







APRIL 2010 VOLUME 4 NUMBER 4

CONTENTS

Breeding and genetics Sellier, P., Maignel, L. and Bidanel, J. P. Genetic parameters for tissue and fatty acid composition of backfat, perirenal fat and <i>longissimus</i> muscle in Large White and Landrace pigs	497
Gutiérrez-Gil, B., Pérez, J., de la Fuente, L. F., Meana, A., Martínez-Valladares, M., San Primitivo, F., Rojo-Vázquez, F. A. and Arranz, J. J. Genetic parameters for resistance to trichostrongylid infection in dairy sheep	505
Wang, H. B., Wang, Q. G., Zhang, X. Y., Gu, X. F., Wang, N., Wu, S. B. and Li, H. Microarray analysis of genes differentially expressed in the liver of lean and fat chickens	513
Zhang, L. F., Jiang, X. L., Hua, X. C., Lu, Y. P. and Xu, N. Y. Molecular cloning, expression and polymorphism of the porcine apolipoprotein A5 gene in a Jinhua \times Pietrain F_2 reference population	523
Vankan, D. M., Waine, D. R. and Fortes, M. R. S. Real-time PCR genotyping and frequency of the myostatin F94L mutation in beef cattle breeds	530
Brandt, H., Werner, D. N., Baulain, U., Brade, W. and Weissmann, F. Genotype–environment interactions for growth and carcass traits in different pig breeds kept under conventional and organic production systems	535
Nutrition Ferris, C. P., Patterson, D. C., McCoy, M. A. and Kilpatrick, D. J. Effect of offering dairy cows diets differing in phosphorus concentration over four successive lactations: 1. Food intake, milk production, tissue changes and blood metabolites	545
<i>Ferris, C. P., McCoy, M. A., Patterson, D. C. and Kilpatrick, D. J.</i> Effect of offering dairy cows diets differing in phosphorus concentration over four successive lactations: 2. Health, fertility, bone phosphorus reserves and nutrient utilisation	560
<i>Frankič, T., Levart, A. and Salobir, J.</i> The effect of vitamin E and plant extract mixture composed of carvacrol, cinnamaldehyde and capsaicin on oxidative stress induced by high PUFA load in young pigs	572
McDonnell, P., Figat, S. and O'Doherty, J. V. The effect of dietary laminarin and fucoidan in the diet of the weanling piglet on performance, selected faecal microbial populations and volatile fatty acid concentrations	579
Kluess, J., Schoenhusen, U., Souffrant, W. B., Jones, P. H. and Miller, B. G. Impact of diet composition on ileal digestibility and small intestinal morphology in early-weaned pigs fitted with a T-cannula	586
Physiology and functional biology of systems Mandal, D. K., Kumar, M. and Tyagi, S. Effect of age on spermiogram of Holstein Friesian \times Sahiwal crossbred bulls	595
Behaviour, welfare and health D'Eath, R. B., Turner, S. P., Kurt, E., Evans, G., Thölking, L., Looft, H., Wimmers, K., Murani, E., Klont, R., Foury, A., Ison, S. H., Lawrence, A. B. and Mormède, P. Pigs' aggressive temperament affects pre-slaughter mixing aggression, stress and meat quality	604
Farming systems and environment Forsbäck, L., Lindmark-Månsson, H., Andrén, A. and Svennersten-Sjaunja, K. Evaluation of quality changes in udder quarter milk from cows with low-to-moderate somatic cell counts	617
Product quality, human health and well-being Ferlay, A., Martin, B., Lerch, S., Gobert, M., Pradel, P. and Chilliard, Y. Effects of supplementation of maize silage diets with extruded linseed, vitamin E and plant extracts rich in polyphenols, and morning v. evening milking on milk fatty acid profiles in Holstein and Montbéliarde cows	627
Moallem, U., Lehrer, H., Zachut, M., Livshitz, L. and Yacoby, S. Production performance and pattern of milk fat depression of high-yielding dairy cows supplemented with encapsulated conjugated linoleic acid	641
Strydom, P. E. and Smith, M. F. Effects of duration of zilpaterol hydrochloride supplementation on growth performance, carcass traits and meat quality of grain-fed cull cows	653

Cambridge Journals Online

For futher information about this journal please go to the journal web site at: journals.cambridge.org/anm



CAMBRIDGE UNIVERSITY PRESS

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



CAMBRIDGE

JOURNALS



The Journal of Agricultural Science is available online at: http://journals.cambridge.org/ags

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

The Journal of Agricultural Science

Senior Editors

Julian Wiseman, University of Nottingham, UK Animal papers Robert E. L. Naylor, University of Aberdeen, UK Crop & Soil papers

The Journal of Agricultural Science publishes papers concerned with the advance of agriculture and the use of land resources throughout the world. It publishes original scientific work related to strategic and applied studies in all aspects of agricultural science and exploited species, as well as reviews of scientific topics of current agricultural relevance.

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

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/ags

CAMBRIDGE

JOURNALS



World's Poultry Science Journal is available online at 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 journals_subscriptions@cambridge.org

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.

NEW - Digital Archive!

Access from the first issue in 1945 until 2003 online! For more information, email, quoting filler0709: In the USA, Canada and Mexico USJournals@cambridge.org Rest of the World jnlsales@cambridge.org

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/wps