Water and the Welfare of Farm Animals

Marina A.G. von Keyserlingk, Clive J.C. Phillips, Birte Nielsen

► To cite this version:

Marina A.G. von Keyserlingk, Clive J.C. Phillips, Birte Nielsen. Water and the Welfare of Farm Animals. Nutrition and the Welfare of Farm Animals, 16, Springer International Publishing, 247 p., 2016, Animal Welfare, 978-3-319-2354-9. 10.1007/978-3-319-27356-3_9 . hal-02801306

HAL Id: hal-02801306

<https://hal.inrae.fr/hal-02801306>

Submitted on 5 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Chapter 9

Water and the Welfare of Farm Animals

Marina A.G. von Keyserlingk, Clive J.C. Phillips, and Birte L. Nielsen

Abstract Provision of adequate water supplies is essential for the welfare of farm animals. Water forms the largest component of an animal's body and is an essential nutrient required for all biological functions, including temperature regulation, digestion, foetal development, and production. This essential nutrient can only be restricted for short periods of time. Water deprivation results in substantial welfare concerns, as it can hinder biological functioning, and has been associated with morbidity and, in cases of extreme deprivation, mortality. It is likely associated with a highly negative emotional state in farm animals (e.g. in humans referred to as thirst). Both quality and quantity of water may limit water intake, and management factors such as high stocking density at the water source can also negatively affect water intake. Providing examples from the primary production species, cattle, pigs, and poultry, we describe the importance of water quality and quantity in food animal production.

9.1 Introduction

The importance of water in the maintenance of life becomes clear when one compares it to that of solid food. It has long been known that animals deprived of water live for a much shorter period of time than their counterparts deprived of food (French 1956). Fitzsimmons (1979a, b) recognized that thirst, the subjective sensation resulting from a lack of water, is only surpassed for its impact on welfare by

M.A.G. von Keyserlingk (✉)

Animal Welfare Program, Faculty of Land and Food Systems, University of British Columbia,
Vancouver, BC V6T 1Z6, Canada
e-mail: nina@mail.ubc.ca

C.J.C. Phillips

School of Veterinary Science, The University of Queensland, Building # 8114, Gatton, QLD
4343, Australia

B.L. Nielsen

INRA, Neurobiologie de l'Olfaction, Université Paris-Saclay, Jouy-en-Josas 78350, France

© Springer International Publishing Switzerland 2016

C.J.C. Phillips (ed.), *Nutrition and the Welfare of Farm Animals*, Animal Welfare
16, DOI 10.1007/978-3-319-27356-3_9

Animal Welfare

Clive J.C. Phillips *Editor*

Nutrition and the Welfare of Farm Animals

Springer

Animal Welfare

Volume 16

Series Editor

Professor Clive Phillips
Foundation Chair of Animal Welfare
Centre for Animal Welfare and Ethics
School of Veterinary Science
University of Queensland
Gatton 4343, QLD
Australia

More information about this series at
<http://www.springer.com/series/5675>

Clive J.C. Phillips
Editor

Nutrition and the Welfare of Farm Animals

Springer

Editor

Clive J.C. Phillips
Centre for Animal Welfare and Ethics
University of Queensland
Gatton, Australia

ISSN 1572-7408

Animal Welfare

ISBN 978-3-319-27354-9

ISBN 978-3-319-27356-3 (eBook)

DOI 10.1007/978-3-319-27356-3

Library of Congress Control Number: 2016933444

© Springer International Publishing Switzerland 2016

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made.

Printed on acid-free paper

This Springer imprint is published by Springer Nature

The registered company is Springer International Publishing AG Switzerland