSTRACTING AND INDEXING

Scopus  
ISI Web of Knowledge

### EDITORIAL BOARD

#### **Editor-in-Chief**

**John Carey**, Texas A&M University, College Station, Texas, United States

#### **Managing Editor**

**David Busboom**, Poultry Science Association, Champaign, Illinois, United States

***Subject Editors***

***Breeding and Hatcheries***

**Greg Archer**, Texas A&M University, College Station, Texas, United States

***Health and Disease***

**Rocio Crespo**, North Carolina State University, Raleigh, North Carolina, United States

***Layer Management***

**Pratima Adhikari**, Mississippi State University, Mississippi State, Mississippi, United States

***Meat Bird Management***

**Mike Kidd**, University of Arkansas, Fayetteville, Arkansas, United States

***Meat Bird Processing and Products***

**Dianna Bourassa**, Auburn University, Auburn, Alabama, United States

***Microbiology and Food Safety***

**Christina Swaggerty**, USDA-ARS Southern Plains Agricultural Research Center, College Station, Texas, United States

***Nutrition***

**Sergio Vieira**, Federal University of Rio Grande do Sul, Porto Alegre, Brazil

**Mamduh Sifri**, Sifri Solutions LLC, Quincy, Illinois, United States

***Specialty Markets and Production Systems***

**Brigid McCrea**, Auburn University, Auburn, Alabama, United States

## GUIDE FOR AUTHORS

---

### SCOPE AND GENERAL INFORMATION AIMS AND SCOPE

*The Journal of Applied Poultry Research (JAPR)* publishes original research reports, field reports, and reviews on breeding, hatching, health and disease, layer management, meat bird processing and products, meat bird management, microbiology, food safety, nutrition, environment, sanitation, welfare, and economics. As of January 2020, *JAPR* will become an Open Access journal with no subscription charges, meaning authors who publish here can make their research immediately, permanently, and freely accessible worldwide while retaining copyright to their work. Papers submitted for publication after October 1, 2019 will be published as Open Access papers.

The readers of *JAPR* are in education, extension, industry, and government, including research, teaching, administration, veterinary medicine, management, production, quality assurance, product development, and technical services. Nutritionists, breeder flock supervisors, production managers, microbiologists, laboratory personnel, food safety and sanitation managers, poultry processing managers, feed manufacturers, and egg producers use *JAPR* to keep up with current applied poultry research.

### SUBMISSION

All manuscripts are submitted and reviewed via the journal's Editorial Manager manuscripts submission site at <https://www.editorialmanager.com/japr/default.aspx>. New authors should create an account prior to submitting a manuscript for consideration.

The submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

### Submission Checklist

You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

#### Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:

- E-mail address
- Full postal address

All necessary files have been uploaded:

*Manuscript:*

- Include keywords
- All tables (including titles, description, footnotes)
- Figure legends
- Ensure all figure and table citations in the text match the files provided

*Figure files* (figures must be uploaded as separate files, not embedded in the manuscript)

*Supplemental files* (where applicable)

Further considerations

- Manuscript has been 'spell checked' and 'grammar checked'
- All references mentioned in the Reference List are cited in the text, and vice versa
- Permission has been obtained for use of copyrighted material from other sources (including the Internet)
- A competing interests statement is provided, even if the authors have no competing interests to declare
- Journal policies detailed in this guide have been reviewed
- Referee suggestions and contact details provided, based on journal requirements

For further information, visit our [Support Center](#).

### **Submission declaration and verification**

Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see '[Multiple, redundant or concurrent publication](#)' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright holder.

To verify originality, your article may be checked by the originality detection service [Crossref Similarity Check](#).

### **CONTACT INFORMATION**

For information on the scientific content of the journal, contact the editor-in-chief, Dr. John Carey, Texas A&M University, Department of Poultry Science, 101 Kleberg Center, 2472 TAMU, College Station, TX 77843-2472; e-mail: [jcarey@poultry.tamu.edu](mailto:jcarey@poultry.tamu.edu).

For assistance with Editorial Manager manuscripts and manuscript submission, contact David Busboom at [david.busboom@poultryscience.org](mailto:david.busboom@poultryscience.org).

For all other inquiries, visit the [Elsevier Support Center](#). Here you will find everything from Frequently Asked Questions to ways to get in touch.

You can also [check the status of your submitted article](#) or find out [when your accepted article will be published](#)

### **TYPES OF ARTICLES**

#### **Research reports**

Most papers published in *JAPR* are research reports. The journal emphasizes the importance of good scientific writing and clarity in presentation of the concepts, apparatus, and sufficient background information that would be required for thorough understanding by scientists in other disciplines. The results of experiments published in *JAPR* must be replicated, either by replicating treatments within experiments or by repeating experiments.

#### **Field reports**

Field reports will be published when adequate background is available and conclusions can be supported by quantifiable laboratory or diagnostic results. The manuscript should follow the format outlined in the Style and Form section of this document. It should include a section titled Field Report in which the observations are explained and discussed under subheadings of Materials and Methods and Results and Discussion. Authors are encouraged to include subheadings for all major areas in this section.

## **Applied research notes**

Applied Research Notes report the results of complete experiments but are less comprehensive than full-length articles. These short papers may convey case reports, preliminary, or final data fulfilling one or more of the following criteria: a single experiment, low sample numbers, or limited replication. Manuscripts should be prepared according to the guidelines for full-length articles. The title of an Applied Research Note must begin with the words "Applied Research Note:". The running head shall be "APPLIED RESEARCH NOTE." Results and Discussion should be a unified section with concise data interpretation. A conclusions heading is not permitted. Supplementary data are not permitted. These papers are limited to: 1) 3,000 words or approximately nine typed, double-spaced pages; 2) two tables or figures or one of each; and 3) maximum ten (10) references. Authors must also indicate the section under which the manuscript is to be reviewed on the manuscript title page and on the Manuscript Submission Form. Editors may request that submitted full-length papers be revised for publication as Applied Research Notes.

## **Review articles**

Articles submitted to this section may cover new developments in a field, describe the evolution of a currently accepted management practice, propose changes in management based on current research, or describe procedures. Clear distinctions should be made between firmly established practices and unresolved questions. Articles should begin with a concise description of the topic, followed by a critical evaluation of the important references. Review articles, whether solicited or unsolicited, will be subject to a stringent review process. Review articles should follow the general format outlined in the Style and Form, when appropriate, and include brief subheadings to separate main ideas. A Conclusions and Applications section should be included in most cases.

## **Symposium and workshop articles**

Manuscripts presented at the annual meeting as part of a symposium or workshop may be submitted with prior agreement by the editor-in-chief. These submissions will be subject to peer review and may be accepted or rejected in the same manner as other submissions. The format may be similar to reviews, research reports, or field reports, as outlined in the Style and Form.

## **Letters and commentaries**

The journal accepts letters, book reviews, and other free-form communications (used to correct errors, provide clarification, or offer other points of view on pertinent issues). Submissions may be edited in consultation with the author.

## **JOURNAL POLICIES PEER REVIEW PROCESS**

This journal operates a single blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper, frequently under the direction of a section editor with expertise in the manuscript topic. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. For more information on the types of peer review, please visit: <https://www.elsevier.com/reviewers/peer-review>.

All submissions to the journal are initially reviewed by the editorial office. At this stage, manuscripts may be rejected without peer review if it is felt that they are not relevant to the journal's scope or do not conform to manuscript formatting requirements. This fast rejection process means that authors are given a quick decision and do not need to wait for the review process.

Manuscripts that pass initial screening will be forwarded to the appropriate section editor. The section editor may suggest rejection based on fatal design flaw, inappropriate replications, lack of novelty, or other major concerns. If appropriate, the paper will be sent out for peer review, usually to 2 independent reviewers who will provide comments. The section editor may recommend rejection or acceptance at this point, after which the manuscript and reviewer comments are made available to the editor-in-chief for a final decision to the authors. The manuscript will be sent back to the

corresponding author for revision according to the guidelines of the reviewers. Authors have 30 days to complete the revision, which shall be returned to the section editor. Failure to return the manuscript within 30 days will lock the author out of re-submitting the revision.

Rejected manuscripts can be resubmitted only with an invitation from the section editor or editor-in-chief. Revised versions of previously rejected manuscripts are treated as new submissions.

### **PRE-SUBMISSION LANGUAGE EDITING**

Please write your text in good English (American usage). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the [English Language Editing service](#) available from Elsevier's Author Services.

### **POST-PRODUCTION CORRECTIONS**

No correction to a paper already published will be carried out without an erratum or corrigendum (as applicable), this applies to articles in press and published within an issue. This means that any change carried out to a paper already published online will have a corresponding erratum or corrigendum published with its own separate DOI. Whether as an article in press or in an issue, if an erratum or corrigendum is published, the online version of the original paper will also be corrected online and the correction notice will mention this. Corrections will only be made if the publication record is seriously affected by the academic accuracy of published information.

Authors' corrections to Supplementary Data are made only in exceptional circumstances (for example major errors that compromise the conclusion of the study). Because the Supplementary Data is part of the original paper and hence the published record, the information cannot be updated if new data have become available or interpretations have changed.

### **ETHICS**

Please see our information pages on [Ethics in publishing](#) and [Ethical guidelines for journal publication](#).

### **CARE AND USE OF ANIMALS**

Authors must make it clear that experiments were conducted in a manner that avoided unnecessary discomfort to the animals by the use of proper management and laboratory techniques. Experiments shall be conducted in accordance with the principles and specific guidelines presented in *Guide for the Care and Use of Agricultural Animals in Research and Teaching*, 3rd edition, 2010 (found [here](#)); and, if applicable, *Guide for the Care and Use of Laboratory Animals* (United States Department of Human Health and Services, National Institutes of Health, Publication Number ISBN 0-309-05377-3, 1996); or *Guide to the Care and Use of Experimental Animals*, 2nd ed. Volume 1, 1993 (Canadian Council on Animal Care). Methods of killing experimental animals must be described in the text. In describing surgical procedures, the type and dosage of the anesthetic agent must be specified. Intra-abdominal and intrathoracic invasive surgery requires anesthesia. This includes castration. The editor-in-chief may refuse to publish manuscripts that are not compatible with these guides. If rejected solely on that basis, however, the paper may be resubmitted for reconsideration when accompanied by a written verification that a committee on animal care in research has approved the experimental design and procedures involved.

### **THIRD PARTY COPYRIGHT**

As a general rule, permission should be sought from the rights holder to reproduce any substantial part of a copyrighted work. This includes any text, illustrations, charts, tables, photographs, or other material from previously published sources. For more information on third party permissions, visit <https://www.elsevier.com/about/policies/copyright/permissions>.

### **DECLARATION OF INTEREST**

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential competing interests include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors must disclose any interests in two places: 1. A summary declaration of interest statement in the title page file (if double-blind) or the manuscript file (if single-blind). If there are no interests to declare then please state this: 'Declarations of interest: none'. This summary statement will be ultimately published if the article is accepted. 2. Detailed disclosures as part of a separate Declaration of Interest form, which forms part of the journal's official records. It is important for potential interests to be declared in both places and that the information matches. [More information](#).

## **ROLE OF THE FUNDING SOURCE**

You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

### **Funding body agreements and policies**

Elsevier has established a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some funding bodies will reimburse the author for the gold open access publication fee. Details of [existing agreements](#) are available online.

After acceptance, open access papers will be published under a noncommercial license. For authors requiring a commercial CC BY license, you can apply after your manuscript is accepted for publication.

### **Formatting of funding sources**

List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

### **Elsevier Researcher Academy**

[Researcher Academy](#) is a free e-learning platform designed to support early and mid-career researchers throughout their research journey. The "Learn" environment at Researcher Academy offers several interactive modules, webinars, downloadable guides and resources to guide you through the process of writing for research and going through peer review. Feel free to use these free resources to improve your submission and navigate the publication process with ease.

## **COPYRIGHT**

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see [more information](#) on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

### **Author Rights**

As an author you (or your employer or institution) have certain rights to reuse your work. [More information](#).

*Elsevier supports responsible sharing*

Find out how you can [share your research](#) published in Elsevier journals.

## **OPEN ACCESS**

This is an open access journal: all articles will be immediately and permanently free for everyone to read and download. To provide open access, this journal has an open access fee (also known as an article publishing charge APC) which needs to be paid by the authors or on their behalf e.g. by their research funder or institution. Permitted third party (re)use is defined by the following [Creative](#)



**Commons user licenses: Creative Commons Attribution (CC BY):** lets others distribute and copy the article, to create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), to include in a collective work (such as an anthology), to text or data mine the article, even for commercial purposes, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, and do not modify the article in such a way as to damage the author's honor or reputation.

**Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND):** for non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

### **Open access fee**

The open access publication fee for this journal is USD 2000, excluding taxes. The open access publication fee is USD 1500 if the corresponding author listed on the title page is a member of the Poultry Science Association. Learn more about Elsevier's pricing policy: <https://www.elsevier.com/openaccesspricing>.

Shortly after acceptance, the corresponding author listed on the title page will be contacted regarding license options, funding information, and payment of the Open Access fee.

## **PREPARATION OF MANUSCRIPT MANUSCRIPT FORMATTING**

### **General**

Papers must be written in English. The text and all supporting materials must use American spelling and usage as given in The American Heritage Dictionary, Webster's Third New International Dictionary, or the Oxford American English Dictionary. Authors should follow the style and form recommended in Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers. 2006. 7th ed. Style Manual Committee, Council of Science Editors, Reston, VA.

### **Preparing the manuscript file**

Manuscripts should be typed double-spaced, with lines and pages numbered consecutively, using Times New Roman font at 12 points. All special characters (e.g., Greek, math, symbols) should be inserted using the symbols palette available in this font. Please submit math equations as editable text and not as images. Tables and figure legends should be placed in a separate section at the end of the manuscript (not placed within the text). Figure files should be uploaded as separate files (not embedded in the manuscript).

#### *Use of word-processing software:*

It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also [the Guide to Publishing with Elsevier](#)). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

### **Headings**

#### *Major headings*



Major headings are centered, boldface, in all capital letters, and consist of SUMMARY, DESCRIPTION OF PROBLEM, MATERIALS AND METHODS, RESULTS AND DISCUSSION, CONCLUSIONS AND APPLICATIONS, and REFERENCES.

Major headings in review articles, field reports, and symposium articles may vary from those listed here, but should include SUMMARY, CONCLUSIONS AND APPLICATIONS, and REFERENCES.

#### *First subheadings*

First subheadings are placed on a separate line, begin at the left margin, the first letter of all important words is capitalized, and the headings are boldface and italic. Text that follows a first subheading should be in a new paragraph.

#### *Second subheadings*

Second subheadings begin the first line of a paragraph. They are indented, boldface, italic, and followed by a period. The first letter of each important word should be capitalized. The text follows immediately after the final period of the subheading.

### **TITLE PAGE**

The title should be indicative of the content. It should capture the interest of all who might benefit from information in the manuscript. However, the length of the title should be kept to a minimum. The running title should be 30 characters or less, including spaces.

Address and affiliation of authors (listed by first name or initials, middle initial, and last name) should be included. Indicate to whom correspondence should be directed by means of a footnote, with the notation "Corresponding author: (e-mail address)" at the bottom of the title page.

List 3 to 8 key words or phrases to identify the most important subjects covered by the paper.

Statement of primary audience. To determine appropriateness for the journal and to assist in selecting reviewers, the author should indicate clearly what sector(s) within the poultry community (e.g., flock supervisors, nutritionists, quality assurance personnel, researchers, plant managers, veterinarians) could benefit most from the content of this article.

#### *Changes to authorship*

Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed.

Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

### **ARTICLE STRUCTURE**

#### **Summary**

The Summary (maximum of 250 words) is not an abstract. It is intended to give readers with diverse backgrounds a general appreciation of the manuscript contents. It should be written so that even those not directly interested in the topic will enjoy reading at least this section to keep abreast of areas

other than their own. This section should not include details of materials and methods or a detailed review of the results. Keep the summary free-flowing, giving the reader a general, not specific, idea of what the study revealed. Do not include reference citations in the summary.

### **Description of problem**

This section will acquaint the reader with the problem, citing field experiences where appropriate. Readability is of utmost importance. Detailed literature reviews may not be appropriate for this section. A more extensive citation of references should be included in the Results and Discussion or References section. This section should end with a statement of the objective(s) of the study.

### **Materials and methods**

All sources of products, equipment, and chemicals used in the experiments must be specified parenthetically at first mention in text, tables, and figures [i.e., (model 123, ABC Corp., Provo, UT)]. Model and catalog numbers should be included. Information shall include the full corporate name (including division, branch, or other subordinate part of the corporation, if applicable), city, and state (country if outside the United States), or Web address. Street addresses need not be given unless the reader would not be able to determine the full address for mailing purposes easily by consulting standard references.

### **Results and discussion**

This section begins with observed results and their interpretation. Descriptive subheadings may precede all major paragraphs and changes in subject emphasis. This section should discuss specifically how findings address the problem described in the Description of Problem section and how they are related to published works.

Statements regarding statistically significant differences between treatments in results should be included in the text, tables, and figures. Statements regarding differences should be avoided unless they are supported by statistical analyses and meet the stated level of probability (e.g.,  $P < 0.05$ ).

### **Conclusion and applications**

Conclusions and recommendations of the author(s) should be listed numerically. Each statement should be clear, concise, and without discussion. Authors are encouraged to summarize their significant findings, to identify further research needs, and to describe the constraints, economics, and other factors associated with using the results in scientific or commercial applications. Do not include references in this section.

### **References**

#### **References**

##### *Citations in text*

In the body of the manuscript, refer to authors as follows: Smith and Jones (1992) or Smith and Jones (1990, 1992). If the sentence structure requires that the authors' names be included in parentheses, the proper format is (Smith and Jones, 1982; Jones, 1988a,b; Jones et al., 1993). Where there are more than two authors of one article, the first author's name is followed by the abbreviation et al. More than one article listed in the same sentence of text must be in chronological order first, and alphabetical order for two publications in the same year. Work that has not been accepted for publication shall be listed in the text as: "J. E. Jones (institution, city, and state, personal communication)." The author's own unpublished work should be listed in the text as "(J. Smith, unpublished data)." Personal communications and unpublished data must not be included in the References section.

##### *References section*

To be listed in the References section, papers must be published or accepted for publication. Manuscripts submitted for publication can be cited as "personal communication" or "unpublished data" in the text.

In the References section, references shall first be listed alphabetically by author(s)' last name(s), and then chronologically. The year of publication follows the authors' names. As with text citations, two or more publications by the same author or set of authors in the same year shall be differentiated by adding lowercase letters after the date. The dates for papers with the same first author that would be abbreviated in the text as et al., even though the second and subsequent authors differ, shall also be differentiated by letters. All authors' names must appear in the Reference section. Journals shall be abbreviated according to the conventional ISO abbreviations given in journals database of the National Library of Medicine. One-word titles must be spelled out. Inclusive page numbers must be provided. Sample references are given below.

**N.B. - The online version of *JAPR* uses a reference format that differs from that prescribed by the journal. The Guide for Authors is the sole source for the reference format. Any papers that do not follow this format risk rejection.**

*Article:*

Bagley, L. G., and V. L. Christensen. 1991. Hatchability and physiology of turkey embryos incubated at sea level with increased eggshell permeability. *Poult. Sci.* 70:1412-1418.

Bagley, L. G., V. L. Christensen, and R. P. Gildersleeve. 1990. Hematological indices of turkey embryos incubated at high altitude as affected by oxygen and shell permeability. *Poult. Sci.* 69:2035- 2039.

Witter, R. L., and I. M. Gimeno. 2006. Susceptibility of adult chickens, with and without prior vaccination, to challenge with Marek's disease virus. *Avian Dis.* 50:354-365. doi:10.1637/7498-010306R.1

*Book:*

Metcalfe, J., M. K. Stock, and R. L. Ingermann. 1984. The effects of oxygen on growth and development of the chick embryo. Pages 205- 219 in *Respiration and Metabolism of Embryonic Vertebrates*. R. S. Seymour, ed. Dr. W. Junk, Dordrecht, the Netherlands.

National Research Council. 1994. *Nutrient Requirements of Poultry*. 9th rev. ed. Natl. Acad. Press, Washington, DC.

*Federal Register:*

Department of Agriculture, Plant and Animal Health Inspection Service. 2004. Blood and tissue collection at slaughtering and rendering establishments, final rule. 9CFR part 71. *Fed. Regis.* 69:10137-10151.

*Other:*

Choct, M., and R. J. Hughes. 1996. Long-chain hydrocarbons as a marker for digestibility studies in poultry. *Proc. Aust. Poult. Sci. Symp.* 8:186. (Abstr.)

Dyro, F. M. 2005. Arsenic. WebMD. Accessed Feb. 2006. [http:// www.emedicine.com/neuro/topic20.htm](http://www.emedicine.com/neuro/topic20.htm).

El Halawani, M. E., and I. Rosenboim. 2004. Method to enhance reproductive performance in poultry. Univ. Minnesota, as- signee. US Pat. No. 6,766,767.

Hruby, M., J. C. Remus, and E. E. M. Pierson. 2004. Nutritional strategies to meet the challenge of feeding poultry without antibiotic growth promotants. *Proc. 2nd Mid-Atlantic Nutr. Conf., Timonium, MD. Univ. Maryland, College Park.*

Luzuriaga, D. A. 1999. Application of computer vision and electronic nose technologies for quality assessment of color and odor of shrimp and salmon. PhD Diss. Univ. Florida, Gainesville.

Peak, S. D., and J. Brake. 2000. The influence of feeding program on broiler breeder male mortality. *Poult. Sci.* 79(Suppl. 1):2. (Abstr.)

## **TABLES**

Tables must be created using the MS Word table feature and inserted in the manuscript after the references section. When possible, tables should be organized to fit across the page without running broadside. Be aware of the dimensions of the printed page when planning tables (use of more than 15 columns will create layout problems). Place the table number and title on the same line above the table. The table title does not require a period. Do not use vertical lines and use few horizontal lines. Use of bold and italic typefaces in the table should be done sparingly; you must define such use in a footnote. Each table must be on a separate page. To facilitate placement of all tables into the manuscript file (just after the references) authors should use "section breaks" rather than "page breaks" at the end of the manuscript (before the tables) and between tables.

Units of measure for each variable must be indicated. Papers with several tables must use consistent format. All columns must have appropriate headings. Abbreviations not found on the inside front cover of the journal must be defined in each table and must match those used in the text. Footnotes to tables should be marked by superscript numbers. Each footnote should begin a new line. Superscript letters shall be used for the separation of means in the body of the table and explanatory footnotes must be provided [i.e., "Means within a row lacking a common superscript differ ( $P < 0.05$ )."]; other significant P-values may be specified. Comparison of means within rows and columns should be indicated by different series of superscripts (e.g., a,b, . . . in rows; x-z . . . in columns) The first alphabetical letter in the series (e.g., a or A) shall be used to indicate the largest mean. Lowercase superscripts indicate  $P \leq 0.05$ . Uppercase letters indicate  $P \leq 0.01$  or less.

Probability values may be indicated as follows: \* $P \leq 0.05$ , \*\* $P \leq 0.01$ , \*\*\* $P \leq 0.001$ , and † $P \leq 0.10$ . Consult a recent issue of the journal for examples of tables.

Generally, results should be presented to the significant figure of the instrument used to collect the data. For example, results should not be presented to 5 digits when the instrument used only reads to 2 digits.

## **MISCELLANEOUS USAGE NOTES**

### **Abbreviations**

The following abbreviations may be used without definition in *JAPR*. Plurals do not require "s." Chemical symbols and 3-letter abbreviations for amino acids do not need definition. Other abbreviations should be defined at first use in the summary and the main text, as well as in each table or figure in which they appear. Author-defined abbreviations are boldface at first use in the main text. Abbreviations should not be used in the manuscript title, running title, or to begin a paragraph or sentence. They can be used in section headings if previously defined. This list appears inside the back cover of each issue of the journal.

The following abbreviations may be used without definition in *JAPR*:

ADF acid detergent fiber

ADFI average daily feed intake ADG average daily gain

AME apparent metabolizable energy

AMEn nitrogen-corrected apparent metabolizable energy

ANOVA analysis of variance

AOAC Association of Official Analytical Chemists

BSA bovine serum albumin

BW body weight  
°C Celsius  
cDNA complementary DNA  
CF crude fiber  
cfu colony-forming units (following a numeral)  
CI confidence interval  
CP crude protein  
cpm counts per minute  
CV coefficient of variation d day  
df degrees of freedom  
DM dry matter  
DNA deoxyribonucleic acid  
EDTA ethylenediaminetetraacetate  
EE ether extract  
ELISA enzyme-linked immunosorbent assay  
°F Fahrenheit  
FCR feed conversion ratio  
FE feed efficiency  
ft foot g gram  
gal gallon  
G:F gain-to-feed ratio  
GLM general linear model  
h hour  
HEPES N-(2-hydroxyethyl)piperazine-N'-2-ethanesulfonic acid  
HPLC high-performance (high-pressure) liquid chromatography  
ICU international chick units  
Ig immunoglobulin  
IL interleukin  
i.m. intramuscular  
in. inch

i.p. intraperitoneal  
IU international units  
i.v. intravenous  
kcal kilocalorie  
L liter (also capitalized with any combination, e.g., mL)  
lb pound  
L:D hours of light:hours of darkness in a photoperiod  
LSD least significant difference  
m meter  
 $\mu$  micro  
M molar  
ME metabolizable energy  
ME<sub>n</sub> nitrogen-corrected metabolizable energy  
MHC major histocompatibility complex  
mRNA messenger ribonucleic acid min minute  
mo month  
MS mean squares  
n number of observations  
NADH reduced form of NAD  
NDF neutral detergent fiber  
NRC National Research Council  
NS not significant  
PBS phosphate-buffered saline  
PCR polymerase chain reaction ppm parts per million  
r correlation coefficient  
r<sup>2</sup> coefficient of determination, simple  
R<sup>2</sup> coefficient of determination, multiple  
RH relative humidity  
RIA radioimmunoassay  
RNA ribonucleic acid

rpm revolutions per minute s second  
SAS Statistical Analysis System  
s.c. subcutaneous  
SD standard deviation  
SE standard error  
SEM standard error of the mean  
SNP single nucleotide polymorphism  
SRBC sheep red blood cells  
TBA thiobarbituric acid  
T cell thymic-derived cell  
TME true metabolizable energy  
TME<sub>n</sub> nitrogen-corrected true metabolizable energy  
TSAA total sulfur amino acids  
USDA United States Department of Agriculture  
UV ultraviolet  
vol/vol volume to volume  
vs. versus  
wt/vol weight to volume  
wt/wt weight to weight  
wk week  
yr year

### **SNP Nomenclature**

The increasing number of SNP association studies and the improvements in chicken genome annotation require a standardized SNP nomenclature for unequivocal and correct SNP identification. Additionally, information regarding the SNP investigated should be easily accessible in a publicly available database. Therefore, all relevant SNP included in a study should be listed with their unique RefSNP (rs) or submitted SNP (ss) number (if rs number is not yet available) as indicated in the public domain NCBI dbSNP database (<http://www.ncbi.nlm.nih.gov/snp>). If the SNP investigated do not yet have an entry in the NCBI dbSNP database, the authors of the manuscript are responsible for submitting all the required information to NCBI (see <http://www.ncbi.nlm.nih.gov/projects/SNP/>) for depositing the SNP into this database and obtaining a unique ss number for the SNP. In the text of the manuscript, use of the rs/ss number of the SNP or an alternative standardized nomenclature is recommended.

### **FIGURES/ILLUSTRATIONS**

#### **General points**

- Submit each illustration as a separate file.



- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.

A detailed guide on electronic artwork is available.

You are urged to visit this site; some excerpts from the detailed information are given here.

### **Formats**

If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.

Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below): EPS (or PDF): Vector drawings, embed all used fonts. TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi. TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi. TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.

Please do not:

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.

### **Color artwork**

Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article. Please indicate your preference for color: in print or online only. Further information on the preparation of electronic artwork.

### **Illustration services**

Elsevier's Author Services offers Illustration Services to authors preparing to submit a manuscript but concerned about the quality of the images accompanying their article. Elsevier's expert illustrators can produce scientific, technical and medical-style images, as well as a full range of charts, tables and graphs. Image 'polishing' is also available, where our illustrators take your image(s) and improve them to a professional standard. Please visit the website to find out more.

### **Figure captions**

Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (not on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

### **SUPPLEMENTARY DATA**

Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

Ensure that the supplementary material is referred to in the main manuscript at an appropriate point in the text. Supplementary material will be available online only and will not be copyedited, so ensure that it is clearly and succinctly presented, and that the style conforms to the rest of the paper. Also ensure that the presentation will work on any Internet browser. It is not recommended for the files to be more than 2 MB each, although exceptions can be made at the editorial office's discretion.

### **ADDITIONAL INFORMATION ABOUT ACCEPTED MANUSCRIPTS PROOFS**

Corresponding authors will receive an e-mail with a link to their proof. Please annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors.

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

### **ARTICLES IN PRESS**

For *JAPR*, manuscripts arrive at Elsevier and go through the production process until the final versions are ready to publish. These are then published on the journal's articles in press page. They will remain on the page up until the issue that they are assigned to is published.

### **OFFPRINTS**

For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's [Author Services](#).

### **Open access**

Please visit our [Open Access page](#) for more information.

© Copyright 2018 Elsevier | <https://www.elsevier.com>