



Manuscript Checklist

Revised September 2024

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
- Corresponding author name and email address on title page

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)
- Commas for numbers greater than 1,000, zeroes before decimal point for numbers less than 1
- Equations are part of sentences, with all equation terms defined

Declaration of Competing Interest

- Author(s) should declare any conflicts of interest. If there are no conflicts of interest, authors should state this explicitly before the acknowledgements.

Acknowledgements

- This section is for grant details, sponsorships, donations, and personal thanks to individuals who contributed significantly to the creation of the work.

Author Contribution

- Author(s) should provide detailed information about individuals contributions to the work by following the [CRediT](#) (Contributor Roles Taxonomy).

Literature Cited

- Author(s). Year. Title. Source vol.:inclusive pages. doi
- Citations in alphabetical order by author last name
- Appropriate journal title abbreviations. Use abbreviations as described here: (https://images.webofknowledge.com/images/help/WOS/A_abrvjt.html)
- 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

Copyrights

___ Check *MMB* Policies, Style Guide, and Instructions for Authors for appropriate procedures and forms

- 1 Authors should consult with the *Meat and Muscle Biology* (MMB) Style Guide on the American
- 2 Meat Science Association website (<http://meatscience.org/publications-resources/mmb>). All
- 3 manuscripts must be in English and submitted in a file format that can be edited, preferably in
- 4 Microsoft Word. Manuscripts should be double spaced.

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

- 7 Please include Tables, Figure Legends and Figures (in that order) in the same file as the
- 8 manuscript. Insert them (Tables, Figure Legends, and Figures) sequentially immediately after
- 9 the Literature Cited section. Do NOT insert them into the body of the manuscript.

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Meat and Muscle Biology Manuscript Template

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 nouns¹

Abner B. Smith², Clyde D. Jones³, Ezra F. Johnson^{3,*} and Research Consortium⁴

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

³Research affiliations of authors different than the first or other authors given as research affiliation or institution, city, state, postal code, country (if outside of the United States).

⁴Give website (<http://...>) where the names and affiliations of scientists working with a Research Consortium (or other collaborative affiliation) are listed

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.

29 **Key words:** Give up to 6 key words or phrases that include the animal species, variables, and
30 primary factors measured.

31 **INTRODUCTION**

32 The introduction should be as brief as possible while giving an introduction and justification for
33 the research, clear hypotheses that were tested, and the objective(s) of the research. The
34 extensive discussion of literature pertaining to the research should be in the Discussion (or
35 Results and Discussion section, if combined). References in the text should be in the format of
36 Smith and Jones (2008), (Smith and Jones, 2008; Jones, 2010), Smith et al. (2008), (Smith et al.,
37 2008; Jones et al., 2010; Adams et al., 2015). References with the same authors and the same
38 year should be differentiated as (Smith and Jones, 2008a,b) in the text and in the Literature Cited.

39 **MATERIALS AND METHODS**

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

47 For sensory studies, information on study parameters including source of samples, storage,
48 preparation methods, temperature parameters, serving size, number of samples per session,
49 number of sessions per day, time between samples, number of replications, duplication, palette
50 cleansers, serving order design, use of carriers and other key information on the sensory test
51 should be provided in the methods. For descriptive studies using trained panels, the number of

52 panelists, the type and length of training, definition of scales and attributes, and how the panel
53 was monitored and validated must be given. For consumer studies, the number of consumers,
54 basic demographic information, recruitment/selection pool and criteria are required. Information
55 from AMSA Research Guidelines for Cookery, Sensory Evaluation, and Instrumental
56 Tenderness Measurements of Meat ([http://meatscience.org/publications-resources/printed-](http://meatscience.org/publications-resources/printed-publications/sensory-and-tenderness-evaluation-guidelines)
57 [publications/sensory-and-tenderness-evaluation-guidelines](http://meatscience.org/publications-resources/printed-publications/sensory-and-tenderness-evaluation-guidelines)) should be used and cited.
58 For color measurements, the AMSA Meat Color Measurement Guidelines
59 ([http://meatscience.org/publications-resources/printed-publications/amsa-meat-color-](http://meatscience.org/publications-resources/printed-publications/amsa-meat-color-measurement-guidelines)
60 [measurement-guidelines](http://meatscience.org/publications-resources/printed-publications/amsa-meat-color-measurement-guidelines)) should be consulted and cited. For color measurements, the AMSA
61 Meat Color Measurement Guidelines ([http://meatscience.org/publications-resources/printed-](http://meatscience.org/publications-resources/printed-publications/amsa-meat-color-measurement-guidelines)
62 [publications/amsa-meat-color-measurement-guidelines](http://meatscience.org/publications-resources/printed-publications/amsa-meat-color-measurement-guidelines)) should be consulted and cited. The color
63 parameters (*L**, *a**, and *b** values) are based on the 1976 guidelines of the CIE (International
64 Commission on Illumination; abbreviated CIE for its French name Commission internationale de
65 l'éclairage). The italicization and asterisk differentiate the CIE 1976 parameters from a similar
66 set of color parameters known as Hunter L, a, and b values (note that these Hunter parameters do
67 not have italicization or asterisk). A quick rule of thumb is that if the color parameters have
68 asterisk then the letters are to be italicized because they are CIE 1976 values. Therefore, unless
69 the authors specify Hunter L, a, b values, MMB has the policy of italicizing *L**, *a**, and *b**
70 values consistently in our publications.

71

72 ***Subheading***

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

75 manuscript and may be in the materials and methods, results, discussion (or results and
76 discussion section, if combined).

77 **RESULTS**

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

83 **DISCUSSION**

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

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

94 **CONCLUSIONS**

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

CONFLICT OF INTEREST

97 Author(s) should declare any conflicts of interest. If there are no conflicts of interest, authors
should state this explicitly before the acknowledgements.

ACKNOWLEDGEMENTS

98 This section is for grant details, sponsorships, donations, and personal thanks to individuals who
contributed significantly to the creation of the work.

AUTHOR CONTRIBUTION

99 Author(s) should provide detailed information about individuals contributions to the work by
following the [CRedit](#) (Contributor Roles Taxonomy).

LITERATURE CITED

100
101 All references cited in the text of the manuscript should be listed. All citations must have been
102 published or have been accepted for publication (with a doi number) to be included in this
103 section. Unpublished data or personal communications are not allowed in this section without
104 specific explanations of why the information is not available from a published, preferably peer
105 reviewed, source. Each citation must follow the format for its specific type (refereed journal
106 article, book, book chapter, bulletin, website) according to the *MMB* Style Guide. Citations
107 should be given in alphabetical order by last name of first author. Multiple citations having the
108 same first author are listed in alphabetical order of the last name of the first author, last name of
109 the second author, last name of the third author and so forth. Two or more publications by the
110 same author or the same set of authors in the same year would be distinguished by adding
111 lowercase letters after the year, i.e. 2010a, 2010b. Please include the DOI (Digital Object
112 Identifier) at the end of each reference for which they are available.

113 Adams, J.J. 2015. Title. Journal title vol:pages. <https://doi.org/xx.xxxx/xxx/xxxxxx>.

114 Brown, L .D. 2001. Title. Journal title vol:pages. <https://doi.org/xx.xxxx/xxx/xxxxxx>.

115 Brown, L. D. and G. C. Smith. 2014. Title. Journal title vol:pages. [https://doi.org/xx.xxxx/](https://doi.org/xx.xxxx/xxx/xxxxxx)

116 [xxx/xxxxxx](https://doi.org/xx.xxxx/xxx/xxxxxx).

117 Brown, L. D., G. C. Smith, and J. D. Tatum. 2005. Title. Journal title vol:pages.

118 <https://doi.org/xx.xxxx/xxx/xxxxxx>.

119 Brown, L. D., G. C. Smith, and J. D. Tatum. 2007a. Title. Journal title vol:pages.

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121 Brown, L. D., G. C. Smith, and J. D. Tatum. 2007b. Title. Journal title vol:pages.
122 <https://doi.org/xx.xxxx/xxx/xxxxxx>.

123 Brown, L. D., G. C. Smith, J. D. Tatum, K. J. Jones, and A. Q. Brown. 2001. Title.
124 Journal title vol:pages. <https://doi.org/xx.xxxx/xxx/xxxxxx>.

125 Brown, L. D., G. C. Smith, E. C. Vandegraft, and J. D. Tatum. 2015. Title. Journal title
126 vol:pages. <https://doi.org/xx.xxxx/xxx/xxxxxx>.

127 Brown, L. D. and J. H. Ziegler. 1994a. Title. Journal title vol:pages. [https://doi.org/xx.xxxx/](https://doi.org/xx.xxxx/xxx/xxxxxx)
128 [xxx/xxxxxx](https://doi.org/xx.xxxx/xxx/xxxxxx).

129 Brown, L. D. and J. H. Ziegler. 1994b. Title. Journal title vol:pages. [https://doi.org/xx.xxxx/](https://doi.org/xx.xxxx/xxx/xxxxxx)
130 [xxx/xxxxxx](https://doi.org/xx.xxxx/xxx/xxxxxx).

131 Carter, H.D., Q.S. Jones, and L.D. Brown. 1987. Title. Journal title vol:pages.
132 <https://doi.org/xx.xxxx/xxx/xxxxxx>.

133 McLin, A.J., H.D. Carter, and L.D. Brown. 1986a. Title. Journal title vol:pages.
134 <https://doi.org/xx.xxxx/xxx/xxxxxx>.

135 McLin, A.J., H.D. Carter, and L.D. Brown. 1986b. Title. Journal title vol:pages.
136 <https://doi.org/xx.xxxx/xxx/xxxxxx>.

137

138 **Tables and Figures**

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

146 a table or figure must give the manufacturer name and location. All tables and figures must show
147 the measure of variation and evidence of statistical analysis of the data.

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149 Tables must be created using the table feature in MS Word. Tables shown as image files or in
150 formats that cannot be edited will result in rejection of the manuscript.

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152 Do not use image files or non-editable formats for tables.

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154 Figures should also give independent information and have a caption and appropriate legends.

155 Each figure should be on a separate page with identification of the figure number and the legend

156 for the figure. Because *MMB* is an online journal, figures should be submitted in the format and

157 with sufficient resolution in which they can be best interpreted, and in color if that enhances the

158 depiction of the information. Figures should be twice the size that it is anticipated that they will

159 appear in the typeset publication. Photographs are discouraged unless absolutely the only means

160 to show, explain, or describe a concept or apparatus.