ANIMAL

Management Board
N. Scollay (Chair); M. Mendl,
H. Emery, L. Sheehan (BSAS),
P. Chemreuil, M. Gaull, A. Rosay (EAAP),
N. Frigeola, D. Huguenin, S. Ingvar (INRAE)

Editor-in-Chief
J. Ouyang-Maitre (France)

Editorial Office
Email: questions@animaljournal.eu

N. Mouat (Editorial Assistant)
C. Regtien (Technical Editor)

Editorial Board
Breeders and Genetics.
Editors: R. Winter (Belgium), E. van Rijn (Netherlands),
B. Cadby (United Kingdom), D. L. Gilmour (Australia)

Nutrition – Nonruminants.
Editors: P. Stegen (New Zealand),
Deputy Section Editor: J. M. Jensen (Denmark)

Nutrition – Ruminants.
Editors: D. Torn Responses (Spain),
Deputy Section Editor: R. Pasto (Australia)

Nutrition – Ruminants.
Editors: T. F. Torrallardona (Spain),
D. Gonzalez-Pena (USA),
N. Ibanez-Escriche (Spain),
J. Zhou (China)

Welfare, Behaviour and Health
Management – Health Management
Section Editor: M. Cockx (Canada)
Deputy Section Editor: C. Engholm (Denmark)
Editors: N. Bareille (France),
D. Ducrot (France), M. Vanriet (Denmark)

Welfare, Behaviour and Health
Livestock Farming Systems – Livestock Systems
Section Editor: A. Dohnan (Estonia/UK),
Deputy Section Editor: M. Guity (Germany),
Editors: L.H. Dossok (Benin),
M. Franks (UK), J. Harms (Germany),
N. Minikula (Italy), S. Osterg (The Netherlands),
H. Poulsen (Denmark),
J. Th. Sorensen (Denmark)

Welfare, Behaviour and Health
Livestock Farming Systems – Precision Livestock Farming
Editors: J. Halacius (Israel),
Editors: S. Drouin (Israel),
A. Kassebeer (Germany),
J. Masschelein (Belgium),
C. Moerman-Davies (UK)

Quality of Animal Products.
Editors: R. Solomou (France),
Deputy Section Editor: B. Liang (France)
Editors: S. Baiyu (Italy), G. He (Belgium),
M. Campi (Spain), A. Descazul (Argentina),
K. Krusi (UK), T. Pirotti (Italy),
C. Prisk (UK)

Aims and Scope of the Journal
animal publishes the best, innovative and cutting-edge science that relates to animals (farmed or managed) used for animal production, and that is relevant to whole animal management practices. Papers can be accepted from all species if they are in, or contribute knowledge to, animal production systems. animal is essential reading for all animal scientists, stakeholders and policy makers interested in agricultural, biomedical, veterinary and environmental sciences with expected impacts on Animal Production and Productivity, Animal Welfare, Animal Health, Food Security, Environment, Climate Change, Product Quality, Human Health and Nutrition, and Sustainability of Animal Agriculture and Livestock Systems. Impacts should be of international relevance. animal aims to publish novel and original research papers, horizon-scanning reviews and critically informative opinion papers. Papers should consider animal responses, as well as lower or upper levels of understanding, with research spanning from genes to systems. Interactions between levels of approach are encouraged to account for the integrative nature of biological systems. The detailed scope of the journal can be found at www.animal-journal.eu/core.jsm

Submission of Manuscripts
All manuscripts must be submitted online via the website: http://www.editorialmanager.com/animal/
Please consult the full instructions for authors at: https://www.cambridge.org/core/journals/animal/information/submissions-contributors

Subscriptions
Animal (ISSN 1751-7311) is published monthly. The subscription price for institutions of Volume 14 (2020) which includes electronic access and delivery by air is $1,210, €1,483 (US $2366 in the USA, Canada and Mexico); the electronic only price for institutions is $990, €1,120 (US $1,867 in the USA, Canada and Mexico). Single parts are $116, €142 (US $227 in the USA, Canada and Mexico), plus postage.

Orders, which must be accompanied by payment, may be sent to a bookseller, subscription agent or direct to the publisher: Cambridge University Press, Journals Fulfillment Department, University Printing House, Shaftesbury Road, Cambridge CB2 8BS, UK; or in the USA, Canada and Mexico: Cambridge University Press, Journals Fulfillment Department, One Liberty Plaza, Floor 20, New York, NY 10005, USA. EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country’s rate. VAT registered subscribers should provide their VAT registration number. Japanese prices for institutions are available from Kinokuniya Company Ltd, P.O. Box 55, Chiba, Tokyu 156, Japan.

Copies of the journal for subscribers in the USA, Canada and Mexico are sent by air to New York to arrive with minimum delay. Periodicals postage paid at New York, NY and at additional mailing offices. Postmaster: send address changes in the USA, Canada and Mexico to: Animal Core, Cambridge University Press, Journals Fulfillment, One Liberty Plaza, Floor 20, New York, NY 10005.

Claims for missing issues should be made immediately on receipt of the subsequent issue.

Advertising
Advertising queries for all parts of the world except the USA, Canada and Mexico should be directed to sales@cambridge.org

Address enquiries in the USA, Mexico and Canada only to: USADallas@cambridge.org

Copying
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 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.

The carriers of this journal do not assume responsibility for the return of unsolicited manuscripts and draw attention to the instruction to contributors.

Copyright
Copyright © 2020 Cambridge University Press
Published in the UK by Cambridge University Press

Printed in the UK by Bell & Bain Ltd., Glasgow.

Find more information and terms and conditions at www.cambridge.org/core/terms.

www.cambridge.org/core
CONTENTS

August 2020  Volume 14  Issue s2

Farmers’ actions toward sustainability: a typology of dairy farms according to sustainability indicators

Applying a mechanistic fermentation and digestion model for dairy cows with emission and nutrient cycling inventory and accounting methodology

Live animal predictions of carcass components and marble score in beef cattle: model development and evaluation
McPhee, M. J., Walmsley, B. J., Dougherty, H. C., McKiernan, W. A. and Oddy, V. H.

Development of a dynamic energy-partitioning model for enteric methane emissions and milk production in goats using energy balance data feeding patterns
Fernández, C., Hernando, I., Moreno-Latorre, E. and Loor, J. J.

Precision livestock farming: real-time estimation of daily protein deposition in growing–finishing pigs showing deviations from their typical genetic growth potential characterization in the Japanese quail: a meta-analysis
Carvalho, L. C., Nogueira, H. S., Minussi, A. R. T., Lima, M. B., Munari, D. P., Peruzzi, N. J. and Silva, E. P.

Evaluation of remote monitoring units for estimating body weight and supplement intake of grazing cattle
Simanungkalit, G., Hegarty, R. S., Cowley, F. C. and McPhee, M. J.

Phosphorus and calcium requirements for bone mineralisation of growing pigs predicted by mechanistic modelling

Modelling the feed intake response of growing pigs to diets contaminated with mycotoxins
Nguyen-Ba, H., Taghipoor, M. and van Milgen, J.

Weight gain responses of hatchling pigs in meathensity plus choline diets
Högberg, M., Nylander, M. and van Milgen, J.

Modelling the feed intake responses of growing pigs to data contaminated with mycotoxins

Phosphorus and calcium requirements for bone mineralisation of growing pigs produced by mechanistic modelling

Genetic effects on energy and protein requirements in growing pigs
Smeersanghav, G., Hagino, R. S., Cleary, F. C. and McPhail, M. J.

Evaluation of female monitoring units for estimating body weight and supplement intake of growing cattle
System models for production and environmental impact

Genetic growth potential characterization in the Japanese quail: a meta-analysis

Rate of feed passage in Japanese quail

Stable isotopes to study sulfur amino acid utilisation in broilers

Model-based feed intake response of growing pigs to data contaminated with mycotoxins

Phosphorus and calcium requirements for bone mineralisation of growing pigs produced by mechanistic modelling

Genetic effects on energy and protein requirements in growing pigs
Smeersanghav, G., Hagino, R. S., Cleary, F. C. and McPhail, M. J.

Evaluation of female monitoring units for estimating body weight and supplement intake of growing cattle
System models for production and environmental impact

Genetic growth potential characterization in the Japanese quail: a meta-analysis

Rate of feed passage in Japanese quail

Stable isotopes to study sulfur amino acid utilisation in broilers

Static scope to study sulfur amino acid utilisation in broilers

Weight gain responses of hatchling pigs in meathensity plus choline diets
Högberg, M., Nylander, M. and van Milgen, J.

Modelling the feed intake responses of growing pigs to data contaminated with mycotoxins

Phosphorus and calcium requirements for bone mineralisation of growing pigs produced by mechanistic modelling

Genetic effects on energy and protein requirements in growing pigs
Smeersanghav, G., Hagino, R. S., Cleary, F. C. and McPhail, M. J.

Evaluation of female monitoring units for estimating body weight and supplement intake of growing cattle
System models for production and environmental impact

Genetic growth potential characterization in the Japanese quail: a meta-analysis

Rate of feed passage in Japanese quail

Stable isotopes to study sulfur amino acid utilisation in broilers

Static scope to study sulfur amino acid utilisation in broilers

Weight gain responses of hatchling pigs in meathensity plus choline diets
Högberg, M., Nylander, M. and van Milgen, J.

Modelling the feed intake responses of growing pigs to data contaminated with mycotoxins

Phosphorus and calcium requirements for bone mineralisation of growing pigs produced by mechanistic modelling

Genetic effects on energy and protein requirements in growing pigs
Smeersanghav, G., Hagino, R. S., Cleary, F. C. and McPhail, M. J.

Evaluation of female monitoring units for estimating body weight and supplement intake of growing cattle
System models for production and environmental impact

Genetic growth potential characterization in the Japanese quail: a meta-analysis

Rate of feed passage in Japanese quail

Stable isotopes to study sulfur amino acid utilisation in broilers

Static scope to study sulfur amino acid utilisation in broilers