The Journal of Food Composition and Analysis publishes manuscripts on the chemical composition of human foods, analytical methods, food composition data and studies on the statistics, use and distribution of such data.

Research areas include:

- New methods for the chemical analysis of food
- Nutrient, bioactive non-nutrient and anti-nutrient components in food
- Flavour and taste components in food.
- Food composition database development, management, and utilization
- Processes of development and selection of single-value entries for food composition tables

The Journal does not consider papers that feature as the major area of study:

- Non-specific assays, such as in-vitro antioxidant capacity and total phenolic content
- Clinical and pharmacological studies
- Natural medicines
- Physical properties of foods
- Food waste materials
- Foods formulated in the laboratory
- Microbiological and anti-microbial assays
- Sensory quality and organoleptic characteristics of foods
ABSTRACTING AND INDEXING

Scopus
AGRICOLA
Biological Abstracts
CAB International
CAB Health
Current Contents
Dairy Science Abstracts
FSTA (Food Science and Technology Abstracts)
Nutrition Abstracts
AGORA
Foodline: Food Science and Technology
Vitis Viticulture and Enology Abstracts
EMBiology

EDITORIAL BOARD

Editor-in-Chief
J. Stephen Elmore, University of Reading, Reading, United Kingdom

Senior Editor
Dalene de Beer, Agricultural Research Council, Plant Bioactives Group, Post-Harvest & Agro-Processing Technologies, Stellenbosch, South Africa
Herbal teas, Fruits, Phenolic compounds, Food processing

Consulting and Founding Editor
Kent Stewart, The University of Texas System, Austin, Texas, United States of America

Editors
Luke Bell, University of Reading, Reading, United Kingdom
Renan Chisté, Federal University of Para, BELEM, Brazil
Fook Yee Chye, Universiti Malaysia Sabah, Faculty of Food Science and Nutrition, Kota Kinabalu, Malaysia
Ayodele Rotimi Ipeaiyeda, University of Ibadan, Ibadan, Nigeria
Percy Onianwa, University of Ibadan, Ibadan, Nigeria
Donatella Restuccia, University of Calabria, Arcavacata di Rende, Italy
Dil Thavarajah, Clemson University, Clemson, South Carolina, United States of America

Editorial Board Members
Douglas Fernandes Barbín, State University of Campinas, CAMPINAS, São Paulo, Brazil
Chemometrics, Food Engineering, Sensors
Jose Bernal, University of Valladolid, Valladolid, Spain
Alessandra Biancolillo, University of L’Aquila, Department of Physical and Chemical Sciences, L’Aquila, Italy
Analytical Chemistry, Chemometrics, Data Analysis, Spectroscopy, Food Analysis, Classification, Regression, Data Fusion
Sylwia Budzyńska, Poznan University of Life Sciences, Poznan, Poland
food chemistry, analytical chemistry, functional food, supplementation, mushrooms, elements accumulation, metals, metalloids, speciation, environmental pollution, forestry, biofortification
Marimar Campo, University of Zaragoza, Zaragoza, Spain
Carlos Cardoso, Portuguese Institute for the Sea and Atmosphere, Lisboa, Portugal
Isabel Castanheira, National Institute of Health Doctor Ricardo Jorge, Lisboa, Portugal
Sensing systems for detection, Electrochemistry, Bioavailability, Packaging/edible film and Composite materials
Catherine Champagne, Louisiana State University System, Baton Rouge, Louisiana, United States of America
Dawei Chen, China National Center for Food Safety Risk Assessment, Beijing, China
Non-targeted Screening, Sample Preparation, Pesticides, Veterinary Drug, Human Biomonitoring, Food Safety, Assessment Exposure, Emerging Contaminants, Mycotoxins, Analytical Chemistry
Stephen Chung, Hong Kong, China
Contaminants and residues in food
Hao Dong, Zhongkai University of Agriculture and Engineering, Guangzhou, China
food chemistry, food analytical method, food authenticity, hetercyclic aromatic amine, food chemical pollutant, meat products
Montserrat Dueñas Patón, University of Salamanca, Salamanca, Spain
Kwaku Gyebi Duodu, University of Pretoria, Pretoria, South Africa
Cereals, Legumes, Phenolic compounds, Bioactives, Health
Tullia Gallina Toschi, University of Bologna, Bologna, Italy
Seyed Mohammad Taghi Gharibzahedi, TU Berlin Institute of Chemistry, Berlin, Germany
Future Food, Biopolymer, Emulsion, Encapsulation, Enzyme, Fortification, Biosensor, Non-thermal processing
Vural Gökmen, Hacettepe University, Ankara, Turkey
Food Science and Technology
José Luis Guí-Guerrero, University of Almeria, Almeria, Spain
David Haytowitz, USDA-ARS Beltsville Human Nutrition Research Center, Beltsville, Maryland, United States of America
Leqian Hu, Henan University of Technology School of Chemistry and Chemical Engineering, Zhengzhou, China
Food Safety; Food Chemistry; Food analysis; Food Quality Assessment; Chemometrics
Paul Hulshof, Wageningen University, Wageningen, Netherlands
Lenka Husáková, University of Pardubice, Pardubice, Czechia
Marco Iammarino, Zooprophyactic Institute of Puglia and Basilicata, Foggia, Italy
Food Science and Technology, Analytical Chemistry, Food Safety
Paul van Jaarsveld, South African Medical Research Council, Tygerberg, South Africa
Jette Jakobsen, National Food Institute, Søborg, Denmark
Jungmin Lee, USDA-ARS Horticultural Crops Research Unit, Corvallis, Oregon, United States of America
Food Chemistry, phenolic, small fruits
Lilian Mariotti, State University of Campinas, CAMPINAS, São Paulo, Brazil
natural pigments, bioactive compounds, lipid oxidation, antioxidants, bioaccessibility, LC-MS
Antonio J. Meléndez-Martínez, University of Seville, Sevilla, Spain
Carotenoids, food science and technology, functional foods, isoprenoids, colour
Byungrok Min, University of Maryland Eastern Shore, Princess Anne, Maryland, United States of America
Diane Mitchell, Texas A&M Agrilife Research, College Station, Texas, United States of America
Food composition, exposure assessment
Weizheng Sun, South China University of Technology School of Food Science and Engineering, Guangzhou, China
Food proteins; Peptide; Functional properties; Digestive behaviours; Sensors, Digestive behaviours, Food protein, Protein oxidation, Sensor, Peptide, Food flavour
Thea Zimmerman, Westat Inc, Rockville, Maryland, United States of America
Nutrient databases, dietary intake
GUIDE FOR AUTHORS

INTRODUCTION

The Journal of Food Composition and Analysis publishes manuscripts on scientific aspects of data on the chemical composition of human foods, with particular emphasis on actual data on composition of foods; analytical methods; studies on the manipulation, storage, distribution and use of food composition data; and studies on the statistics, use and distribution of such data and data systems. The Journal's basis is nutrient composition, with increasing emphasis on bioactive non-nutrient and anti-nutrient components. Papers must provide sufficient description of the food samples, analytical control procedures and statistical treatments of the data to permit the end users of the food composition data to evaluate the appropriateness of such data in their projects.

The Journal does not publish papers on:
- Microbiological assays;
- Sensory quality and organoleptic characteristics of food;
- Physical properties;
- Clinical papers and pharmacology-related papers;
- Natural medicines;
- Food waste materials;
- Foods formulated in the laboratory;
- Data based on in-vitro antioxidant capacity measurements.

The Journal of Food Composition and Analysis is no longer considering papers that include data based on in-vitro antioxidant capacity measurements. Each method measures a different aspect of the sample chemistry; all are non-specific and subject to numerous inferences. More importantly, an antioxidant value cannot be related to a specific nutritional or health outcome. This policy also applies to total phenolic content and similar assays that are equally non-specific and subject to interferences. Papers where all or most of the identifications are tentative will not be considered. Identifications should be confirmed with reference compounds where commercially available.

Research may be published as Original Research Articles, Short Communications, Critical Reviews, Study Reviews, Reports or Commentaries, according to subject matter and presentation. Editor assignment will be made by the Managing Editor, but author guidance is appreciated. Only original papers will be considered. Manuscripts are submitted for review with the understanding that the same work has not been copyrighted, published, or submitted for publication elsewhere.

Types of paper

The following types of papers are published:

- **Original Research Articles** are complete reports of original, scientifically sound research. They must contribute new knowledge and be organized as described in this Guide. Please follow carefully the organization of the sections described in Article Structure (see below).

- **Short Communications** are brief reports of scientifically sound research, but of limited scope (for example, limited number of samples analysed), that contribute new knowledge. They may be preliminary reports of new findings, in which case the author is expected to publish complete findings later in an article.

- **Reviews** are papers which provide an analysis of a scientific or applied field, which include all important findings and bring together reports from a number of sources. There are two categories of reviews:

  - **Critical reviews** provide a comprehensive, extensive review of a topic and a thorough referencing of the relevant literature. **Study reviews** provide an analysis of a selected number of published or unpublished studies.

Review articles may be invited by the Editor or the Editorial Board. Alternatively, potential authors considering the preparation of a Review article should contact the Editor to suggest the topic and its scope, providing an outline in the form of major headings and a summary statement. In any case, such articles are subject to the normal processes of peer review and revision.
• **Reports** are papers presenting the results of an expert consultation, or a scientific or regional committee, in the field of food composition and analysis.

• **Commentaries** are opinion pieces, focused on some scientific or applied aspect of food composition. They are informative, and may link diverse disciplines or address difficult implications or issues. Controversial commentaries are acceptable, as are ones expressing contrasting opinions. In most cases, these will be invited, but suggestions and unsolicited submissions will be considered by the Editor.

• **Special Issues** The journal publishes special issues from time to time and encourages suggestions of topics. Please contact the Editor-in-Chief at j.s.elmore@reading.ac.uk with special issue proposals.

**Review Process**
This journal operates a double blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor’s decision is final. More information on types of peer review.

**Contact details for submission**
All manuscripts for *Journal of Food Composition and Analysis* should be submitted online via the Elsevier Editorial System (https://www.editorialmanager.com/jfca/default.aspx).

**Submission checklist**

**Original Submission**
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 figures (include relevant captions)
- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Separate Word document containing the title, authors names and affiliations, email addresses, acknowledgements and funding information
- Cover letter explaining the value of the submitted manuscript
- Indicate clearly if color should be used for any figures in print

*Graphical Abstracts / Highlights files* (where applicable)
*Supplemental files* (where applicable)

Please note this journal uses a double blind peer review process so please do not leave any personal information in the manuscript file.

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
- All numeric data should be presented to 3 significant figures unless there is a justifiable reason why this is inappropriate (e.g. high resolution mass spectroscopy data).
• Referee suggestions and contact details provided, based on journal requirements.
• Please do not place your figures in the manuscript file. You will be asked to upload figures as separate files during the submission process.

For further information, visit our Support Center.

BEFORE YOU BEGIN

Ethics in publishing
Please see our information on Ethics in publishing.

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 anonymized) or the manuscript file (if single anonymized). If there are no interests to declare then please state this: 'Declarations of interest: none'. 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.

Declaration of generative AI in scientific writing
The below guidance only refers to the writing process, and not to the use of AI tools to analyse and draw insights from data as part of the research process.

Where authors use generative artificial intelligence (AI) and AI-assisted technologies in the writing process, authors should only use these technologies to improve readability and language. Applying the technology should be done with human oversight and control, and authors should carefully review and edit the result, as AI can generate authoritative-sounding output that can be incorrect, incomplete or biased. AI and AI-assisted technologies should not be listed as an author or co-author, or be cited as an author. Authorship implies responsibilities and tasks that can only be attributed to and performed by humans, as outlined in Elsevier’s AI policy for authors.

Authors should disclose in their manuscript the use of AI and AI-assisted technologies in the writing process by following the instructions below. A statement will appear in the published work. Please note that authors are ultimately responsible and accountable for the contents of the work.

Disclosure instructions
Authors must disclose the use of generative AI and AI-assisted technologies in the writing process by adding a statement at the end of their manuscript in the core manuscript file, before the References list. The statement should be placed in a new section entitled ‘Declaration of Generative AI and AI-assisted technologies in the writing process’.

Statement: During the preparation of this work the author(s) used [NAME TOOL / SERVICE] in order to [REASON]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

This declaration does not apply to the use of basic tools for checking grammar, spelling, references etc. If there is nothing to disclose, there is no need to add a statement.

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 compliance, your article may be checked by Crossref Similarity Check and other originality or duplicate checking software.
**Preprints**

Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see ‘Multiple, redundant or concurrent publication' for more information).

**Preprint posting on SSRN**

In support of Open Science, this journal offers its authors a free preprint posting service. Preprints provide early registration and dissemination of your research, which facilitates early citations and collaboration.

During submission to Editorial Manager, you can choose to release your manuscript publicly as a preprint on the preprint server SSRN once it enters peer-review with the journal. Your choice will have no effect on the editorial process or outcome with the journal. Please note that the corresponding author is expected to seek approval from all co-authors before agreeing to release the manuscript publicly on SSRN.

You will be notified via email when your preprint is posted online and a Digital Object Identifier (DOI) is assigned. Your preprint will remain globally available free to read whether the journal accepts or rejects your manuscript.

For more information about posting to SSRN, please consult the SSRN Terms of Use and FAQs.

**Use of inclusive language**

Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Content should make no assumptions about the beliefs or commitments of any reader; contain nothing which might imply that one individual is superior to another on the grounds of age, gender, race, ethnicity, culture, sexual orientation, disability or health condition; and use inclusive language throughout. Authors should ensure that writing is free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions. We advise to seek gender neutrality by using plural nouns (“clinicians, patients/clients”) as default/wherever possible to avoid using “he, she,” or “he/she.” We recommend avoiding the use of descriptors that refer to personal attributes such as age, gender, race, ethnicity, culture, sexual orientation, disability or health condition unless they are relevant and valid. When coding terminology is used, we recommend to avoid offensive or exclusionary terms such as “master”, “slave”, “blacklist” and “whitelist”. We suggest using alternatives that are more appropriate and (self-) explanatory such as “primary”, “secondary”, “blocklist” and “allowlist”. These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

**Reporting sex- and gender-based analyses**

**Reporting guidance**

For research involving or pertaining to humans, animals or eukaryotic cells, investigators should integrate sex and gender-based analyses (SGBA) into their research design according to funder/sponsor requirements and best practices within a field. Authors should address the sex and/or gender dimensions of their research in their article. In cases where they cannot, they should discuss this as a limitation to their research’s generalizability. Importantly, authors should explicitly state what definitions of sex and/or gender they are applying to enhance the precision, rigor and reproducibility of their research and to avoid ambiguity or conflation of terms and the constructs to which they refer (see Definitions section below). Authors can refer to the Sex and Gender Equity in Research (SAGER) guidelines and the SAGER guidelines checklist. These offer systematic approaches to the use and editorial review of sex and gender information in study design, data analysis, outcome reporting and research interpretation - however, please note there is no single, universally agreed-upon set of guidelines for defining sex and gender.

**Definitions**

Sex generally refers to a set of biological attributes that are associated with physical and physiological features (e.g., chromosomal genotype, hormonal levels, internal and external anatomy). A binary sex categorization (male/female) is usually designated at birth (“sex assigned at birth”), most often based solely on the visible external anatomy of a newborn. Gender generally refers to socially constructed roles, behaviors, and identities of women, men and gender-diverse people that occur in a historical and cultural context and may vary across societies and over time. Gender influences how people view themselves and each other, how they behave and interact and how power is distributed in society. Sex
and gender are often incorrectly portrayed as binary (female/male or woman/man) and unchanging whereas these constructs actually exist along a spectrum and include additional sex categorizations and gender identities such as people who are intersex/have differences of sex development (DSD) or identify as non-binary. Moreover, the terms "sex" and "gender" can be ambiguous—thus it is important for authors to define the manner in which they are used. In addition to this definition guidance and the SAGER guidelines, the resources on this page offer further insight around sex and gender in research studies.

**Author contributions**

For transparency, we require corresponding authors to provide co-author contributions to the manuscript using the relevant CRediT roles. The CRediT taxonomy includes 14 different roles describing each contributor’s specific contribution to the scholarly output. The roles are: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; and Writing - review & editing. Note that not all roles may apply to every manuscript, and authors may have contributed through multiple roles. More details and an example.

**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 transfer service**

This journal uses the Elsevier Article Transfer Service to find the best home for your manuscript. This means that if an editor feels your manuscript is more suitable for an alternative journal, you might be asked to consider transferring the manuscript to such a journal. The recommendation might be provided by a Journal Editor, a dedicated Scientific Managing Editor, a tool assisted recommendation, or a combination. If you agree, your manuscript will be transferred, though you will have the opportunity to make changes to the manuscript before the submission is complete. Please note that your manuscript will be independently reviewed by the new journal. More information.

**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. Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete a 'License Agreement' (more information). Permitted third party reuse of gold open access articles is determined by the author's choice of user license.

**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.
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, it is recommended to state this.

Open access
Please visit our Open Access page for more information.

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.

Language (usage and editing services)
Please write your text in good English (American or British usage is accepted, but not a mixture of these). 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.

Submission
Our online 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, LaTeX) 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.

Authors must provide and use an email address unique to themselves and not shared with another author registered in Editorial Manager, or a department.

PREPARATION

Queries
For questions about the editorial process (including the status of manuscripts under review) or for technical support on submissions, please visit our Support Center.

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.

When preparing your manuscript, set 2-2.5 cm margins throughout the document, double space the text and use a 12 pt font, preferably Times Roman. Activate continuous line numbering throughout the manuscript so that line numbers appear in the left-hand margin. Pages must be numbered.

LaTeX
You are recommended to use the Elsevier article class elsarticle.cls to prepare your manuscript and BibTeX to generate your bibliography.
Our LaTeX site has detailed submission instructions, templates and other information.

Article structure
Subdivision - numbered sections
Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

Introduction
State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Material and methods
Provide sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized, and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

Under Materials and Methods, describe and cite where applicable sampling protocols, sample handling/preparation, and all experimental conditions and procedures (including quality control/quality assurance procedures), with sufficient clarity to permit qualified researchers to repeat the work. This section must include the number/size of samples collected, prepared and extracted, as well as number of analytical replicates per sample; and the statistical procedures/programs used to assess the work should be cited. A minimum of three analyses must be performed for each reported mean value, along with some indication of variability. Data must be reported to the appropriate number of significant digits for that precision and instrumental sensitivity.

Results
Results should be clear and concise.

Actual analytical data should be reported. For example, report nitrogen in addition to a calculated protein value, or define the nitrogen to protein ratio clearly under Materials and Methods and thereafter use protein. All factors used in calculations (e.g. energy), and all components used in aggregations (e.g. retinol equivalents), should be specified. Carbohydrate reported as "Total carbohydrate by difference" is not acceptable in Results or in tables; however, it may be used in discussions. Use of "crude fibre" is discouraged.

A minimum of three analyses must be performed for each reported mean value, along with some indication of variability.

Discussion
This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate.

Conclusions
The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Appendices
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Essential title page information
- **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible. The title should be limited to 15 words or 80 characters.
- **Author names and affiliations.** Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name, and, if available, the e-mail address of each author.
- **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. Ensure that telephone and fax numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address.
• **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a "Present address" (or "Permanent address") may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

### Highlights

Highlights are mandatory for this journal as they help increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: example Highlights.

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

### Abstract

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

The abstract (200 words maximum) must briefly summarize major findings and conclusions. Do not use statements such as "Results are discussed". Many abstracting services use abstracts without modification, so this section should be able to stand alone and be comprehensible without the rest of the paper (do not refer to items in the reference list which will not accompany the abstract in some instances).

### Keywords

A minimum of 6-10 keywords must be listed. Authors should bear in mind that keywords allow the article to be found by Internet database search engines and considerably increase article citations when they are as numerous and comprehensive as possible.

### Abbreviations

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

### Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

### 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, it is recommended to include the following sentence:

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

### Nomenclature and units

The decimal point, not the decimal comma, should be used when reporting numeric data in tables and text. Insert a zero in front of a decimal point when it applies. For instance, instead of .36 use 0.36. All numeric data must be presented to an appropriate number of significant digits (for a discussion

The International System of Units (SI, Systeme International d'Unites) or the SI-derived system should be used in reporting units of measurement, including dates in the format of year-month-day. If other units are mentioned, please give their equivalent in SI. Energy should be given as kJ or MJ (equivalent kcal or Mcal may be given in parentheses). The Centigrade scale (°C) may be used for temperature.

Math formulae
Please submit math equations as editable text and not as images. Present simple formulae in line with normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

Footnotes
Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

Artwork
Electronic artwork
General points
• 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.
• Submit each illustration as a separate file.
• Ensure that color images are accessible to all, including those with impaired color vision.

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.

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.

Text graphics
Text graphics may be embedded in the text at the appropriate position. If you are working with LaTeX and have such features embedded in the text, these can be left. See further under Electronic artwork.

Tables
Please submit tables as editable text and not as images. Tables are to be collected together into a single file and uploaded separately from the body of the manuscript; do not embed tables (or figures) in the manuscript. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules.

References
Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

Preprint references
Where a preprint has subsequently become available as a peer-reviewed publication, the formal publication should be used as the reference. If there are preprints that are central to your work or that cover crucial developments in the topic, but are not yet formally published, these may be referenced. Preprints should be clearly marked as such, for example by including the word preprint, or the name of the preprint server, as part of the reference. The preprint DOI should also be provided.

References in a special issue
Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley. Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal's style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software.

Reference style
Responsibility for the accuracy of bibliographic citations lies entirely with the authors. The manuscript should be carefully checked to ensure that the spelling of authors' names and dates are exactly the same in the text as in the reference list.

Please ensure that every reference cited in the text is also present in the reference list at the end of the manuscript (and vice versa).

All citations in the text should refer to:
1. Single author: the author's name (without initials, unless there is ambiguity) and the year of publication;
2. Two authors: both authors' names and the year of publication;
3. Three or more authors: first author's name followed by et al. and the year of publication.
Citations may be made directly or parenthetically. Groups of references should be listed first alphabetically, then chronologically. Examples: "as demonstrated (Allan, 1996a, b, 1999; Allan & Jones, 1995). Kramer et al. (2000) have recently shown..."

References cited together in the text should be arranged chronologically. The list of references must be arranged alphabetically on authors' names, and should be as full as possible, listing all authors, the full title of articles and full title of journals, publisher and year.

Titles of periodicals mentioned in the list of references must be spelled out in full.

In the case of publications in any language other than English, the original title is to be retained. However, the titles of publications in non-Latin alphabets should be transliterated, and a notation such as "(in Russian)" or "(in Greek, with English abstract)" should be added.

References concerning unpublished data and "personal communications" must not be cited in the reference list but may be mentioned in the text, giving the full details (name and affiliation of the contact). References included in the reference list as "in press" should follow the standard reference style of the journal and should include a substitution of the publication data with "in press". Citation of a reference as "in press" implies that the item has been accepted for publication. In the final publication, material referenced as "submitted" is not acceptable - if it cannot be referenced as "in press" then the text needs to be revised to state "unpublished results" and the reference deleted from the reference list.

The following are examples of reference layouts. Please use a hanging indent (second and subsequent lines indented).

Reference to a chapter in a monograph:


Reference to a chapter in a book


Reference to an article in a journal:


Note: If necessary, cite issue number if page numbering is not continuous.

Reference to a book


Reference to a published standard


Reference to a paper in published conference proceedings
Reference to a thesis


Note: The thesis should be publicly available

For Website references:


When reporting results of studies using nutrient databases, authors should cite and reference the database and/or software product with name, version number, release date, and vendor.

Journal abbreviations source


Video

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

Data visualization

Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.

Supplementary material

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.

Research data
This journal requires and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings, which may also include software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. When sharing data in one of these ways, you are expected to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

Data linking
If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

Research Elements
This journal enables you to publish research objects related to your original research – such as data, methods, protocols, software and hardware – as an additional paper in a Research Elements journal.

Research Elements is a suite of peer-reviewed, open access journals which make your research objects findable, accessible and reusable. Articles place research objects into context by providing detailed descriptions of objects and their application, and linking to the associated original research articles. Research Elements articles can be prepared by you, or by one of your collaborators.

During submission, you will be alerted to the opportunity to prepare and submit a manuscript to one of the Research Elements journals.

More information can be found on the Research Elements page.

Data statement
To foster transparency, we require you to state the availability of your data in your submission if your data is unavailable to access or unsuitable to post. This may also be a requirement of your funding body or institution. You will have the opportunity to provide a data statement during the submission process. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

AFTER ACCEPTANCE

Online proof correction
To ensure a fast publication process of the article, we kindly ask authors to provide us with their proof corrections within two days. Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.
If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.

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.

**Offprints**
The corresponding author will, at no cost, receive a customized Share Link providing 50 days free access to the final published version of the article on ScienceDirect. The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

**AUTHOR INQUIRIES**
Visit the Elsevier Support Center to find the answers you need. 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.

**Disclaimer**
Articles and any other material published in the *Journal of Food Composition and Analysis* represent the opinions of the authors and should not be construed to reflect the opinions of the Editors or the publishers. Any data included in articles on commercial foods are reported solely as factual information and are limited to the samples analysed. No warranty or guarantee is made or implied that other samples of these products will have the same or similar composition. The inclusion of such articles or data does not imply endorsement of any product.

All enquiries may be addressed to:
Journal of Food Composition and Analysis
Email: jfca@elsevier.com

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