JOURNALS

World's Poultry Science Journal

Published on behalf of The World's Poultry Science Association

Editor

Lucy Tucker, Waiti Hill Ltd, New Zealand

World's Poultry Science Journal provides authoritative reviews in poultry science and an international forum for the exchange and dissemination of information including research, education and industry organisation. Each issue includes poultry industry-related news, regional reports on global developments in poultry, reports from specialist scientific working groups, book reviews, association news and a calendar of forthcoming events.

Coverage includes breeding, nutrition, welfare, husbandry, production systems, processing, product development, physiology, egg and meat quality, industry structure, economics and education.

The journal is of interest to academics, researchers, students, extension workers and commercial poultry producers.

Submit your research online http://mc.manuscriptcentral.com/wpsj



World's Poultry Science Journal is available online at: http://journals.cambridge.org/wps

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

Free email alerts

Keep up-to-date with new content http://journals.cambridge.org/wps-alerts

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



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 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

1	\sim T	TA	1 /	۸П	CII	Α.	NΤ	CE	_ ^	N	TT	`	Λ,	\sim D	\mathbf{T}	тп	TI	TRE	D	Λ	DE	$\mathbf{D}_{\mathbf{c}}$	Э.

CENTITIE CITAL VOE TA VOE TORICO ET CHE I TA ERO	
H. W. Polley, J. A. Morgan and P. A. Fay Application of a conceptual framework to interpret variability in rangeland responses to atmospheric CO_2 enrichment	1
P. Calanca, D. Bolius, A. P. Weigel and M. A. Liniger Application of long-range weather forecasts to agricultural decision problems in Europe	15
T. T. Deressa, R. M. Hassan and C. Ringler Perception of and adaptation to climate change by farmers in the Nile basin of Ethiopia	23
K. Kristensen, K. Schelde and J. E. Olesen Winter wheat yield response to climate variability in Denmark	33
P. Peltonen-Sainio, L. Jauhiainen and K. Hakala Crop responses to temperature and precipitation according to long-term multi-location trials at high-latitude conditions	49
CROPS AND SOILS PAPERS	
M. P. W. Sonneveld and J. J. H. van den Akker Quantification of C and N stocks in grassland topsoils in a Dutch region dominated by dairy farming	63
J. Kleen, F. Taube and M. Gierus Agronomic performance and nutritive value of forage legumes in binary mixtures with perennial ryegrass under different defoliation systems	7 3
D. N. Vlachostergios, A. S. Lithourgidis and D. G. Roupakias Adaptability to organic farming of lentil (<i>Lens culinaris</i> Medik.) varieties developed from conventional breeding programmes	85
P. Bihani, B. Char and S. Bhargava Transgenic expression of sorghum <i>DREB2</i> in rice improves tolerance and yield under water limitation	95
ANIMAL PAPERS	
C. B. Wasike, A. K. Kahi and K. J. Peters A participatory approach to the evaluation of the efficiency of animal recording practices based on institutional analysis and development framework	103
N. Ghavi Hossein-Zadeh and M. Ardalan Bayesian estimates of genetic parameters for cystic ovarian disease, displaced abomasum and foot and leg diseases in Iranian Holsteins via Gibbs sampling	119
BOOK REVIEW	125
FORTHCOMING EVENTS	127

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



