

Publisher

Taylor & Francis
4 Park Square, Milton Park,
Abingdon,
Oxfordshire OX14 4RN, UK

Phone: +44 (0)207 017 6000
Fax: +44 (0)207 017 6336

Editor-in-Chief

Fiona Rhodes BSc, BVM&S, PhD

Assistant Editors

Sarah Olson, BSc, MSc, PhD
Nikki Kells, BSc, MSc

Guest Editor

Ngaio Beausoleil, BSc, PhD

Scientific Editors

Fiona Rhodes BSc, BVM&S, PhD
Sarah Olson, BSc, MSc, PhD

Editorial Office

VetLearn Foundation,
Mail Code 412, Massey University,
Palmerston North, New Zealand

Phone: +64 6 350 5228
Fax: +64 6 350 5659

Email: nzvj@vets.org.nz
(for all enquiries)

Editorial Board

MR Alley
BM Buddle
JP Chambers
ND Grace
CP Jewell
BR Jones
RA Laven
DM Leathwick
IG Mayhew
RL Sanson

Advertising

c/- The Editorial Office, as above

Scope

The *New Zealand Veterinary Journal* publishes original scientific articles, clinical communications, rapid communications, correspondence and reviews on all aspects of veterinary science, animal welfare and animal health aspects of animal science.

Instructions for Authors

See the NZVJ website
<http://www.vetjournal.org.nz/>

The whole of the literary matter of the *New Zealand Veterinary Journal* is copyright, New Zealand Veterinary Association Inc.

Disclaimer:

The *New Zealand Veterinary Journal* is published by the New Zealand Veterinary Association Incorporated (NZVA) in association with Taylor & Francis. The NZVA and Taylor & Francis make every effort to ensure the accuracy of all the information (the "Content") contained in its publications. However, the NZVA and Taylor & Francis and its agents and licensors make no representations or warranties whatsoever as to the accuracy, completeness or suitability for any purpose of the Content and disclaim all such representations and warranties whether express or implied to the maximum extent permitted by law. Any views expressed in this publication are the views of the authors and are not necessarily the views of the Editor, the NZVA or Taylor & Francis.

New Zealand Veterinary Journal

Volume 63 Number 1 *January 2015* ISSN 0048-0169

Guest Editorial

Feature series: animal welfare: current issues and recent developments

K Stafford 1

Review Articles

Enhancing animal welfare by creating opportunities for positive affective engagement
DJ Mellor 3

Positive animal welfare states and encouraging environment-focused and animal-to-animal
interactive behaviours
DJ Mellor 9

Positive animal welfare states and reference standards for welfare assessment
DJ Mellor 17

Scientific assessment of animal welfare
PH Hemsworth, DJ Mellor, GM Cronin and AJ Tilbrook 24

Different animal welfare orientations towards some key research areas of current relevance
to pastoral dairy farming in New Zealand
JR Webster, KE Schütz, MA Sutherland, M Stewart and DJ Mellor 31

Advantages and limitations of the Five Domains model for assessing welfare impacts
associated with vertebrate pest control
NJ Beausoleil and DJ Mellor 37

Introducing breathlessness as a significant animal welfare issue
NJ Beausoleil and DJ Mellor 44

Welfare implications of invasive piglet husbandry procedures, methods of alleviation and
alternatives: a review
MA Sutherland 52

A scientific comment on the welfare of domesticated ruminants slaughtered without stunning
CB Johnson, DJ Mellor, PH Hemsworth and AD Fisher 58

Cover: Free range Tamworth piglets.

Photograph courtesy of Jonathan Walker, Soggy Bottom Holding, Ngaruawahia.