The following checklist and template are designed for authors to compose the manuscript to conform to the Meat and Muscle Biology (MMB) policies and style. Authors should consult the latest version of the MMB Policies, Style Guide, and Instructions for Authors in preparing the manuscript (http://www.meatscience.org/publications-resources/mmb/mmb-instructions-to-authors). Manuscripts should be submitted to the MMB Image Iowa State University Digital Press website at https://www.iastatedigitalpress.com/mmb/.

Title Page
___ Running head limited to 45 characters, no abbreviations
___ Listing of all authors’ full names and affiliations in correct order
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Abstract
___ Maximum of 300 words, abbreviations defined at first use
___ Evidence of statistical analysis of data, e.g. $P=0.012$. 
___ 1 or 2 sentences of the important findings or conclusions at end of abstract
___ Key words (6 or less) after the abstract

Text sections
___ Centering, boldface, capitalized main headings
___ Secondary head flush left, boldface, italic, title case, (abbreviations are not used in headings unless they are commonly used abbreviations)
___ Abbreviations defined at first use except for weights and measurements in SI format
___ Manufacturer/supplier name and location for all chemicals and uncommon equipment and instruments
___ Citations in text are in chronological order; if 2 or more publications in the same year, then alphabetical order; format of Smith and Jones (2008), (Smith and Jones, 2008), (Smith et al., 2008)
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___ Equations are part of sentences, with all equation terms defined

Literature Cited
___ Author(s). Year. Title. Source vol.:inclusive pages. doi
___ Citations in alphabetical order by author last name
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___ Only citations used in text appear in this section

Tables and Figures
___ Should be self-contained and self-explanatory, with explanations for all abbreviations
___ Concise figure captions and table titles
___ Tables and figures numbers chronologically in order of appearance in text

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___ Check MMB Policies, Style Guide, and Instructions for Authors for appropriate procedures and forms
Authors should consult with the *Meat and Muscle Biology* (MMB) Style Guide on the American Meat Science Association website (http://meatscience.org/publications-resources/mmb). All manuscripts must be in English and submitted in a file format that can be edited, preferably in Microsoft Word. Manuscripts should be double spaced.

Line numbering and page numbering are to be used. Use continuous line numbering and continuous page numbering.

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The running head (that will be at the top of each page) is limited to 45 keystrokes

Title of paper (12-15 words or less), capitalize only the first word and any proper nouns

Abner B. Smith², Clyde D. Jones³, Ezra F. Johnson³,* and Research Consortium⁴

²Author research affiliation or institution, city, state, postal code, country (if outside of the United States).

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ABSTRACT: It is a brief summary of the reason or objective of the research, experimental units or samples, descriptive results, and a conclusion. The abstract should be 300 words or less. Abbreviations must be defined in the abstract and also defined when they are first used in the manuscript and in each table and each figure.

1 Acknowledgements are a footnote to the title and may include those for funding source, journal or experiment station approval number, or similar short statements. Other acknowledgements of disclosure of potential or actual conflicts of interest about the research, sponsorships, donations, personal thanks should be in the Acknowledgements section before the Literature Cited section. *Corresponding author email should be denoted by the * and given here.
Key words: Give up to 6 key words or phrases that include the animal species, variables, and primary factors measured.

INTRODUCTION

The introduction should be as brief as possible while giving an introduction and justification for the research, clear hypotheses that were tested, and the objective(s) of the research. The extensive discussion of literature pertaining to the research should be in the Discussion (or Results and Discussion section, if combined). References in the text should be in the format of Smith and Jones (2008), (Smith and Jones, 2008; Jones, 2010), Smith et al. (2008), (Smith et al., 2008; Jones et al., 2010; Adams et al., 2015). References with the same authors and the same year should be differentiated as (Smith and Jones, 2008a,b) in the text and in the Literature Cited.

MATERIALS AND METHODS

The materials and methods section is required. Statements of institutional animal care and use committee approval or institutional review board approvals for human subject use should be given first in this section. These statements of affiliation or institution review and approval of the research should conform with accepted standards. The materials and method section must contain a clear description of the conduct or protocol for the experiment, including the experimental conditions, experimental design, and the method and statistical model by which the data was statistically analyzed.

For sensory studies, information on study parameters including source of samples, storage, preparation methods, temperature parameters, serving size, number of samples per session, number of sessions per day, time between samples, number of replications, duplication, palette cleansers, serving order design, use of carriers and other key information on the sensory test should be provided in the methods. For descriptive studies using trained panels, the number of
panelists, the type and length of training, definition of scales and attributes, and how the panel
was monitored and validated must be given. For consumer studies, the number of consumers,
basic demographic information, recruitment/selection pool and criteria are required. Information
from AMSA Research Guidelines for Cookery, Sensory Evaluation, and Instrumental
Tenderness Measurements of Meat (http://meatscience.org/publications-resources/printed-
publications/sensory-and-tenderness-evaluation-guidelines) should be used and cited.
For color measurements, the AMSA Meat Color Measurement Guidelines
(http://meatscience.org/publications-resources/printed-publications/amsa-meat-color-
measurement-guidelines) should be consulted and cited. For color measurements, the AMSA
Meat Color Measurement Guidelines (http://meatscience.org/publications-resources/printed-
publications/amsa-meat-colormeasurement-guidelines) should be consulted and cited. The color
parameters ($L^*$, $a^*$, and $b^*$ values) are based on the 1976 guidelines of the CIE (International
Commission on Illumination; abbreviated CIE for its French name Commission internationale de
l'éclairage). The italicization and asterisk differentiate the CIE 1976 parameters from a similar
set of color parameters known as Hunter $L$, $a$, and $b$ values (note that these Hunter parameters do
not have italicization or asterisk). A quick rule of thumb is that if the color parameters have
asterisk then the letters are to be italicized because they are CIE 1976 values. Therefore, unless
the authors specify Hunter $L$, $a$, $b$ values, MMB has the policy of italicizing $L^*$, $a^*$, and $b^*$
values consistently in our publications.

Subheading

Subheading titles should be in bold and italicized lettering, if used, but are not required. The
information under each subheading contains specific information about an aspect of the
RESULTS

Present results in tables or figures whenever possible. The text in the results section should explain where the results are in the manuscript and generally describe the results obtained, but not repeat the numbers or data given in the tables or figures. The text should provide an indication of the variation associated with the results, preferably as the significance level or $P$ value. It is desirable to give the actual significance level ($P=0.013$) rather than $P<0.05$ or $P<0.01$.

DISCUSSION

The discussion is the interpretation of the results from a scientific perspective. The biological, physiological, and/or chemical processes to explain the results should be given clearly and concisely. The discussion should include pertinent findings from previous scientific or pertinent literature (see Introduction Section above for examples of citing references in the text to give appropriate attribution to the source of the information) and integrate these sufficiently in the discussion of the results to allow the reader to make independent interpretations and evaluations of the meaning of the research. Conclusions about the interpretation of the research and its use can be in this section or a separate section.

Some authors prefer, and some research is best presented, by combining the results and discussion into a single results and discussion section.

CONCLUSIONS

The concluding statements on the meaning and use of the research can be in a separate section or included in the discussion section.
ACKNOWLEDGEMENTS

This section is for disclosure of potential or actual conflicts of interest about the research, grant details, sponsorships, donations, and personal thanks.

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All references cited in the text of the manuscript should be listed. All citations must have been published or have been accepted for publication (with a doi number) to be included in this section. Unpublished data or personal communications are not allowed in this section without specific explanations of why the information is not available from a published, preferably peer reviewed, source. Each citation must follow the format for its specific type (refereed journal article, book, book chapter, bulletin, website) according to the MMB Style Guide. Citations should be given in alphabetical order by last name of first author. Multiple citations having the same first author are listed in alphabetical order of the last name of the first author, last name of the second author, last name of the third author and so forth. Two or more publications by the same author or the same set of authors in the same year would be distinguished by adding lowercase letters after the year, i.e. 2010a, 2010b. Please include the DOI (Digital Object Identifier) at the end of each reference for which they are available.


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Tables and figures are at the end of a manuscript and must give independent information to be understood without the reader needing to read text in the manuscript. The tables are provided in chronological order of appearance in the manuscript, followed by captions for figures (given in a list) and the figures themselves last. Figures are listed in the order they appear in the manuscript. Figures should be twice the size that will be in the typeset article, usually at least half a page in the manuscript. Abbreviations must be defined in each table and figure. It is acceptable to explain the abbreviation meaning in a footnote to the table. The listing of proprietary products in
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the measure of variation and evidence of statistical analysis of the data.

Tables must be created using the table feature in MS Word. Tables shown as image files or in
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Do not use image files or non-editable formats for tables.

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