Aims and Scope of *Field Crops Research*

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

- experimental and modelling research at field, farm and landscape levels 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.** This focus includes **species used for cultivated pastures,** but excludes **natural grasslands.** **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.

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 and yield.

**Papers on crop protection** (diseases, pests, weeds) and **soil processes/properties** 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.**
Papers on remote sensing will only be considered if their focus is the use of these techniques to understand crop processes and their links to crop yield.

Reviews and Opinion Papers covering the various subject areas are solicited; authors should contact one of the Editors-in-Chief before submission of a review or an opinion paper in order to establish the journal's interest in the topic and nature of the paper. Contributions dealing with emerging topics are especially welcomed.

Out-of-scope submissions:
× Horticultural (i.e., vegetable and fruit species), woody perennial, medicinal and non-cultivated species are outside the scope of the journal.
× 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.

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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
Rice, conservation agriculture, Nitrogen
Richard A. Richards, Commonwealth Scientific and Industrial Research Organisation, Canberra, Australia
Wheat, physiology, abiotic stress, yield potential, breeding, root biology

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

Kurt-Christian Kersebaum, Leibniz Centre for Agricultural Landscape Research, Muncheberg, 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, Parastic 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 Agricultural University, 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
Crop modeling and global change; tillage; conservation agriculture and zero Tillage sites; carbon sequestration and agriculture; data management; phenomics.

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Crop and pasture sequences; Water and nitrogen dynamics of crops; Cropping systems; Simulation modelling

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Cropping systems analysis; Crop productivity and sustainability; Atmosphere-crop-soil systems; Managing climate variability; Climate change impact and adaptation

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Crop physiology; Yield components; Seed filling; Sgronomic 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
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 Drecce, CSIRO Agriculture and Food, Canberra City, 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
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

Thomas Gaiser, University of Bonn, Bonn, Germany
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
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
Agronomy; Yield potential; Yield-gap analysis; Resource-use efficiency; Crop simulation models; Crop Ecophysiology

Stephan Haefele, The University of Adelaide, Adelaide, South Australia, 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
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
Agronomy, 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.

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
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.
Bruce Linquist, University of California Davis, Davis, California, United States
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
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, Buenos Aires, 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
Agronomy, nitrogen, crop nutrition, intensification, cropping system, greenhouse gas emission

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
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
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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.

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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

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

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This journal operates a single blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then 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.

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State the objectives of the work and provide an adequate background including relevant literature which demonstrates the need for the reported study.

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