#### **C**AMBRIDGE



EXCELLENCE IN E-PUBLISHING

Innovative access to thousands of titles from one of the world's oldest, most prestigious publishers

Cambridge Books Online offers eBook content within a richly functional, fully searchable online environment. Access to Cambridge Books Online content is via institutional purchase, allowing unlimited concurrent users, meaning anyone who wants to may access the resource 24 hours a day

#### **Key Features**

- Dynamic content and feature set
- Flexible purchase plans and custom packages
- Powerful search & browse capabilities
- Comprehensive library support tools
- Extensive user functionality
- Enhanced discoverability tools

Free 30 day trials are available to libraries and institutions







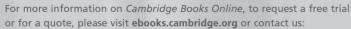












The Americas: online@cambridge.org

United Kingdom and Rest of World: academicsales@cambridge.org

ebooks.cambridge.org





# SEED SCIENCE RESEARCH

Published on behalf of the International Society of Seed Science

#### Seed Science Research

is available online at: http://journals.cambridge.org/ssr

#### To subscribe contact Customer Services

#### in Cambridge:

Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

#### in New York:

Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions newyork@cambridge.org

#### Editor

H. W. M. Hilhorst, Wageningen University, The Netherlands

Seed Science Research, the official journal of the International Society for Seed Science, is a leading international journal featuring high-quality original papers and review articles on the fundamental aspects of seed science, reviewed by internationally distinguished editors. The emphasis is on the physiology, biochemistry, molecular biology and ecology of seeds.

## Price information is available at: http://journals.cambridge.org/ssr

#### Free email alerts

Keep up-to-date with new material – sign up at http://journals.cambridge.org/alerts

For free online content visit: http://journals.cambridge.org/ssr



# **Advertising Opportunities**

To advertise in this journal and for details of pricing, availability and discount opportunities please contact:

# Advertising in UK, Europe and rest of world

The Advertising Sales Team
Cambridge University Press
The Edinburgh Building,
Shaftesbury Road,
Cambridge, UK, CB2 8RU
Tel: +44 (0)1223 325083

Email: ad\_sales@cambridge.org

# **Advertising in USA, Mexico and Canada**

Journals Advertising Coordinator 32 Avenue of the Americas, New York, NY 10013-2473, USA

Tel: +1 (212) 337 5053 Fax: +1 (212 337 5959) E-mail: journals advertising@cambridge.org







# Chinese Journal of Agricultural Biotechnology

# Chinese Journal of Agricultural Biotechnology

is available online at: http://journals.cambridge.org/cja

#### To subscribe contact Customer Services

#### in Cambridge:

Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

#### in New York:

Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions newyork@cambridge.org

#### Editor-in-Chief

R. Hull, John Innes Centre, UK

Chinese Journal of Agricultural Biotechnology brings cutting-edge Chinese research to an international audience. The journal takes the very best papers published in Chinese in the Journal of Agricultural Biotechnology, translates them and makes them available to the international scientific community.

# Price information is available at: http://journals.cambridge.org/cja

#### Free email alerts

Keep up-to-date with new material – sign up at http://journals.cambridge.org/alerts

For free online content visit: htp://journals.cambridge.org/cja





# Journal of Dairy Research

Published for the Institute of Food Research and the Hannah Research Institute

#### Journal of Dairy Research

is available online at: http://journals.cambridge.org/dar

#### To subscribe contact Customer Services

#### in Cambridge:

Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

#### in New York:

Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions newyork@cambridge.org

#### **Executive Editors**

D. G. Chamberlain, Hannah Research Park, UK E. C. Needs, Hannah Research Park, UK

Journal of Dairy Research publishes original scientific research on all aspects of mammary biology and dairy science including: animal husbandry; the physiology and biochemistry of lactation; milk production; biotechnology and food science; relevant studies in bacteriology, enzymology and immunology; and the development of methods relevant to these subjects.

## Price information is available at: http://journals.cambridge.org/dar

#### Free email alerts

Keep up-to-date with new material – sign up at http://journals.cambridge.org/alerts

For free online content visit: http://journals.cambridge.org/dar





# Journal of Tropical Ecology

#### Journal of Tropical Ecology

is available online at <a href="http://journals.cambridge.org/tro">http://journals.cambridge.org/tro</a>

#### To subscribe contact Customer Services

#### in Cambridge:

Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

#### in New York:

Phone +1(845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions newyork@cambridge.org

#### **Editor**

Ian Turner, Winchelsea, UK

Journal of Tropical Ecology publishes papers in the important and now established field of the ecology of tropical regions, either arising from original research (experimental or descriptive) or forming significant reviews. The journal provides a platform for the dissemination of information on all aspects of tropical communities and ecosystems.

# Price information is available at <a href="http://journals.cambridge.org/tro">http://journals.cambridge.org/tro</a>

#### Free email alerts

Keep up-to-date with new material – sign up at http://journals.cambridge.org/alerts

For free online content visit http://journals.cambridge.org/tro



#### COPYING

No contents may be reproduced by any means without the permission of Cambridge University Press. This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA (www.copyright.com). Organizations in the USA who are also registered with the CCC may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to CCC. This consent does not extend to multiple copying for promotional or commercial purposes. *ISI Tear Sheet Service*, 3501 Market Street, Philadelphia, PA 19106, USA, is authorized to supply single copies of separate articles for private use only. Organizations authorized by the Copyright Licensing Agency may also copy material subject to the usual conditions. *For all other use*, permission should be sought from Cambridge or the American Branch of Cambridge University Press.

#### INTERNET ACCESS

This journal is included in the Cambridge Journals Online service which can be found at http://www.journals.cambridge.org For further information on other Press titles access http://www.cambridge.org

This journal issue has been printed on FSC-certified paper and cover board. FSC is an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world's forests. Please see www.fsc.org for information.

#### CAMBRIDGE UNIVERSITY PRESS

The Edinburgh Building, Shaftesbury Road, Cambridge CB2 8RU, United Kingdom 32 Avenue of the Americas, New York, NY 10013–2473, USA 477 Williamstown Road, Port Melbourne, VIC 3207, Australia Ruiz de Alarcón 13, 28014 Madrid, Spain Dock House, The Waterfront, Cape Town 8001, South Africa

Printed in the United Kingdom by the University Press, Cambridge

## THE JOURNAL OF

# **AGRICULTURAL SCIENCE**

#### **CONTENTS**

CLIMATE	CHANGE	AND	AGRICUI	TURE	<b>PAPERS</b>

CENTRITE CHARGE THE TRANSPORT THE ERO	
J. EITZINGER, S. ORLANDINI, R. STEFANSKI and R. E. L. NAYLOR Climate change and agriculture: introductory editorial	499
T. N. Maraseni, G. Cockfield and J. Maroulis An assessment of greenhouse gas emissions: implications for the Australian cotton industry	501
T. Persson, A. Garcia Y Garcia, J. O. Paz, C. W. Fraisse and G. Hoogenboom Reduction in greenhouse gas emissions due to the use of bio-ethanol from wheat grain and straw produced in the south-eastern USA	511
A. Klik and J. Eitzinger Impact of climate change on soil erosion and the efficiency of soil conservation practices in Austria	529
P. Smith and J. E. Olesen Synergies between the mitigation of, and adaptation to, climate change in agriculture	543
R. H. Patil, M. Laegdsmand, J. E. Olesen and J. R. Porter Growth and yield response of winter wheat to soil warming and rainfall patterns	553
CROPS AND SOILS PAPERS	
S. Yan, W. Li, Y. Yin and Z. Wang Sink strength in relation to growth of superior and inferior grains within a wheat spike	567
K. J. Webb, E. F. Jensen, S. Heywood, S. M. Morris, P. E. Linton and J. E. Hooker Gene expression and nitrogen loss in senescing root systems of red clover ( <i>Trifolium pratense</i> )	579
J. C. Melgar, J. M. Dunlop and J. P. Syvertsen Growth and physiological responses of the citrus rootstock Swingle citrumelo seedlings to partial rootzone drying and deficit irrigation	593
ANIMAL PAPERS	
J. A. ROOKE, J. F. FLOCKHART and N. H. SPARKS REVIEW: The potential for increasing the concentrations of micro-nutrients relevant to human nutrition in	606
meat, milk and eggs	603
M. HIRATA, E. KUNIEDA and M. TOBISA Short-term ingestive behaviour of cattle grazing tropical stoloniferous grasses with contrasting growth forms	615
FORTHCOMING EVENTS	625

Journal of Agricutural Science now accepts submissions via Manuscript Central. Go to http://mc.manuscriptcentral.com/jagricsci



