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DESCRIPTION

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.

AUDIENCE
Temperate and Tropical Crop Scientists.

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Ecological Abstracts
Environmental Abstracts
Field Crop Abstracts
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Soil fertility; crop modelling; soil carbon and nitrogen dynamics; conservation agriculture; smallholder farming systems.

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Crop physiology; drought resistance; efficient use of water and nitrogen; rice; sustainable crop production.

K.-C. Kersebaum, Leibniz Centre for Agricultural Landscape Research, Muencheberg, Germany
Modeling soil-crop-atmosphere interactions, nitrogen dynamics in soils, climate change impact assessment and adaptation, model based evaluation of agricultural management

D. Knight, University of Saskatchewan, Saskatoon, Saskatchewan, Canada
Nutrient cycling, crop system productivity, environmental impacts of agriculture, and optimizing the role of legumes in crop rotations

R. Richards, CSIRO, Acton, ACT 2609, Australia
Crop physiology, breeding, abiotic stress, yield potential, cereals

R.P. Rötter, Georg-August Universität Göttingen, Göttingen, Germany
Agronomy/soil nutrient management, water management, agrometeorology, climate change impact and adaptation research, crop growth simulation, agricultural systems modelling (farm, region and supra-national); land evaluation methods

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Soil fertility; nutrient management; fertilizers; soil N transformations; nutrient cycling; agronomy; agroforestry; crop residue management; ICT for agriculture; long-term experiments; sustainability of rice-based systems

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Crop physiology, phenotyping, physiological and molecular approaches on grain weight, potential grain yield, abiotic stress

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Expertise in Crop physiology; modelling; aflatoxin prediction models; environmental characterisation; crop improvement; legumes; maize.

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Crop ecology; physiology and agronomy with a particular emphasis on cotton physiology and agronomy.

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Climate change (impacts); agroecosystems (ecophysiology); resource use and management (land, water); systems analysis and modelling; agricultural sustainability assessment.

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T. Gaiser, Rheinische Friedrich-Wilhelms-Universität 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.

L.F. Garcia del Moral, Universidad de Granada, Granada, Spain
Crop physiology; abiotic stress; plant growth analysis; crop phenology; ecophysiological and molecular approaches in plant breeding.

D.S. Gaydon, CSIRO (The Commonwealth Scientific and Industrial Research Organization), St Lucia, Queensland, Australia
• Cropping systems modelling • APSIM • rice • rice-wheat systems • conservation agriculture • irrigation • water productivity • climate change adaptation

**P. Grassini**, University of Nebraska at Lincoln, Lincoln, Nebraska, USA
Agronomy

**S.M. Haefele**, University of Adelaide, Adelaide, Australia
agronomy, black carbon, phenotyping, rice, soil science, wheat.

**A. Henry**, International Rice Research Institute (IRRI), Metro Manila 1301, Philippines
Crop physiology; root biology; drought stress

**J. Hunt**, La Trobe University, Melbourne, Victoria, Australia

**G. Inman-Bamber**, CSIRO (The Commonwealth Scientific and Industrial Research Organization), Townsville, Queensland, Australia
Sugarcane physiology, agrometerology and water relations, controlled environment studies including CO2, crop model development

**K. Jagadish**, International Rice Research Institute (IRRI), Metro Manila, Philippines
Heat stress; combined heat and drought stress; rice reproductive physiology.

**C. Johansen**, Leeming, Australia
Plant nutrition, crop physiology, drought and salinity stress, agronomy, on-farm research, grain legumes

**H. Kirchmann**, Sveriges lantbruksuniversitet (SLU), 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.R.C. Laza**, International Rice Research Institute (IRRI), Metro Manilla 1301, 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

**F-M. Li**, Lanzhou University, Lanzhou, Gansu Province, 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.

**B. Linquist**, University of California, Davis, Davis, California, USA
Rice systems, nutrient and carbon cycling; nutrient management; productivity; greenhouse gas emissions; water quality; water use.

**D. Miralles**, Universidad de Buenos Aires, Buenos Aires, Argentina
Crop physiology applied to management and breeding; wheat and barley.

**J.P. Monzon**, Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Balcarce, Argentina
Eco-physiology; Crop modelling; farming systems; Crop yield gap analysis

**M. Otegui**, Universidad de Buenos Aires, Buenos Aires, Argentina
Crop physiology; Abiotic stress; Crop Modelling; Agronomy.

**S. Peng**, Huazhong Agricultural University, Wuhan, Hubei, China
Yield potential; photosynthesis; nitrogen use efficiency; stress physiology; climate change; crop management; rice production.

**H-P. Piepho**, Universität Hohenheim, Stuttgart, Germany
Linear models; mixed models; spatial statistics; design of experiments.

**G. Rebetzke**, CSIRO (The Commonwealth Scientific and Industrial Research Organization), Canberra, Australia
Plant breeding; quantitative genetics; statistics; physiology.

**M. Robertson**, CSIRO (The Commonwealth Scientific and Industrial Research Organization), PO Wembley, Western Australia, Australia
Agronomy; physiology; farming systems; cereals; grain legumes; canola.

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

**R. Savin**, Universitat de Lleida, Lleida, Spain
crop physiology, grain quality, abiotic stresses, nitrogen use efficiency, cereals

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

**G.A. Slafer**, Universitat de Lleida, Lleida, Spain
Wheat; Barley; Cereals; Crop-Physiology; Yield; Yield components; Water use efficiency; Nitrogen use efficiency; trait useful for breeding.
L. Tang, Nanjing Agricultural University, Nanjing, China
Crop N management; high temperature effect on rice and wheat productivity; crop modelling and climate change

M. Tollenaar, Climate Corporation, USA

V. Vadez, CGIAR Global Research Partnership, Patancheru, Andhra Pradesh, India
Drought, symbiotic nitrogen fixation, abiotic stresses, vapor pressure deficit, salinity, low soil fertility, modelling,

L.J. Wade, Brisbane, Australia
Farming systems; GxE interactions; root traits; drought avoidance; perennial grains.

F. Walley, University of Saskatchewan, Saskatoon, Saskatchewan, Canada
Agronomy, soil microbiology (N2 fixation) and cropping systems, with an emphasis on nutrient cycling.

J. 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

J.W. White, US Arid-Land Agricultural Research Center, Maricopa, Arizona, USA
Crop modeling and global change; tillage; conservation agriculture and zero tillage sites; carbon sequestration and agriculture; data management; phenomics.

J. Yang, Yangzhou University, Yangzhou, Jiangsu, China
Grain filling of cereals; water-saving irrigation; high-yielding production; abiotic stress.

X. Yin, Wageningen Universiteit, Wageningen, Netherlands
Crop phenology; crop genotype; environment; management interactions; ecophysiological approaches in genetics; gene/QTL-based crop modelling; abiotic stress effects on crop growth; and photosynthesis bioenergetics; physiology and modelling.

X. Zhang, Chinese Academy of Sciences (CAS), Shijiazhuang City, Hebei, China
Agro-meteorology; Crop-water relationship; Crop root growth and soil water use; Deficit irrigation scheduling; Cultivars characters related to drought resistance; Improving crop water use efficiency
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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.

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.

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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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A.J. Hall : Middle East and South America
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The e-mails of all co-authors must be submitted together with the manuscript.

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PREPARATION

NEW SUBMISSIONS
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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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Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.

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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 Dyke, G., 1997. How to avoid bad statistics. Field Crops Research 51, 165-187.

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

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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.

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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.

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