DESCRIPTION

Aims and Scope of Field Crops Research

SCIENTIFIC NOVELTY

Field Crops Research is an international journal publishing scientific articles on:

√ Original experimental and modelling research.
√ Re-analysis of published data (including meta-analysis) that demonstrates new scientific insight, original technologies or novel methods at crop, field, farm and landscape levels.
√ Studies at lower level of organisation (plant to molecular) must demonstrate scaling up to crop level or higher.

FOCUS

The focus of Field Crops Research is crop ecology, crop physiology and agronomy of field crops for food, fibre, feed, medicine and biofuel.
The inclusion of yield data is encouraged to demonstrate how the field experiments contribute to the understanding of the bio-physical processes related to crop development, growth and the formation and realisation of yield.

Articles on phenotyping, genetics, breeding, quality (grain, fibre, fodder), remote and non-contact sensing, crop protection (diseases, pests, weeds), soils and climate may be considered, provided they are integrated with crop ecology, crop physiology, and/or agronomy.

SCIENTIFIC and PRESENTATION STANDARD

Manuscripts must be written in grammatically sound English. Objectives must flow from complete, brief, unbiased and updated review of the literature. Experimental design must match objectives. Field experiments must be repeated in at least two seasons or locations. Key agronomic practices and environmental conditions (soil, weather) must be detailed, and weather information should be shown in relation to crop phenology. Data must be analysed with appropriate statistics, and results have to be concise and address objectives. A separate discussion must not repeat results but place findings in agronomic context with conclusions fully justified by data.

OUT of SCOPE
Research that is corroborative, descriptive, or only of local significance. Studies carried-out exclusively under controlled-environment conditions. Studies on natural grasslands, horticultural (i.e., vegetable and fruit species), woody perennial, medicinal and non-cultivated species. Articles at lower levels of organisation that do not scale to crop level or higher. Articles on crop storage, transportation and usage, and social studies on crops and cropping systems.

Reviews and opinion papers

Reviews and opinion papers are normally by invitation. However, authors may submit expressions of interest to the Editors. These must include a 1-page statement of the timeliness, relevance, original aspects of the contribution, and an outline of the contents of the proposed contribution.

AUDIENCE

Temperate and Tropical Crop Scientists.

IMPACT FACTOR

2020: 5.224 © Clarivate Analytics Journal Citation Reports 2021

ABSTRACTING AND INDEXING

TROPAG/RURAL Database
Elsevier BIOBASE
EMBiology
BIOSIS Citation Index
Current Contents - Agriculture, Biology & Environmental Sciences
Ecological Abstracts
Field Crop Abstracts
Geographical Abstracts: Economic Geography
Environmental Abstracts
Engineering Village - GEOBASE
Biological and Agricultural Index
Scopus
Science Citation Index

EDITORIAL BOARD

Editors-in-Chief
Hezhong Dong, Shandong Academy of Agricultural Sciences, Jinan, China
Agronomy and physiology of major field crops under monoculture or multi cropping, with a focus on cotton under or without abiotic stresses like salinity, drought, waterlogging and shading
Jagdish K. Ladha, University of California Davis, Davis, California, United States of America
Rice, conservation agriculture, Nitrogen
Richard A. Richards, Commonwealth Scientific and Industrial Research Organisation, Canberra, Australia
Wheat, physiology, abiotic stress, yield potential, breeding, root biology

Associate Editors
Tapan Kumar Adhya, Kalinga Institute of Industrial Technology, Bhubaneswar, India
Marc Corbeels, International Maize and Wheat Improvement Center (CIMMYT) and French Agricultural Research Centre for International Development (CIRAD), Nairobi, Kenya
Crop/soil modelling, Soil fertility management, Smallholder cropping systems, Sub-Saharan Africa, Climate change adaptation
Antonio Hall, Institute for Agricultural Plant Physiology and Ecology, Ciudad De Buenos Aires, Argentina
Crop physiology, Ecology or agronomy in any crop or forage species, Crop breeding
Qingfang Han, Northwest Agriculture and Forestry University, Yangling, Shaanxi, China
Irrigation and nutrition management, light use efficiency, semiarid regions, mulching
Amelia Henry, International Rice Research Institute, Manila, Philippines
Drought, Root, Abiotic stress, Physiology, Rice

Krishna Jagadish, Kansas State University Department of Agronomy, Manhattan, Kansas, United States of America
Heat and drought stress, Reproductive physiology, Source-sink relationship, Grain yield and quality, Climate change

Kurt-Christian Kersebaum, Leibniz Centre for Agricultural Landscape Research, Müncheberg, Germany
Modeling soil-crop-atmosphere interactions, Nitrogen dynamics in soils, Climate change impact assessment and adaptation, Model based evaluation of agricultural management

Jairo Palta, CSIRO Centre for Environment and Life Sciences, Floreat, Australia
Water (drought), nitrogen (NUE), Heat and climate change, Genotypes, environments and management practices, Physiology and genetics of processes, Crop yield and quality, Accumulation and utilization of C and N resources, Crop roots systems, Integrative effect of elevated CO2, High temperature and terminal drought.

Jonne Rodenburg, University of Greenwich Natural Resources Institute, Chatham, United Kingdom
Rice, Sorghum, Maize, weeds, Parasitic weeds, Striga, Vatiety screening, African cropping systems/ farming systems, Sub-Saharan Africa, Smallholder farmers, Agroecology, Sustainable intensification

Daniel Rodriguez, University of Queensland, Brisbane, Queensland, Australia
Crop eco-physiology, Maize, Wheat, Sorghum, Pulses, Field agronomy, Climate variability, Climate change, farm, Profits and risks

Victor Sadras, South Australian Research and Development Institute, Adelaide, Australia
Water, Nitrogen, Crop physiology, plant density, Ecology

Roxana Savin, University of Lleida, Lleida, Spain
Wheat, barley, crop physiology, grain quality, WUE, NUE.

Liang Tang, Nanjing University of Agriculture, Nanjing, China
Crop N management; high temperature effect on rice and wheat productivity; crop modelling and climate change

Enli Wang, CSIRO Land and Water, Black Mountain, Australia
Crop modelling, Farming system modelling, Crop physiology, Yield potential, Yield gap, Wheat, Maize

Xinyou Yin, Wageningen University, Wageningen, Netherlands
Crop modelling, Photosynthesis, Genotype-environment interaction, Climate change impacts

Book Review Editor
Jeffrey White, USDA-ARS Arid Land Agricultural Research Center, Maricopa, Arizona, United States of America
Crop modeling and global change; tillage; conservation agriculture and zero Ttllage sites; carbon sequestration and agriculture; data management; phenomics.

Editorial Advisory Board
John F. Angus, Commonwealth Scientific and Industrial Research Organisation, Canberra, Australia
Crop and pasture sequences, Water and nitrogen dynamics of crops, Cropping systems, Simulation modelling

Senthold Asseng, University of Florida, Gainesville, Florida, United States of America
Cropping systems analysis, Crop productivity and sustainability, Atmospheric-crop-soil systems, Managing climate variability, Climate change impact and adaptation

Lucas Borrás, National University of Rosario, Rosario, Argentina
Crop physiology, Yield components, Seed filling, Agronomic practices, Abiotic stress

Daniel Calderini, University of Southern Chile, Valdivia, Chile
Crop physiology, Phenotyping, Physiological and molecular approaches on grain weight, Potential grain yield, Abiotic stress

Ignacio Ciampitti, Kansas State University, Manhattan, Kansas, United States of America
Crop eco-physiology and agronomy, Crop modelling, Corn, soybean, sorghum and oilseeds, Rainfed and Irrigated farming systems, Remote sensing

Benoit Clerget, CIRAD Montpellier-Occitanie Research Centre, Montpellier, France
Agronomy, Crop physiology, Traditional plant breeding, Rice, maize, sorghum and pearl millet, Rice production systems in the tropical, and sub-tropical regions of Asia

Mariano Cossani, South Australian Research and Development Institute, Adelaide, Australia
Water use efficiency, Nitrogen use efficiency, Drought, Heat, temperate cereals

Fernanda Dreccer, CSIRO Agricultural Production Systems Research Unit, Toowoomba, Australia
Crop physiology, crop simulation modelling, phenotyping, phenology, reproductive physiology, yield potential, heat, drought, wheat, pulses

Greg Edmeades
Crop Science and Agronomy, plant breeding, tropical maize, crop physiology

R A (Tony) Fischer, CSIRO Agriculture and Food, Canberra City, Australia
Yield physiology and agronomy of wheat, breeding for yield in wheat, farm and potential yield progress across wheat and other major commodities

John Foulkes, University of Nottingham School of Biosciences, Loughborough, United Kingdom

Thomas Gaiser, University of Bonn, Bonn, Germany

Modelling of crop-soil interface, Crop water uptake, Nutrient turnover and nutrient uptake, Soil carbon and nitrogen turnover, Tropical cereal and tuber crops, Soil salinity, Pollution of surface and ground waters from agricultural activities

Luis Garcia del Moral, University of Granada, Granada, Spain

Crop physiology, Abiotic stress, Plant growth analysis, Crop phenology, Ecophysiological and molecular approaches in plant breeding

Donald Gaydon, CSIRO Queensland Bioscience Precinct Agriculture and Food Unit, St Lucia, Australia

Cropping systems modelling, APSIM, Rice, Rice-wheat systems, Conservation agriculture, Irrigation, Water productivity, Climate change adaptation

Patricio Grassini, University of Nebraska-Lincoln Department of Agronomy and Horticulture, Lincoln, Nebraska, United States of America

Agronomy, Yield potential, Yield-gap analysis, Resource-use efficiency, Crop simulation models, Crop Ecophysiology

Stephan Haefele, The University of Adelaide, Adelaide, Australia

Agronomy, Black carbon, Phenotyping, Rice, Soil science, Wheat

Min Huang, Hunan Agricultural University, School of Agronomy, Changsha, China

Rice, No-tillage, Machine transplanting, Plant density, Nitrogen management, Grain yield, Yield potential, Yield gap

James Hunt, La Trobe University, Department of Animal, Plant and Soil Sciences, Bundoora, Australia

Agronomy, crop physiology, farming systems, wheat

Inman-Bamber, CSIRO Townsville Australian Tropical Sciences and Innovation Precinct, Townsville, Australia

Sugarcane physiology, agrometerology and water relations, controlled environment studies including CO2, crop model development

Krishna Jagadish, Kansas State University Department of Agronomy, Manhattan, Kansas, United States of America

Heat and drought stress, Reproductive physiology, Source-sink relationship, Grain yield and quality, Climate change

Dong Jiang, Nanjing Agricultural University, Nanjing, China

Abiotic stress, quality, physiology, agronomy, temperate cereals

Chris Johansen, Murdoch University, Murdoch, Australia

Plant nutrition, crop physiology, drought and salinity stress, agronomy, on-farm research, grain legumes

Eric Justes, French Agricultural Research Centre for International Development, Department Persyst, Montpellier, France

Agronomy and Agroecology, C and N cycles in arable crops, Soil-crop modelling, Arable cropping system design and multicriteria assessment, Intercropping, Cover crops

Yoichiro Kato, The University of Tokyo, Tokyo, Japan

Crop physiology and agronomy, Rice, Rainfed and irrigated rice production systems in the tropical, sub-tropical and temperate regions of Asia

Alison Kelly, Queensland Department of Agriculture and Fisheries, Australia

Experimental design, Linear Mixed models, Statistical Genetics, High dimensional data, High Throughput phenotyping, Near infrared spectral imaging

Holger Kirchmann, Swedish University of Agricultural Sciences, Uppsala, Sweden

Turnover, decomposition and nutrient losses from organic manures in soil, Reactions of plant nutrients in soil (nitrogen and phosphorus), Changes in soil fertility in long-term field experiments, Recycling of plant nutrients from wastes, Effects of trace metals on yield and quality of crops, Methods to improve nutrient use efficiency.

Virender Kumar, International Rice Research Institute, Manila, Philippines

Weed management, agronomy, conservation agriculture, sustainable intensification, System Agronomy, direct-seeded rice

M. Rebecca C. Laza, International Rice Research Institute, Manila, Philippines

Crop Physiology and Agronomy, morpho-physiological bases of yield increase, source-sink relationship on yield formation, high night temperature effect on rice productivity, field phenomics for lodging resistance and yield component traits, SPAD-based N management, whole-plant physiological measurement

Gilles Lemaire, National Research Institute for Agriculture Food and Environment Nouvelle-Aquitaine Poitiers Center, Lusignan, France

Feng-Min Li, Lanzhou University, Lanzhou, China
Crop eco-physiological adaptation to arid environment, field crops management, ecosystem sustainable designing and the role of human being in restoring and conserving the structure and function of integrated ecosystem especially in the arid and semiarid regions in Northwest China and other similar regions in the world.

Julianne Lilley, CSIRO Agriculture and Food, Canberra City, Australia
Farming systems modelling, simulation modelling, APSIM, canola, root systems, phenology, genotype by environment by management interactions

Bruce Linquist, University of California Davis, Davis, California, United States of America
Rice systems, nutrient and carbon cycling, nutrient management, productivity, greenhouse gas emissions, water quality, water use.

Leilei Liu, Nanjing Agricultural University Department of Agronomy, Nanjing, China
Crop growth simulation model, impact of climate change on crop yield or quality, yield gap, model uncertainty, wheat, rice

Romulo Lollato, Kansas State University Department of Agronomy, Manhattan, Kansas, United States of America
Agronomy, Crop modeling, Rainfed systems, Yield potential, Yield gap, Water use efficiency, Wheat.

Gustavo Maddonni, University of Buenos Aires, Buenos Aires, Argentina
Dry-land summer crop agronomy, Canopy structure of maize crops (sowing date, plant population density, row spacing, and genotype)

Daniel Miralles, University of Buenos Aires, Buenos Aires, Argentina
Crop physiology applied to management and breeding, wheat and barley.

Juan Pablo Monzon, National Scientific and Technical Research Council, Tucumán, Argentina
Eco-physiology, Crop modelling, farming systems, Crop yield gap analysis

Lixiao Nie, Hainan University, Haikou, China
Rice, Seed germination biology, Direct seeding rice, Aerobic rice, Ratoon rice, Nutrient management, Water productivity, Rice-based cropping system

Maria Otegui, University of Buenos Aires, Buenos Aires, Argentina
Crop physiology, Abiotic stress, Crop Modelling, Agronomy.

Shaobing Peng, Huazhong Agricultural University College of Plant Science and Technology, Wuhan, China
Yield potential, photosynthesis, nitrogen use efficiency, stress physiology, climate change, crop management, rice production.

Hans-Peter Piepho, University of Hohenheim, Stuttgart, Germany
Linear models, mixed models, spatial statistics, design of experiments.

Cameron Pittelkow, University of California Davis Department of Plant Sciences, Davis, California, United States of America
Agronomy, Nutrient management, Cropping systems analysis, GHG emissions, Resource-use efficiencies, Sustainable intensification

Greg Rebetzke, Commonwealth Scientific and Industrial Research Organisation, Canberra, Australia
Plant breeding, quantitative genetics, statistics, physiology.

Michael Robertson, Commonwealth Scientific and Industrial Research Organisation, Canberra, Australia
Farming systems, agronomy, modelling, food systems, digital agriculture

Diego Rubiales, Institute for Sustainable Agriculture, Cordoba, Spain
plant breeding, disease resistance, genetic resources utilization, mechanisms of resistance, legumes, cereals, rust, parasitic weed, powdery mildew, ascochyta blight, fusarium wilt

Kazuki Saito, Africa Rice Center (AfricaRice), Cotonou, Benin
Agronomy, Crop physiology, Rice, Yield gap, Nutrient management, Sustainability, On-farm research

João Vasco Silva, Wageningen University, Wageningen, Netherlands
Systems agronomy, Yield gap analysis, Resource use efficiency, Yield variability, Crop modelling, Cereals and arable crops, Sustainable intensification

Yadvinder Singh, Punjab Agricultural University, Ludhiana, India
conservation agriculture, Crop productivity and sustainability, crop residue management, integrated nutrient management, nutrient use efficiency, rice, soil science, soil quality, wheat.

Gustavo A. Slafer, University of Lleida, Lleida, Spain
Wheat, barley, cereals, crop-physiology, yield, yield components, water use efficiency, nitrogen use efficiency, trait useful for breeding.

Nese Sreenivasulu, International Rice Research Institute, Manila, Philippines
Rice grain quality, seed biology, double burden nutrition, glycemic index, micronutrients, grain protein

Vincent Vadez, ICRISAT Crop Physiology Laboratory, Patancheru, India
Drought, symbiotic nitrogen fixation, abiotic stresses, vapor pressure deficit, salinity, low soil fertility, modelling,

Tony Vyn, Purdue University, West Lafayette, Indiana, United States of America
Cropping systems, Conservation tillage, Maize hybrid/plant density/nitrogen interactions, Greenhouse gas emissions, Soil quality, Nutrient management, Crop rotation systems, Crop physiology, Pest management interactions with tillage systems, Maize, Soybean

**Len Wade**, The University of Queensland School of Agriculture and Food Sciences, Saint Lucia, Queensland, Australia

Farming systems, GxE interactions, Root traits, Drought avoidance, Perennial grains

**Fran Walley**, University of Saskatchewan, Saskatoon, Saskatchewan, Canada

Agronomy, soil microbiology (N2 fixation) and cropping systems, with an emphasis on nutrient cycling.

**Jing Wang**, China Agricultural University, Beijing, China

Agrometeorology, Crop modelling, Climate change impact and adaptation, Crop yield gap analysis based on crop growth model, agro-meteorological disaster assessment

**Wei Wu**, Hainan University College of Tropical Crops, Hainan, China

Agronomy, Soil and nutrient management, Water use efficiency, Crop lodging, Abiotic stress, wheat, canola, maize, rice

**Jianchang Yang**, Yangzhou University Agricultural College, Yangzhou, China

Grain filling of cereals, water-saving irrigation, high-yielding production, abiotic stress.

**Xiying Zhang**, Institute of Genetics and Developmental Biology Center for Agricultural Resources Research, Shijiazhuang, China

Water use efficiency, Evapotranspiration, Crop productivity, Climate change, cultivation, Soil water, Soil nutrients, Crop modelling.

**Yanjun Zhang**, Shandong Academy of Agricultural Sciences, Cotton Research Center, Jinan, China

Abiotic stress, crop physiology and molecular biology, as well as plastic film mulching
GUIDE FOR AUTHORS

Your Paper Your Way
We now differentiate between the requirements for new and revised submissions. You may choose to submit your manuscript as a single Word or PDF file to be used in the refereeing process. Only when your paper is at the revision stage, will you be requested to put your paper in to a 'correct format' for acceptance and provide the items required for the publication of your article. To find out more, please visit the Preparation section below.

INTRODUCTION

Field Crops Research is an international journal publishing scientific articles on both experimental and modelling research at the field, farm and landscape level on temperate and tropical crops and cropping systems, with a focus on crop ecology and physiology, agronomy, and plant genetics and breeding. Articles on plant genetics and breeding need to be integrated with crop ecology and physiology, and/or agronomy. An economic analysis may be included if appropriate.

Papers must demonstrate new scientific insight, original technologies or novel methods that have general application and relevance to field crops. Research findings of a purely corroborative nature, descriptive or of only local significance will not be considered.

The journal's focus is major field crops for food and feed. Other species, including important biofuel crops, could be considered if they contribute to the basic understanding of processes related to development, growth and yield of field crops. Horticultural, medicinal and non-cultivated species are outside the scope of the journal.

Field experiments on which manuscripts are based should, unless exceptional circumstances apply, include at least two seasons and/or multiple locations/environments. The inclusion of yield data is highly encouraged to demonstrate how the field experiments contribute to a better understanding of the bio-physical processes related to crop growth. Papers on crop protection (diseases, pests, weeds) can be accepted provided they have a strong focus on crop processes, including consequences for yield. Experiments under controlled conditions (glasshouse, growth chamber) are only acceptable as complementary to field work; studies carried-out exclusively under controlled conditions are outside the scope of the journal. Articles on crop storage, transportation and usage, and social studies on crops and cropping systems, are outside the scope of the journal.

The journal of Field Crops Research would like to inform you of a significant change in our editorial process: all new submissions to Field Crops Research will first be assigned on an ad random basis to the Editors-in-Chief for initial evaluation; manuscripts that are within the scope of the journal and meet the quality standards, will be assigned to the Associate Editors who handle the peer-review process and make the final editorial decision to accept or reject the manuscript for publication.

Reviews covering the various subject areas are solicited. Authors should contact the Editors-in-Chief before the submission of a review article in order to establish the journal's interest in the topic and nature of the proposed review.

Types of paper
1. Original full papers (Regular Papers)
2. Review articles
3. Opinion Papers
4. Short Communications
5. Book Reviews

Original papers should report the results of original research. The material should not have been previously published elsewhere, except in a preliminary form.

Reviews and Opinion Papers covering the various subject areas are solicited; authors should contact the Editors-in-Chief before submission in order to establish the journal's interest in the topic and nature of the paper.
A Short Communication is a concise, but complete, description of a limited investigation, which will not be included in a later paper. Short Communications should be as completely documented, both by reference to the literature and description of the experimental procedures employed, as a regular paper. They should not occupy more than 6 printed pages (about 12 manuscript pages, including figures, etc.).

Book reviews will be included in the journal on a range of relevant books which are no more than 2 years old. Book reviews will be solicited by the Book Review editor. Unsolicited reviews will not usually be accepted, but suggestions for appropriate books for review may be sent to: Dr. J.W. White, USDA-ARS, US Arid-Land Agricultural Research Center, 21881 North Cardon Lane, Maricopa, 85138, USA, Email: Jeffrey.White@ars.usda.gov

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 figures (include relevant captions)
• All tables (including titles, description, footnotes)
• Ensure all figure and table citations in the text match the files provided
• Indicate clearly if color should be used for any figures in print
Graphical Abstracts / Highlights files (where applicable)
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.

BEFORE YOU BEGIN
Ethics in publishing
Please see our information on Ethics in publishing.

Declaration of competing 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 conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors should complete the declaration of competing interest statement using this template and upload to the submission system at the Attach/Upload Files step. Note: Please do not convert the .docx template to another file type. Author signatures are not required. If there are no interests to declare, please choose the first option in the template. More information.
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.

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).

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. These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

Author contributions
For transparency, we encourage authors to submit an author statement file outlining their individual contributions to the paper using the relevant CRediT roles: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing. Authorship statements should be formatted with the names of authors first and CRediT role(s) following. 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 is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable in one of our other participating journals, then you may be asked to consider transferring the article to one of those. If you agree, your article will be transferred automatically on your behalf with no need to reformat. Please note that your article will be reviewed again 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 then this should be stated.

**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 and language services**

Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who require information about language editing and copyediting services pre- and post-submission please visit https://webshop.elsevier.com/language-editing-services/language-editing/ or our customer support site at service.elsevier.com for more information. Elsevier does not carry out language or copy editing on submitted manuscripts.

**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.

Submission

https://www.editorialmanager.com/field/default.aspx

Please note that the Chief Editors are as follows:

Hezhong Dong
Jagdish K. Ladha
Richard A. Richards

The e-mails of all co-authors must be submitted together with the manuscript.

Referees

Please submit, with the manuscript, the names, addresses and e-mail addresses of 4 potential reviewers, who have published in refereed international journals. Potential reviewers should not have any conflict of interest with any of the co-authors of the manuscript. Please do not submit the names
of potential reviewers who are colleagues at your current institution or those of your co-authors, are former supervisors of a co-author, or who have co-authored papers with any co-author of the current manuscript in the last five years. The authors are strongly encouraged to nominate at least one potential reviewer from a different country. Note that the editor retains the sole right to decide whether or not the suggested reviewers are used.

**PREPARATION**

**NEW SUBMISSIONS**

Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts your files to a single PDF file, which is used in the peer-review process.

As part of the Your Paper Your Way service, you may choose to submit your manuscript as a single file to be used in the refereeing process. This can be a PDF file or a Word document, in any format or layout that can be used by referees to evaluate your manuscript. It should contain high enough quality figures for refereeing. If you prefer to do so, you may still provide all or some of the source files at the initial submission. Please note that individual figure files larger than 10 MB must be uploaded separately.

*only YPYW (Your Paper Your Way)*

There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct.


**Formatting requirements**

There are no strict formatting requirements but all manuscripts must contain the essential elements needed to convey your manuscript, for example Abstract, Keywords, Introduction, Materials and Methods, Results, Conclusions, Artwork and Tables with Captions.

If your article includes any Videos and/or other Supplementary material, this should be included in your initial submission for peer review purposes.

Divide the article into clearly defined sections.

Please ensure the text of your paper is double-spaced and has consecutive line numbering - this is an essential peer review requirement.

**Figures and tables embedded in text**

Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file. The corresponding caption should be placed directly below the figure or table.

**Peer review**

This journal operates a single anonymized 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. Editors are not involved in decisions about papers which they have written themselves or have been written by family members or colleagues or which relate to products or services in which the editor has an interest. Any such submission is subject to all of the journal’s usual procedures, with peer review handled independently of the relevant editor and their research groups. More information on types of peer review.

**REVISED SUBMISSIONS**
Use of word processing software
Regardless of the file format of the original submission, at revision you must provide us with an editable file of the entire article. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). 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.

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 including relevant literature which demonstrates the need for the reported study.

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.

Statistics
For experiments, both the treatment and the design structure, including blocking units, randomization units and observational units, should be clearly identified. When repeated measurements are taken on the same unit, this needs to be explicitly stated. Methods used for statistical analysis should be described with sufficient detail so that a reader, if equipped with the paper, the raw data and the same software, could reproduce all results reported. For example, if an experiment is analysed by a linear mixed model, all fitted terms should be explicitly stated, either in the text or in an equation, specifying which effects are fixed and which are random. For a review of statistical problems frequently encountered with papers submitted to this journal, and how to avoid them, see


Results
Results should be clear and concise and must be separate from the Discussion section.

Discussion
This should explore the significance of the results of the work, not repeat them. "Separate Results and Discussion sections are required". Avoid extensive citations and discussion of published literature.

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.
• Author names and affiliations. Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. You can add your name between parentheses in your own script behind the English transliteration. 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. This responsibility includes answering any future queries about Methodology and Materials. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**

• **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.

**Graphical abstract**

Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view Example Graphical Abstracts on our information site.

Authors can make use of Elsevier's Illustration Services to ensure the best presentation of their images and in accordance with all technical requirements.

**Keywords**

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

**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, 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.

**Nomenclature and Units**

Follow internationally accepted rules and conventions: use the international system of units (SI). If other units are mentioned, please give their equivalent in SI.

Authors and Editor(s) are, by general agreement, obliged to accept the rules governing biological nomenclature, as laid down in the *International Code of Botanical Nomenclature*, the *International Code of Nomenclature of Bacteria*, and the *International Code of Zoological Nomenclature*.

All biota (crops, plants, insects, birds, mammals, etc.) should be identified by their scientific names when the English term is first used, with the exception of common domestic animals.

All biocides and other organic compounds must be identified by their Geneva names when first used in the text. Active ingredients of all formulations should be likewise identified.

For chemical nomenclature, the conventions of the *International Union of Pure and Applied Chemistry* and the official recommendations of the *IUPAC-IUB Combined Commission on Biochemical Nomenclature* should be followed.

**Math formulae**

Present simple formulae in the line of normal text where possible. In principle, variables are to be presented in italics.

Number consecutively any equations that have to be displayed separate from the text (if referred to explicitly in the text).

Subscripts and superscripts should be clear.

Greek letters and other non-Roman or handwritten symbols should be explained in the margin where they are first used. Take special care to show clearly the difference between zero (0) and the letter O, and between one (1) and the letter l.

Give the meaning of all symbols immediately after the equation in which they are first used. For simple fractions use the solidus (/) instead of a horizontal line.

Equations should be numbered serially at the right-hand side in parentheses. In general only equations explicitly referred to in the text need be numbered.

The use of fractional powers instead of root signs is recommended. Also powers of e are often more conveniently denoted by exp.

Levels of statistical significance which can be mentioned without further explanation are: *P < 0.05, **P < 0.01 and ***P < 0.001.

In chemical formulae, valence of ions should be given as, e.g., Ca$^{2+}$, not as Ca$^{++}$. Isotope numbers should precede the symbols, e.g., $^{18}$O.

**Footnotes**

Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article.

**Artwork**

**Electronic artwork**

**General points**

- Make sure you use uniform lettering and sizing of your original artwork.
- Preferred fonts: Arial (or Helvetica), Times New Roman (or Times), Symbol, Courier.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Indicate per figure if it is a single, 1.5 or 2-column fitting image.
- For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.
- Please note that individual figure files larger than 10 MB must be provided in separate source files.
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**
Regardless of the application used, 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 the font or save the text as 'graphics'.
- TIFF (or JPEG): Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
- TIFF (or JPEG): Bitmapped line drawings: use a minimum of 1000 dpi.
- TIFF (or JPEG): Combinations bitmapped line/halftone (color or grayscale): a minimum of 500 dpi is required.

**Please do not:**
- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
- 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. 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.

**Tables**
Number tables consecutively in accordance with their appearance in the text. Place footnotes to tables below the table body and indicate them with superscript lowercase letters. Avoid vertical rules. Be sparing in the use of tables and ensure that the data presented in tables do not duplicate results described elsewhere in the article. Tables should be on separate pages: one table per page.

**References**

**Citation in text**
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

**Reference links**
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.

A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.
Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

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.

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.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/field-crops-research
When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference formatting
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

Reference style
Text: 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, 1996b, 1999; Allan and Jones, 1995). Kramer et al. (2000) have recently shown ...."

List: References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters "a", "b", "c", etc., placed after the year of publication.
Examples:
Reference to a journal publication:
Reference to a book:
Reference to a chapter in an edited book:

Journal abbreviations source
Journal names should be abbreviated according to the List of Title Word Abbreviations.

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 encourages 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. To facilitate reproducibility and data reuse, this journal also encourages you to share your 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. If you are sharing data in one of these ways, you are encouraged 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).

Mendeley Data
This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the Mendeley Data for journals page.

Data in Brief
You have the option of converting any or all parts of your supplementary or additional raw data into a data article published in Data in Brief. A data article is a new kind of article that ensures that your data are actively reviewed, curated, formatted, indexed, given a DOI and made publicly available to all upon publication (watch this video describing the benefits of publishing your data in Data in Brief).
You are encouraged to submit your data article for *Data in Brief* as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to *Data in Brief* where it will be editorially reviewed, published open access and linked to your research article on ScienceDirect. Please note an open access fee is payable for publication in *Data in Brief*. Full details can be found on the [Data in Brief website](https://www.elsevier.com/locate/fcr). Please use this template to write your *Data in Brief* data article.

**MethodsX**
You have the option of converting relevant protocols and methods into one or multiple MethodsX articles, a new kind of article that describes the details of customized research methods. Many researchers spend a significant amount of time on developing methods to fit their specific needs or setting, but often without getting credit for this part of their work. MethodsX, an open access journal, now publishes this information in order to make it searchable, peer reviewed, citable and reproducible. Authors are encouraged to submit their MethodsX article as an additional item directly alongside the revised version of their manuscript. If your research article is accepted, your methods article will automatically be transferred over to MethodsX where it will be editorially reviewed. Please note an open access fee is payable for publication in MethodsX. Full details can be found on the [MethodsX website](https://www.elsevier.com/locate/fcr). Please use this template to prepare your MethodsX article.

**Data statement**
To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the [Data Statement page](https://www.elsevier.com/locate/fcr).

**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. Both corresponding and co-authors may order offprints at any time via Elsevier's [Author Services](https://www.elsevier.com). 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](https://www.elsevier.com) 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.

© Copyright 2018 Elsevier | [https://www.elsevier.com](https://www.elsevier.com)