

# PROCEEDINGS BOOK

ONE WELFARE CIC PRESENTS

## IV ONE WELFARE WORLD CONFERENCE



**DON'T CHOOSE EXTINCTION  
CHOOSE ONE WELFARE**



**10-11TH OCTOBER 2023  
BURGOS, SPAIN**



## Created by

One Welfare CIC

## Editors

Dr. Rebeca García Pinillos  
George Mac Donald  
Amelia García Ara

## How to reference this publication

One Welfare World Conference, 2023.  
Burgos, Spain October 10–11.  
ISBN-13 9780853583530

## 2024, One Welfare CIC

We authorise total or partial reproduction of this proceedings under the condition that no alteration of its content takes place and that the source is cited. It is not permitted to use it for commercial purposes. If you modify, alter or mix this content you will not be able to publish it.

**ISBN-13 9780853583530**

ONE WELFARE CIC PRESENTS

**IV  
ONE WELFARE WORLD  
CONFERENCE**



**DON'T CHOOSE EXTINCTION  
CHOOSE ONE WELFARE**



**10-11TH OCTOBER 2023  
BURGOS, SPAIN**

[WWW.ONEWELFAREWORLD.ORG](http://WWW.ONEWELFAREWORLD.ORG)



## INDEX

<b>WHAT IS ONE WELFARE?</b> .....	<b>1</b>
<b>WELCOME TO THE IV ONE WELFARE WORLD (OWW) CONFERENCE</b> .....	<b>2</b>
<b>OWW CONFERENCE PROGRAMME</b> .....	<b>3</b>
<b>ORGANISING COMMITTEE</b> .....	<b>7</b>
<b>SCIENTIFIC COMMITTEE</b> .....	<b>7</b>
<b>SESSION CHAIRS</b> .....	<b>7</b>
<b>KEYNOTE SPEAKERS</b> .....	<b>8</b>
<b>SESSION ONE: WELFARE AND FASHION – ARE WE WHAT WE WEAR/ HAVE / EAT?</b>	
Sustainable fashion–trends, habits, and cultural traditions. ....	23
<b>ORAL SESSIONS</b>	
Application of the evaluation of animal welfare at the group level in the process of shearing wild vicuñas ( <i>Vicuña vicugna</i> ). ....	24
“Moving a problem from A to B”: A qualitative analysis of behavioural and health problems in imported rescue dogs. ....	25
Empirical treatments for colic in working equids in four regions of Colombia and their implication in animal welfare. ....	27
<b>ONE WELFARE PHOENIX UPDATE</b> .....	<b>28</b>
<b>OWSM UNIVERSITY CHALLENGE WINNING SESSIONS</b>	

The Interconnection between different profiles of abattoir workers and the human-animal relationship.....	30
A Qualitative study of the social and physical environment of working equids in Colombia.....	31
Comparative analysis of animal agricultural roles and animal-farmer relationships within two mountain communities based in Mexico and Ecuador.....	32
<b>SESSION TWO: ONE WELFARE AND HISTORY- GROWING THROUGH HISTORY .....</b>	<b>33</b>
The role of One Welfare in the Veterinary Profession.....	33
WOAH’s animal welfare activities: a strategic commitment.....	34
<b>ORAL SESSIONS</b>	
The evolution and application of the Manitoba One Welfare Model: a practical way forward for industry & government relationships.....	35
The "One Welfare" framework in Latin America: a survey-based exploration of its perception A journey of horse welfare using a text mining and topic analysis approach. ....	36
A journey of horse welfare literature using a text mining and topic analysis approach .....	38
<b>OWSM SESSIONS</b>	
Sustainability ideas at The School of Veterinary Medicine and Science and Sutton Bonington Campus-University of Nottingham.....	40
Operationalising One Welfare into Global policymaking to prevent zoonotic disease risk.....	41
<b>SESSION 3 - ONE WELFARE AND THE ENVIRONMENT - WORKING UNITED UNDER THE ONE WELFARE UMBRELLA.....</b>	<b>43</b>
UNEA 5.1 Resolution: Animal welfare-environment-sustainable development Nexus (UNEP) .....	44

## ORAL PRESENTATIONS

Development of a Welfare assessment tool for Small-scale pig farms under extensive system in Butemba Town Council Kyankwanzi District, Uganda. ....	44
The importance of animal behaviour studies in understanding and managing visitor interactions with Humboldt penguins ( <i>Spheniscus humboldti</i> ) in zoos. ....	45
Reducing the use of hot iron branding for cattle identification: An approach to the One Welfare concept. ....	46
Solutions for a more sustainable production of beef. ....	47

## OWSM SESSIONS

Animal Welfare and Health Issues in the Northwestern Indian Himalayan State of Himachal Pradesh–A ‘One Welfare’ Perspective. ....	48
Public perception of dairy farming in Canada through a One Welfare lens. ....	49
Contributions of working equids to community resilience in the dry corridor of Nicaragua. ....	51
Qualitative study of the social and physical environment of working equids and their owners in Colombia. ....	52
The “One Welfare” potential of dietary change. ....	53
Bioethical decision-making in hippo management within Colombia. Adaptive management based on behavioural studies of wild South American camelids to minimize the impacts of mining activities. ....	54
Adaptive management based on behavioural studies of wild South American camelids to minimize the impacts of mining activities. ....	55

<b>SESSION 4- ONE WELFARE AND PHOTOGRAPHY, IS THERE A COST TO AMAZING PHOTOGRAPHS? (IMPACTS ON ANIMAL WELFARE, HUMAN WELL BEING AND THE ENVIRONMENT) .....</b>	<b>56.</b>
--	------------

## OWSM SESSIONS

Reframing One Welfare: Ways of Knowing and seeing how Human and other-than-human animals fare with John Berger and Jean Mohr. ....	57
--	----

“Gozo for cows”bridges the gap for animal welfare for the next generation. ....	58
Selfish Selfies: The use of Captive wild animal as living props for souvenir photographs. ....	60

**POSTERS**

Research developments on animal assisted interventions under the “One Welfare” perspective: the dog-handler connection.....	62
Knowledge and perception of animal welfare at the camel market in Egypt. ....	64
Empirical treatments for colic in working equids in four regions of Colombia and its implication in animal welfare .....	66
Barriers to the promotion of positive welfare states for dairy cattle and associations with producer well-being. ....	68
Situation Analysis and Recommendations for the Biosecurity Status of Dairy Farms in Punjab, India: A Cross-Sectional Survey.....	70
Exploring the well-being of animals through the lens of the human work environment. ....	72
The impact of Covid-19 on working equids and their owners.....	74
A One Welfare approach to tick bite prevention: The impact of the environment onhuman and animal health. ....	76

**ORGANISED BY ONE WELFARE CIC,**

**SPONSORS**

**COLLABORATORS**

## WHAT IS ONE WELFARE?

**One Welfare** is a concept that describes the interconnection between animal welfare, human wellbeing and their physical and social environment

**The One Welfare Framework** encompasses five distinct sections that aim to bring together professionals of different disciplines for the benefit of animal welfare, human wellbeing, the environment, and overall, our society and the world we live in. You can read further about the One Welfare Framework here: <https://www.onewelfareworld.org/book.html>



## Welcome to the IV One Welfare World Conference

### Opening Remarks

It is my pleasure to introduce and invite you to take part on the IV One Welfare World Scientific Conference, which will be held in Burgos, with a hybrid format, on the 10th and 11th October 2023.

The concept of One Welfare describes the interrelationships between animal welfare, human wellbeing and the physical and social environment. The One Welfare Framework comprises five sections which are intended to capture the different multidimensional aspects of the concept. This conference centers around the relevance of One Welfare in our society, with a focus on global fashion around what we wear, eat and have, our history, and the environment and nature that surround us.

During the conference, global experts in different areas that relate to animal welfare, human wellbeing and the environment will present and discuss their latest experiences and research in the area of One Welfare.

The One Welfare World Conference key goal is to bring together a multidisciplinary group of professionals with an interest, working directly or indirectly, on areas related to animal welfare, human wellbeing and the environment; Professionals who are passionate about how these elements and their varied skills complement each other in their daily activities; Professionals who would like to share their knowledge and experiences as well as learn from the latest research and developments in the area.

Sharing and joining up to discuss scientific research and evidence is essential to showcase the benefits of the One Welfare approach in a tangible manner, serving to other researchers, industry and policy makers in their work. This helps to build up a robust evidence base around One Welfare and adoption of the concept globally to help make the world a better place.

On behalf of the scientific and organising committees, we welcome you to this conference and look forward to your participation and engagement.

*"You become responsible, forever, for what you have tamed."*  
Antoine de Saint-Exupéry, The Little Prince

**Dr. Rebeca García Pinillos,**  
Founder and Director One Welfare



A handwritten signature in black ink, appearing to be 'R. García Pinillos', with a horizontal line extending to the right.



# OWW VIRTUAL CONFERENCE – PROGRAMME

## Day 1 09<sup>th</sup> October 2023

18:00-19:00 Photocontest launch (by invite only)- Isabel Rodrigo, Mario Cea, Rebeca Garcia, Tomas Fisac Venue - Caja viva, Caja rural

19:30 -21:00 Welcome cocktail – all participants – San Juan Monastery

DAY 1 - 10th October 2023, Sessions 1-2, 09:00-16:00

### 09:00-09:30 (CET time) Conference Opening

09:00	Welcome	Mariano Mangas, Flamenco guitarist; Tomas Fisac, Burgos Veterinary College
09:15	Background to the conference and One Welfare	Rebeca García Pinillos (One Welfare CIC)
09:25	Keynote opening – Advancing towards One Welfare-	Maria Nelly Cajiao, Dean of Uniagraria University, Colombia

### 09:35-11:30 Session 1 – One Welfare and Fashion - Are we what we wear/have/eat?

Session Chair: Roly Owers, World Horse Welfare

09:45	Keynote: Sustainable fashion – trends, habits and cultural traditions <i>Sennait Ghebreab -Programme Leader Fashion Business courses - Istituto Marangoni London.</i> Aïda García Pinillos, Director, Studio 2Bold	EN
10:30- 11:30-Oral presentations		
10:30	Application of the evaluation of animal welfare at the group level in the process of shearing wild vicuñas (Vicugna vicugna) Beatriz Zapata, <i>Veterinary School, Universidad Santo Tomás, Viña del Mar, Chile</i>	EN
10:45	“Moving a problem from A to B”: A qualitative analysis of behavioral and health problems in imported rescue dogs <i>Lisa Wallis, University of Liverpool, UK</i>	EN
11:00	Empirical treatments for colic in working equids in four regions of Colombia and their implication in animal welfare. <i>Maria Alejandra Agudelo Cataño, Universidad CES, Medellín, Antioquia, Colombia</i>	EN

11:20 – 12:00 Coffee Break

12:00 -12:15 One Welfare Phoenix update - Mohamed Nader, One Welfare Phoenix

### 12:15- 13:05 OSWM University Challenge Winning Sessions

Session Chair: Amelia Garcia, University of Nottingham UK and Virginia Resconi, University of Zaragoza, Spain

12:30	The Interconnection between different profiles of abattoir workers and the human-animal relationship. <i>Adriana Pastrana, University of Zaragoza, Spain.</i>	ES
12:40	A Qualitative study of the social and physical environment of working equids in Colombia. <i>Jessica Burridge, University of Nottingham, UK</i>	EN
12:50	Comparative analysis of animal agricultural roles and animal-farmer relationships within two mountain communities based in Mexico and Ecuador. <i>Laura Estevez. University of Zaragoza, Spain</i>	ES
13:00	Announcements	EN

13:15-14:15 Lunch Break

14.15- 16:00 Session 2 – One Welfare and history - Growing through history

Session Chair: Stella Huertas, Animal welfare expert, Uruguay		ES
14:20	Keynote: The role of One Welfare in the veterinary profession Rafael Laguens President, World Veterinary Association	ES
14:50	Keynote: WOA's animal welfare activities: a strategic commitment Leopoldo Stuardo Animal Welfare, World Organisation for Animal Health	

15:30-Oral presentations

15:30	The evolution and application of the Manitoba One Welfare Model: a practical way forward for industry & government relationships. <i>Jenelle Hamblin, Manitoba Pork, Canada.</i>	EN
15:45	The "One Welfare" framework in Latin America: a survey-based exploration of its perception. <i>Debora Racciati. University of Buenos Aires, Argentina.</i>	EN
16:00	A journey of horse welfare literature using a text mining and topic analysis approach. <i>Beatrice Benedetti, University of Bologna, Italy.</i>	EN
16:15	World Organization for Animal Health (WOAH) Members' capacity to deal with animal welfare emergencies during natural disasters in Europe. <i>Gary Vroegindewey, Lincoln memorial University, USA</i>	EN

16:30-17:00 OWSM Sessions

16:30	Sustainability ideas at the School of Veterinary Medicine and Science and Sutton Bonington Campus, University of Nottingham. <i>William Brookes, University of Nottingham, UK</i>	EN
16:40	Operationalising One Welfare into global policymaking to prevent zoonotic disease risk. <i>Mark Jones, Born Free, UK</i>	EN
16:50	Social event announcements	

17:30 Museum of Evolution visit tour OR Burgos City History Tour

20:00-23:00 Conference gala dinner and post-dinner folkloric workshop – NH Palacio de la Merced

22:00 Awards ceremony of the I Photo Contest OW "Nature and us" at the Gala Dinner, embedded within the IV One Welfare World Conference.

## DAY 2 - 11th October 2023

### Session 3 One Welfare and the Environment – Working United under the One Welfare Umbrella

Session Chair: <i>Laura Boyle, Teagasc, Ireland</i>		EN
09:00	Keynote: <i>Abdelkader Bensada, United Nations Environment Programme (UNEP), Kenya</i>	EN
09:35-10:20 Oral presentations		
09:35	Development of a Welfare assessment tool for small-scale pig farms under extensive production system in Butemba Town Council Kyankwanzi District <i>Nelson Achong, Makerere University, Uganda</i>	EN
09:50	The importance of animal behavior studies in understanding and managing visitor interactions with Humboldt penguins ( <i>Spheniscus humboldti</i> ) in zoos <i>Ana Magalhães, Institute of Biomedical Sciences Abel Salazar, Matosinhos, Oporto, Portugal</i>	EN
10:05	Reducing the use of hot-iron branding for cattle identification: An approach to the One Welfare concept. <i>Mateus Paranhos, University of Jaboticabal, SP, Brasil</i>	EN
10:20	Solutions for a more sustainable production of beef. <i>Virginia Resconi, Universidad de Zaragoza, Spain</i>	ES
10:45-11:15 Coffee Break		
11:15-12:30 OWSM Sessions		
11:15	Animal Welfare and Health issues in the Northwestern Indian Himalayan State of Himachal Pradesh – A 'One Welfare' Perspective. <i>Arvind Sharma, Government of Himachal Pradesh, India</i>	
11:25	Public perception of dairy farming in Canada through a One Welfare lens. <i>Anne Marieke Smid, University of Alberta, Canada</i>	EN
11:35	Contributions of working equids to community resilience in the Dry Corridor of Nicaragua. <i>Fredred Valdivia, The Brooke Hospital for animals in latinamerica and the caribbean, Nicaragua.</i>	EN
11:45	Cow-with-Calf Dairying a key element of a holistic and profitable agro-ecological food system <i>David Finlay, The Ethical Dairy, UK CANCELLED</i>	ES
11:55	The "One Wellness" Potential of Dietary Change <i>Sarah H.Ison, Compasión en la agricultura mundial, Reino Unido</i>	
12:05	Bioethical decision-making in hippo management within Colombia <i>Isabel Cristina Guerrero Naudín, Universidad de Medellín, Colombia</i>	

10:15	Adaptive management based on behavioral studies of wild South American camelids to minimize the impacts of mining activities <i>Beatriz Zapata, Universidad de Santo Tomás, Chile</i>	
12:25	Questions & Announcements	

12:45 – 14:00 Lunch Break

**Session 4 One Welfare and Photography, Is there a cost to amazing photographs? – [impacts on animal welfare, human wellbeing and the environment]**

Session Chair: Isabel Rodrigo, Photographer, Ojos de Lago, Burgos, Spain		ES
14:00	Creative wildlife photography as a means of conservation Keynote speaker: Mario CEA, Photographer, Winner of Wildlife photographer of the Year	ES
14:30	How photography and other visual tools can be scientifically incorporated into behaviour change efforts. Keynote speaker: Cortney Price, Behavioural Science Lead FAO speaker	EN

15:30 – 16:00 OWSM presentations

15:30	Reframing One Welfare: Ways of Knowing and Seeing how Human and Other-Than-Human Animals Fare with John Berger and Jean Mohr.	Glen Cousquer, University of Edinburgh, UK
15:40	GOZO for Cows" Bridges the Gap for Animal Welfare for the Next Generation	Hiromi Nagata, Kagawa, Japan
15:50	Selfish selfies: The use of captive wild animals as living props for souvenir photographs	Mark Jones, Born Free ONG, UK

**16:00 Conference Closing**

<b>16:00</b>	Questions and OWSM sessions voting	Amelia Garcia, Nottingham University. Virginia Resconi, Zaragoza University.
16:20	OWSM Sessions Award Ceremony (Sponsored by MSD)	Marcial Marcos (MSD, US)
16:45	Final remarks and conference end	Dale Douma, Manitoba Government, Canada- Rebeca Garcia Pinillos, One Welfare CIC

## ORGANISING COMMITTEE

Dale Douma  
Tomás Fisac de Frías  
Amelia García Ara  
Rebeca García Pinillos  
Zeev Noga

## SCIENTIFIC COMMITTEE

Laura Boyle  
Maria Nelly Cijao Pachon  
Cathy Daly  
Dale Douma  
Marisa Erasmus  
Amelia García Ara  
Stella Maris Huertas Canen  
Xavier Manteca  
Gilly Mendes Ferreira  
Rodrigo J. Nova Chávez  
Debora Racciatti  
Bas Rodenburg  
Evelyn Segredo  
Patricia V Turner  
Antonio Velarde

## SESSION CHAIRS

Session 1 One Welfare and Fashion - Are we what we wear/have/eat?- Roly Owers  
One Welfare Phoenix Update-Mohamed Nader  
OWSM University Challenge Wining Sessions-Amelia Garcia, Virginia Resconi  
Session 2 One Welfare and History- Growing through History-Stella Huertas  
Session 3 One Welfare and the Environment- Working United under the One Welfare umbrella-Laura Boyle  
Session 4 One Welfare and Photography-Isabel Rodrigo

## KEYNOTE SPEAKERS

Welcome Tomas Fisac

Background to the conference and OneWelfare – Rebeca Garcia Pinillos

Keynote opening -Advancing towards One Welfare - Maria Nelly Cajiao

Sustainable fashion – trends, habits and cultural traditions – Sennait Ghebreab

The role of One Welfare in the veterinary profession – Rafael Laguens

WOAH's animal welfare activities: a strategic commitment – Leopoldo Stuardo

One Welfare and the Environment Abdelkader Bensada

Creative wildlife photography as a means of conservation – Mario Cea

How photography and other visual tools can be scientifically incorporated into behaviour change efforts – Cortney Price

## Biographies



### Abdelkader Bensada

Abdelkader manages landscape approaches and drylands activities as well as the implementation of the resolutions of United Nations Environment Assembly (UNEA) on Sustainable pastoralism, soil pollution, and animal welfare-environment- sustainable development nexus. His previous experience spans many countries in West Africa (Senegal, Mali, Guinea Conakry, The Gambia, Mauritania, Cabo Verde) and the Middle East. He is UNEP's focal point for the Collaborative Partnership for Forests (CPF), African Restoration Initiative (AFR100), International Land Coalition (ILC) and the Global Partnership for Forests Restoration (GPFLR). Abdelkader has more than 25 years' experience leading and advising on biodiversity conservation, protected areas management, forests conservations and rangeland management. Before joining UN Environment, he served with UNOPS, UNDP, World Bank and NGOs. He speaks Arabic, French, English, Italian and Portuguese.



### Aída García Pinillos

Aída G. Pinillos is an architect graduated at the University of Valladolid. She has international experience, developing projects in countries such as England, Switzerland, Portugal and Spain. Aida has co-founded and currently co-directs the spatial innovation studio 2BOLD in Madrid, Spain. Her practice focuses on solving spatial challenges for forward-thinking organizations.

During her career and at present she collaborates in numerous projects of social impact to help generate positive change at community level. These include: the revitalisation of a degraded neighbourhood in Lisbon through citizen participation, the development of a music rehearsal room for children at risk of exclusion in Madrid and the construction of a school in Ghana.

Aida has been a regular collaborator of One Welfare CIC since 2019. Her studio 2BOLD contributes with their design expertise into significant projects. Among others, they have developed a sustainable and portable stand for exhibitions and fairs; they also provide advice on one welfare designs and drew up digitally the One Welfies for the IV World Conference.

## Amelia García Ara



Amelia finished her degree in Veterinary Medicine by the University of Extremadura, Spain, in 2000, she moved shortly after that to the UK to work as Official Veterinarian undertaking inspection and enforcement duties in different abattoirs and cutting plants. She holds a Masters degree in Education and a master's in Epidemiology and Public health. In the area of public health, she has undertaken roles as food quality manager, food safety consultant and field veterinarian for disease control of bovine tuberculosis and brucellosis.

Amelia joined the University of Nottingham in 2014, where she currently works as Veterinary Public Health Sub-dean and Assistant professor in Veterinary Public Health (VPH) coordinating the VPH activities in the veterinary undergraduate curriculum. She is a resident of the European College of Veterinary Public Health (ECVPH), VetSustain academic group member, and a fellow of the Higher Education academy (FHEA). She is particularly interested in public perceptions around Animal Welfare and Food safety, and Sustainability.

## Antonio Velarde



Dr. Antonio Velarde holds a Veterinarian Sciences degree, PhD in Animal Production, and Master in Science and Welfare of Laboratory Animals. He is European Veterinary Specialist in Animal Welfare Science, Ethics and Law by the European College of Animal Welfare and Behaviour Medicine. Currently, he is head of the Animal Welfare Program in IRTA (Institute for Food and Agricultural Research and Technology-Spain) and member member of the Animal Health and Animal Welfare Panel of the European Food Safety Authority (EFSA). He is deputy coordinator of the European Reference Centre for the Welfare of Poultry and other small farmed animals.

Since 2017, Dr. Velarde is member of the EU Platform on Animal Welfare as independent expert. He has been member of the of the animal transport sub-group and coordinator of the "Unweaned animals" group. He participated also in the DG Sante funded projects on "Guides to Good and Best Practice" (<http://www.animaltransportguides.eu/>), "High quality control posts" and "Animal transport certification" (<http://www.controlpost.eu/controlpost/index.php/en/>).

Research topics include animal welfare on farm, transport and slaughter, risk assessment on animal welfare and sustainability in animal production. He has published 90 peer review papers in international journals and co-edited three books: 'On farm monitoring of pig welfare' (Wageningen Academic Publishers), 'Animal welfare at slaughter' (5m Publishing, Sheffield, UK) and 'Bienestar Animal. Una vision global en Iberoamerica' (Elsevier).





## **Bas Rodenburg**

Bas Rodenburg is Professor in Animal Welfare at the Faculty of Veterinary Medicine of Utrecht University in The Netherlands. He is also Special Professor in Animal Welfare at Wageningen University. He coordinates research and education in animal welfare. The research of Bas Rodenburg aims at improving the methodology for assessment of animal welfare. This also focuses on the use of sensors to monitor behaviour and welfare of individual animals housed in social groups. In his own work, Rodenburg advertises the One Welfare approach in the context of farm animal production to ensure that animal welfare receives appropriate attention in the development of sustainable animal production systems. Bas and involved in European projects such as Chicken Stress, PPILOW, aWISH and Best Practice Hens.

## **Dr Cathy Daly:**



Cathy Daly is an Archaeological and museums conservator, teacher and academic with a research focus on conservation management and climate change. She currently combines her position as Senior Lecturer & co-Programme Leader for MA Heritage Conservation at the School of History & Heritage, University of Lincoln, U.K. with a role as research consultant at Carrig Conservation International, Ireland.

From an initial focus on practical objects conservation Cathy developed an interest in heritage management and on the intersections between cultural heritage and climate change. She is the co-lead of the Climate Heritage Network's WG4 HiCLIP project, a member of the ICOMOS International Working Group on Climate Action and the ICOMOS nominee to WH Climate Action Policy review process.

## **Cortney Price**



Cortney Price is a sustainable development professional committed to enabling change through human-centred approaches. As Lead for Behavioural Science at the UN Food and Agriculture Organization (FAO), Cortney is currently coordinating the efforts of FAO's Office of Innovation to explore behavioural science as a transformational way to improve programme impact and unlock more efficient ways of working. Previously he worked with FAO's One Health team to create the Antimicrobial Resistance Behaviour Change Community of Practice – a multi-stakeholder platform for behavioural co-design across Africa. Cortney has also delivered participatory approaches to social behaviour change and risk communication across in Africa, Europe, the Middle East and Southeast Asia, as well as supported the creation and adoption of new tools for knowledge sharing and collaboration on climate change. Frequently leading awareness campaigns and audio-visual productions, Cortney leverages behavioural insights to promote the impact of strategic communication efforts.

Cortney holds an MSc in Behavioural Science from the London School of Economics and Political Science and a BA in Liberal Arts from Yale University. Prior to joining FAO in 2005, Cortney worked as a broadcast advertising producer in Italy and the United States.



## Dale Douma

Dr. Dale Douma received a B.Sc. (Ag.) from the University of Manitoba and completed his DVM at the Western College of Veterinary Medicine, prior to working as a mixed animal veterinarian in rural Manitoba. He returned to the University of Saskatchewan completing a Ph.D. in Large Animal Clinical Sciences. Since 2008, Dr. Douma has worked with Manitoba Agriculture serving in various roles such as the Veterinary Lead for Animal Welfare Programs, the Acting Chief Veterinary Officer, and currently as the Manager of Veterinary Public Health and Critical Issues. He also co-chairs the Manitoba One Health Steering Committee. In these positions, Dr. Douma has had the opportunity to participate with agricultural industry, animal welfare enforcement, and public health organizations while navigating complex cross-jurisdictional issues. In 2016, he spearheaded and co-chaired the inaugural International One Welfare Conference hosted in Winnipeg that focussed on the human impacts of animal health and welfare issues including those associated with disease outbreak response.

He led the COVID19 Emergency Operations Center for the Chief Veterinary Office of Manitoba in order to oversee and coordinate critical challenges related to the impact of the pandemic on the veterinary/Agrifood sector. More recently, his priorities have shifted towards preparedness and response activities related to the ongoing HPAI outbreaks in Canada including promoting psychological health measures and improved depopulation systems



## Debora S. Racciatti

Débora Racciatti graduated as a Veterinarian from the Faculty of Veterinary Sciences of the University of Buenos Aires (UBA), Argentina. She then obtained the degrees of Specialist in University Teaching and Specialist in Animal Welfare, awarded by the same university.

She is currently working on her doctoral thesis, investigating the relationship between animal welfare and stereotypical behaviors in wild felines under human care, within the framework of compassionate conservation. She is also in charge of the Animal Welfare Program of the National Service of Agrifood Health and Quality (SENASA) of Argentina and is the National Focal Point for Animal Welfare for the World Organization for Animal Health (OMSA). She also chairs the National Commission on Animal Welfare in Livestock (CoNBAEP) of Argentina and is a member of the Ad-hoc Group on Animal Welfare of the Permanent Veterinary Committee of Conosur (CVP) and of the National Commission on Animal Health and Welfare in Wildlife. In the academic field, she is Head of Practical Works in the Animal Welfare Department, Faculty of Veterinary Sciences (UBA). In addition, she is a guest lecturer in undergraduate and graduate activities in several universities and educational institutions in Argentina, Ecuador, Mexico and Uruguay. She defines herself as passionate about animal welfare and biodiversity conservation.



## **Evelyn Segredo**

Evelyn is a Family and Community Health Doctor currently working in the public health system in Uruguay, training on global health problems, and undergoing several social and community projects in suburbs where poverty, human and animal violence are frequent issues. She is also a veterinary student, enrolled in the University of the Republic of Uruguay, and completed her Master's degree on Animal Welfare, graduating from the Veterinary Faculty, Buenos Aires University (UBA), Argentina. Her main line of research is how dog population management and dog bites impact on Public Health issues.

She is currently a MBA student in Uruguay, and completed a Specialization in Public Health. In reference to public policies and project designing, her past work includes assessing the national government of Uruguay, through dog population management consultancies, and recently working as an independent consultant for World Animal Protection on rabies management in Latin - America. Evelyn is also a member of the One Health - One Welfare Latin - American (OHLA) network, collaborative, and research group, assessing on different human, animal and environmental issues in the region.

## **Gilly Mendes Ferreira**



With a background in Zoology, Gilly has worked for the Scottish SPCA since 2005 and is currently Director of Innovation & Strategic Relations, where she is responsible for creating innovative solutions such as the establishment of new services or influencing legislative change and forming partnerships that tackle key animal welfare issues which often drive animals into the Society's care. She has a strong interest in tackling abuse towards animals at an early stage and has established various programmes to address the issue of animal abuse in a positive way.

She sits on the Advisory Board for the One Welfare Phoenix Project, a global initiative that is focused on tackling the link between animal cruelty and human violence. She has also recently become Chair of the Board of Directors for Paws for Progress that offers services aimed at enhancing outcomes for children and young people, in community and educational settings, and services working within Scottish prisons to improve offender outcomes. She has also lead on a variety of research projects with topics ranging from recognition of non-accidental injury by the veterinary profession to the impact of playing music on the stress levels of kennelled dogs. In partnership with the University of Edinburgh, she has recently published a book 'Understanding animal abuse and how to intervene with children and young people' with the aim of sharing what has been learnt at the Scottish SPCA over the years, coupled with the research evidence base that exists and putting this into practice.

Through a variety of projects Gilly works closely with a wide range of stakeholders from community social care and government services through to human welfare based organisations and many animal welfare organisations including some at international level. Her ambition is to increase recognition of the interconnections between animal welfare and human welfare and find solutions that prevent animal abuse from occurring.



## Isabel Rodrigo

Burgos born nature photographer with a passion to capture landscapes and the small natural details of her surroundings. In continued development, Isabel has participated as key note speaker and has exhibited her photography work numerous times.



## Laura Boyle

Dr. Laura Boyle M.Agr.SC., Phd., is a senior research officer with Teagasc with over 25 years of research expertise in farm animal behaviour and welfare science. Laura is president of the health and welfare commission of the European Federation of Animal Science, Editor in chief of the animal behavior and welfare specialty section of Frontiers in Veterinary Science and Associate member of the European college of animal welfare and behavioural medicine.

She is adjunct professor with the School of Veterinary Medicine, University College, Dublin. As well as informing policy at national level she was an expert with the European Food Safety Authority (EFSA) from 2020 to 2022. Dr. Boyle published almost 130 peer-reviewed papers, has over 300 scientific abstracts in national and international conference proceedings and (co) supervised almost 30 Phd and Masters students.

Her main research interests lie in the link between animal health and animal welfare and in the contribution animal welfare can make to the sustainability of agriculture through its interconnectedness with humans and the environment. Laura also has education and advisory roles within the animal and grassland research and innovation centre at Moorepark, Co. Cork where she works.

## Leopoldo H. Stuardo Escobar



Leopoldo is a Chilean veterinarian, with broad experience working at national and international levels dealing with sanitary negotiations related to trade and in developing international standards and national regulations on animal welfare.

Leopoldo has developed these activities at the Agriculture and Livestock Service (SAG) from the Chilean Ministry of Agriculture, at the Chilean Mission to the European Union in Brussels and at the Headquarters of the World Organisation for Animal Health (WOAH) in Paris.

Currently, Leopoldo is working at the Standards Department of the OIE, in charge of the animal welfare activities related to the WOAH Global Animal Welfare Strategy.

## Marcial Marcos



Technical specialist for the western and central areas of MSD Animal Health Spain, swine business unit. Graduated in Veterinary Medicine from the University of León, he has extensive experience in different leading companies in the pig sector, in which he has performed functions as a veterinary specialist in pig health and production. He has just finished a Master Science Virology at the Complutense University of Madrid and has started Phd studies at the same centre.

## **Maria Nelly Cajiao Pachon**



Dr. María Nelly Cajiao is a specialist veterinarian in pathology with an MSc in Bioethics. She is the Director of the Animal Welfare and Ethology Specialization and Associate Professor at UNIAGRARIA University, Bogotá, Colombia, founder of the study group "One Welfare with Green Attitude" and member of the Animal Sciences research group, line One Welfare, associated with onewelfareworld - onewelfarelearning. She is a consultant, guest lecturer and international lecturer in Animal Welfare, bioethics and veterinary education.

She has co-authored and co-edited the book "Animal Welfare, a global vision in Latin America" (Elsevier), written international papers and book chapters on animal welfare and veterinary education in Latin America (publications of the Pan American Federation of Veterinary Sciences Schools) covering the Profile of Veterinarians and Inclusion of Animal Welfare within Veterinary Medicine Curricula in Latin America by 2030.

Dr. Cajiao has been a member of the Board and Counselor for Latin America of the World Veterinary Association. She has participated in the International Policy Commission, Animal Welfare and Veterinary Education Working Groups. Currently, she is the President of the Colombian Veterinary Medical Association, AMEVEC, and is part of the Board of the Pan American Association of Veterinary Sciences - PANVET. She is an active member of the Commission for International Accreditation and is an international academic peer of Veterinary Medicine and Zootechnics programs of the Pan American Council of Education in Veterinary Sciences COPEVET; also, she is Regional Associate of the American Association of Schools of Veterinary Medicine (AAVMC - AVMA).

## **Mario Cea**



With more than 90 international awards in nature competitions, his nature photography is aimed at experimenting with complex and creative techniques, always ensuring animals remain in complete freedom, without interference, in his photographs.



## **Marisa Erasmus**

Marisa Erasmus is an Associate Professor of Animal Behavior and Welfare in the Department of Animal Sciences at Purdue University. She received her BS and MS degrees from the University of Guelph in Canada and her PhD from Michigan State University. Before starting her career at Purdue University, Marisa worked on a commercial turkey farm and for the Ontario Ministry of Agriculture and Rural Affairs. Since then, Marisa's applied research has focused on developing animal-based measures of welfare for laying hens, turkeys and ducks and examining the effects of environmental and management factors on poultry welfare. In addition to her involvement with the commercial poultry industry, her outreach activities are aimed at educating the public about animal welfare.



## **Dr. Mohamed Nader**

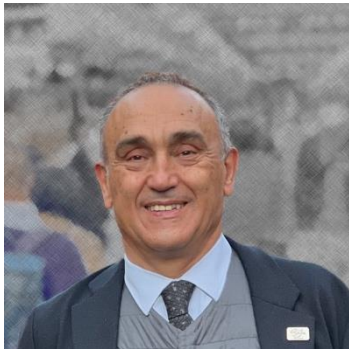
Dr. Nader is an Egyptian veterinary specialist in Animal Welfare and Wildlife conservation. He has a Master's Degree in wildlife conservation from Universidad Internacional de Andalucía, Spain, and a Bachelor of Veterinary Science Degree from Alexandria University, Egypt. He was an official veterinarian at Sharjah Municipality, UAE, from 2001-2008, after which, he joined as a Senior Veterinarian at Al Ain Municipality, UAE, from 2009 to the present. In addition, he has volunteered as a wildlife conservationist expert with NGOs to deliver workshops and training in the Middle East on animal welfare, CITES, wildlife conservation, and wildlife trade regulations. Nader was a keynote speaker in the UAE National Conference on Animal Welfare in Dubai in 2018. He is also a wildlife conservationist Ambassador in One Zoo Tree Project which aims to change the world by educating a generation on career preparation and conservation.

## Patricia V Turner



Patricia Turner is a laboratory animal veterinarian and pathologist who works as Corporate Vice-President, Global Animal Welfare for Charles River Laboratories. In this role, she is responsible for assessing welfare risks and developing global animal welfare policy and related training. Turner is also a University Professor Emerita at the University of Guelph, where she worked previously as a professor and program leader of laboratory animal science in the Department of Pathobiology. Her research group explores refinement of pain detection in research animals, refinement of behavior management programs for research animals, as well as impediments to human behavior change to enhance research animal care. Turner is currently ACLAM Vice- President, Immediate Past-President of the World Veterinary Association, and an author and editor of many academic publications on animal welfare and ethics, laboratory animal science, and small mammal pathology.

## Rafael Laguens, World Veterinary Association (WVA) President



Graduated from the University of Zaragoza (Spain), Dr Laguens started his veterinary career as a large animal practitioner in the province of Soria; after 11 years, he became Veterinary Public Health Officer of the Junta de Castilla y León, where he worked from 1990 to 2017. He has a Diploma in High Specialization in Food Technology from the "Instituto de Agroquímica y Tecnología de Alimentos (C.S.I.C.)". He was a member of the Advisory Board of the Spanish Food Safety Agency (AECOSAN) from 2003 to 2007. Dr. Laguens also worked in the design, advice and management of several Internet databases to register pets and horses. At the national and European level, he has been involved in different projects related to Veterinary Continuing Education, such as the Evaluation Committee of the Spanish Ministry of Health (MSPS), the Institute for Health Sciences of Castilla y León and the initiative Veterinary Continuous Education in Europe (VetCEE). He has been webmaster of a veterinary web portal and editor of the veterinary public health journal "Hygia" (2019-2020). Dr. Laguens has held different positions in the Spanish Veterinary Statutory Body (Organización Colegial Veterinaria Española) at provincial, regional, national and international level. He was Councillor for Europe of the World Veterinary Association (WVA) from 2011 to 2017. He served as President of the Federation of Veterinarians of Europe (FVE) from 2015 to 2019. He was President Elect of WVA from 2020 to 2022, chairing the Standing Committee for the Organization of the WVA Congresses. Currently, he is President of the "Colegio Oficial de Veterinarios de Soria", and works as a consultant on communication, education and technology. Dr Rafael Laguens took the office of World Veterinary Association President on March 30th, 2022.





## Dr. Rebeca García Pinillos

Rebeca García Pinillos graduated as a veterinarian from the University of Zaragoza, Spain and completed a PhD at the University of Reading, England. Rebeca is a graduate of the European College of Animal Welfare and Behavioral Medicine and a certified specialist by the Royal College of Veterinary Surgeons (RCVS) in animal welfare, ethics and law. She has worked in general medicine and as a government veterinarian since 2001. Rebeca has also volunteered with exotic animals and is an internationally recognized lecturer and professor in the field of animal welfare, educating and giving lectures worldwide. Rebeca is the past president of the Government Veterinary Association in England and founder of the non-profit social enterprise One Welfare Community Interest Company, which started as a voluntary project, launching a global consultation to define the concept of One Welfare and create the framework. One Welfare as a complement to One Health. Rebeca has created social media platforms and established a One Welfare concept web presence to help establish, educate and disseminate the One Welfare concept. Initiatives launched to date in support of these goals are the publication of the One Welfare Framework book and the One Welfare World, One Welfare Phoenix, One Welfare Silkworm and One Welfare Learning projects as well as the “One Welfare Science slaM (OWSM) sessions” launched as part of this conference.

## Dr. Rodrigo J. Nova Chávez



Dr. Rodrigo J. Nova Chávez is a veterinarian graduated from the University of Concepción, Chile. He completed a PhD in microbiology at the University of Nottingham, United Kingdom and holds postgraduate courses in veterinary public health (PGCert HPV) and in higher education (PGCert HPV) and in higher education (PGCHE). His work experience began in Chile in the area of food safety. In the UK he joined the academic team of the then newly founded School of Veterinary Science at the University of Nottingham. In this institution I develop the public health curriculum. He currently serves as *senior lecturer* in veterinary public health at the School of Biodiversity, One Health and Veterinary Medicine at the University of Glasgow. He is part of the experts of the European Veterinary Training Assessment System (ESEVT), taking part in the accreditation processes of veterinary education establishments for the European Association of Veterinary Education Establishments (EAEVE). In addition to this, since 2015, he collaborates as a consultant in the Animal Health Division of the Food and Agriculture Organization of the United Nations (FAO), specifically in the European Commission for the Control of Foot-and-Mouth Disease (EuFMD). In this role, he is responsible for coordinating and preparing the training of veterinary services in 39 countries under the *FAST Diseases strategy*.

## Roly Owers



Roly is a qualified veterinary surgeon and has been Chief Executive of the charity World Horse Welfare since 2008. He graduated from Cambridge University in 1992 and acquired his master's degree in nutrition from the London School of Hygiene and Tropical Medicine in 1997. His previous veterinary roles included the Blue Cross and Royal Army Veterinary Corps.

Roly plays an active role in much of World Horse Welfare's work supporting the horse-human partnership across four continents, including leading the charity's work with veterinary universities and networks, the UK government, the EU, OIE, the FAO and the United Nations. He also advises the International Equestrian Federation (FEI) and the British Horseracing Authority on horse Welfare.

Roly is currently Treasurer of the British Equine Veterinary Association (BEVA), Chairman of the UK Equine Disease Coalition, a Director of the British Horse Council, a Board member of the European Horse Network, Chair of the International Coalition for Animal Welfare and an Executive Board Member of World Federation for Animals.

## Sennait Ghebream



Sennait is a highly professional and motivated member of the Higher Education and UK fashion business community. She is currently Programme Leader on Fashion Business at the Istituto Marangoni School of Fashion London.

With 12 years of experience within the fashion industry in buying and wholesaling with Burberry, Matthew Williamson, Pringle and Joseph, she moved into teaching in 2015. As the Academic Course Leader of the BA Business, BA Buying and BA Communication courses, creating a culture of innovation is a key pillar on her business courses that she runs and manages. In June 2021, Sennait won the Italian Chamber of Commerce award "Talent Under 40". In September 2022, Sennait had her first TED X talk on SDG n.5 by UN (topic of gender equality and women empowerment).

Sennait firmly believes innovation comes from teamwork and encourages her team and students to share different ideas and perspectives, including innovation in coursework and applying it to real industry problems. She has collaborated with key incubators, such as Startupbootcamp, Limiteless Innovation and Techitalia, providing mentorship for the incubator programme of the Fall 2022 class of entrepreneurs.

In 2023 she published her new book on responsible business in fashion: *Responsible Business in fashion in practice*, by Routledge. She was nominated as leader of Change from the first edition of The Black carpet Awards, focused on Diversity and inclusion in Italy and awarded the Positive Leadership award in Jan 2023 by the Italian Embassy.



### **Stella Maris Huertas Canen**

Stella Maris Huertas Canén is a Doctor of Veterinary Medicine and Master in Animal Health both at the University of the República Oriental del Uruguay. From the beginning of her academic life, she specialized in the study of meat quality and later in animal welfare. She is the coordinator of the Animal Welfare Program and former Assistant Professor of Biostatistics within the Veterinary Faculty at the same University. Since 2009 Stella is the coordinator for Uruguay of the WOAHA Collaborating Center in Animal Welfare and Livestock Production Systems, a consortium made of institutions from Chile-Uruguay-Mexico. Stella has been a pioneer in issues related to the welfare of production animals in her country and in the region and has led important research projects that have contributed to creating knowledge, generating human resources, spreading good practices to all stakeholders, including farmers, farm staff, transporters, and personnel of the meat industry. She has authored multiple publications related to animal welfare, silvopastoral systems, and productivity.



### **Tomás Fisac de Frías**

Tomás graduated in Veterinary Medicine, from the Complutense University of Madrid, in 1979. After obtaining a Diplomate in Public Health, from the National School of Departmental Health of Valladolid in 1981, Tomás joined the Corps of Official Veterinarians, by national opposition, in 1985. He thereafter obtained a Degree on Food Technology from the University of Burgos in 1998.

He began his professional activity in 1980, practicing in different municipalities in the province of Burgos. In 1990 he joined the Agriculture and Livestock services of the Junta de Castilla y León and in 1992 the Public Health services, performing since 1995 the Technical Sanitary Directorate of the Incarsa slaughterhouse in Burgos, until 2012 when he was assigned as Head of the Public Health Unit in the Government Sub-delegation of Burgos, a position he currently occupies.

Tomás Fisac is currently president of the Official College of Veterinarians in Burgos, a position he has led since 2000. Tomás was president of the Council of Veterinary Colleges of Castilla y León between 2006 and 2016. He is also secretary of the Governing Council of Cajaviva-Caja Rural and president of the Fundación Caja Rural de Burgos.



### **Virginia Resconi**

Virginia Resconi is currently part of the Dean's Team at the Veterinary Faculty in the University of Zaragoza (Spain) and coordinates the University Master's Degree in Global Health. She is professor and researcher specializing in animal production within the Department of Animal Production and Food Science and member of the 'Quality and Technology of Meat' research group. Her international research experience includes collaborations with various organizations, such as Teagasc (Ireland), the University of Bristol (UK), the Danish Meat Research Institute (Denmark), and INTA (Argentina).



## **Xavier Manteca**

Xavier Manteca Vilanova received his BVSc and PhD from the Autonomous University of Barcelona and an MSc in Applied Animal Behaviour and Animal Welfare from the University of Edinburgh. Currently, he is professor of animal behaviour and animal welfare at the School of Veterinary Science in Barcelona. He has published extensively and is diplomate of the European College of Animal Welfare and Behavioural Medicine. One of Xavier's main areas of expertise is companion animal welfare and, particularly, welfare assessment.



## **Zeev Noga**

Zeev Noga has worked in the World Veterinary Association secretariat for more than 7 years. During this period, he has built up a broad experience in WVA matters. At the same time, he maintained good contacts with the WVA member organisations and established an extensive international veterinary network, including all major international organisations

## SESSION 1 – ONE WELFARE AND FASHION – ARE WE WHAT WE WEAR / HAVE / EAT?



**Chair:** Roly Roly

**Keynote talk:** Sustainable fashion- trends, habits and cultural traditions

Sennait Ghebream;  
Aída Garcia Pinillos  
Rebeca Garcia Pinillos

## ORAL SESSIONS

### Application of the evaluation of animal welfare at the group level in the process of shearing wild vicuñas (*Vicugna vicugna*)

Beatriz Zapata<sup>1</sup>, Gisela Marcoppido<sup>2</sup> 1. Veterinary School, Universidad Santo Tomás, Viña del Mar, Chile, [ozapatas@santotomas.cl](mailto:ozapatas@santotomas.cl) 2. INTA, Buenos Aires, Argentina, [marcoppido.gisela@inta.gob.ar](mailto:marcoppido.gisela@inta.gob.ar)

**Key highlights** 1. The shearing of vicuñas in the wild is a traditional management carried out by high Andean communities. 2. The shearing process is stressful, affecting the welfare of the vicuñas and the sustainability of management. 3. The promoting good shearing management promotes the well-being of vicuñas while maintaining a crucial economic activity for indigenous communities. 4. Several projects have measure stress response, however not in a practical way. 5. We analyzed the indicators already used and discuss whether there is a need to implement a welfare at group level approach of the measuring welfare of vicuñas.

#### Abstract:

The traditional management of vicuñas by Andean communities is carried out in the wild and includes their capture to obtain sheared live fibre. The shearing involves herding, handling, shearing and then release of wild vicuñas, thus is stressful and may threaten the sustainability of this management, affecting the survival of animals and subsequently the economical return. It should be noted that this management is crucial for the indigenous community since vicuña fibre is one of the finest of animal origin. The stress response to shearing has been monitored using a wide range of variables to adjust the process enhancing the welfare of vicuñas. Nevertheless, current welfare assessment has not been conducted to overall measure welfare at group level. This approach is necessary to implement welfare certification programs and for assessing welfare in a more

practical way. In this study, a review of publications and projects that evaluate stress in vicuñas was carried out identifying the indicators used and then classified according to the principles that assess (good feeding, good housing, good health, and appropriate behaviour) and whether they were valid, reliable, and feasible to measure. Twenty-five indicators were identified, one for good feeding, 12 for good health and 12 for appropriate behaviour. No indicator was identified to assess good housing. 92% were highly valid (+++) and 100% were reliable, however the main problem was with feasibility with 28% very low feasibility, 20% with moderate feasibility. This review shows the need to implement a protocol that allows the evaluation of welfare for vicuñas in a more practical and comprehensive way to guarantee the welfare during shearing.

# “Moving a problem from A to B”: A qualitative analysis of behavioural and health problems in imported rescue dogs (max. 20 words)

Lisa J Wallis<sup>1</sup>, Gina Pinchbeck<sup>1</sup>, Jenny Stavisky<sup>2</sup>, Louise Buckley<sup>3</sup>, & Carri Westgarth<sup>1</sup>

<sup>1</sup>Livestock and One Health, University of Liverpool, Liverpool, United Kingdom,

<sup>2</sup>VetPartners, York, United Kingdom,

<sup>3</sup>Clinical Surgery, University of Edinburgh, Edinburgh, United Kingdom,

Lisa Wallis [Lisa.wallis@liverpool.ac.uk](mailto:Lisa.wallis@liverpool.ac.uk) Carri Westgarth [carrw@liverpool.ac.uk](mailto:carrw@liverpool.ac.uk)

## Key highlights:

- Increasing numbers of overseas rescue dogs are being imported into the UK
- Reduced dog welfare was observed when dogs arrived with health problems, or developed behavioural issues
- Owner wellbeing was impacted when their expectations did not match reality
- Rescue organisations should provide accurate information and pre-and post-adoption support
- Greater education and monitoring of rescue and transport processes is needed to protect animal welfare



Dr Lisa Wallis



Prof Carri Westgarth

## Abstract:

The number of rescue dogs being imported into the UK has increased significantly in recent years. Since there is a lack of research into the implications for dog welfare and human wellbeing, the aim of this study was to investigate stakeholder and owner experience of behavioural and health problems seen in imported dogs. 30 interviews and 4 focus groups were conducted with overseas and UK rescue representatives, trainers, transporters, veterinary surgeons, animal health officers, government representatives and dog fosterers and owners in the UK. Online publicly available forum threads (n=18) were also selected using purposeful sampling. Descriptive thematic analysis of the transcripts and threads employing inductive coding enabled the creation of five main themes.

The first theme was unfit for transport. Non-compliant landings occurred when dogs were transported without the correct paperwork, heavily pregnant and as underage puppies. Dogs were also transported with pre-existing traumatic injury,

and exotic diseases. The second theme was welfare during transportation, which included injuries, infectious disease and parasite spread during transportation. The third theme was novelty, as some dogs encountered difficulties with new environments, objects or strangers. The fourth theme was autonomy, where some dogs found the lack of control over their new environment challenging, resulting in difficulties being confined, resource guarding, and predatory behaviour. The final theme was owner expectations, as these often did not align with reality after the dog arrived and led to costly surprises, including extensive veterinary care. Some dogs were felt to be not well-matched for the household and displayed challenging behaviours. Owners can struggle if they are not expecting this or supported in dealing with it. The rescue organisation was perceived to have moral responsibilities to provide accurate information and pre- and post-adoption support. Greater education about expectations is recommended, alongside improved monitoring of rescue organisations and transport processes to protect animal welfare.



Figure 1: Main health and behaviour themes found, and journey map indicating the minimum duration of travel for a dog being transported from Bucharest, Romania to North Wales. Transportation is often much longer due to the dropping off and picking up of dogs in multiple countries.



# Empirical treatments for colic in working equids in four regions of Colombia and its implication in animal welfare.

Aqudelo Cataño, Maria Alejandra (1); Henao Villegas, Santiago (2); Ramírez García, Francisco René (2); Jaramillo Gómez, Carolina (3); Pizarro Gómez, Sergio Andrés (3); Burridge, Jessica (4); Burford, John (4);

(1) UNIVERSIDAD CES, MEDELLIN, COLOMBIA (2) GRUPO INCA-CES DE UNIVERSIDAD CES (3) FUNDACIÓN ARRIEROS COLOMBIA (4) UNIVERSITY OF NOTTINGHAM

## Key highlights (max 15 words per bullet)

- Animal welfare
- Abdominal pain
- Equine health
- One Welfare

**Keywords / Relevant Terms** Animal welfare ,Abdominal pain , Equine health , One Welfare

## Abstract:



Working Equids have a key role in the daily life of families in Colombia, they are used for several activities that provide socioeconomic support to the communities, such as agriculture, mining, and tourism, among others. Equids are very prone to suffer from colic, with serious repercussions on their health and welfare but also with collateral effects on people's economic sustainability. Communities with higher poverty rates could be considered the most affected by colic in equids due to the limited access to professionals that provide adequate care. Given the above, it is important to know the empirical protocols implemented by people and their impact on animal welfare. This study focused on 4 communities: Santa Marta, Andes, Cocorná, and Apartadó, with structured interviews with 58 equids owners, all with an economic dependence



related to the bond established with equids (horses, mules, and donkeys). The administration of oral beer was the most frequently implemented alternative, alongside cooking oil and vinegar. Although there is some confidence in these products, the outcome is unfortunate in a high proportion. In addition to the above, the use of plants such as Matarratón (*Gliricidia sepium*), Achicoria (*Cichorium intybus*), Totumo (*Crescentia cujete*), Quebrabarrigo (*Trichanthera gigantea*), are also widely used, especially in the Arhuaco indigenous reserve of Kütünsama (Santa Marta). The lack of professional assistance forces the communities to look for empirical alternatives, however, the welfare of the equids is substantially affected

\*poster available in poster section.

# One Welfare Phoenix Update

Mohamed Nader, One Welfare Phoenix Project Board

One Welfare, is a framework to improve animal welfare and human wellbeing, it is an approach that describes interrelationships between animal welfare, human wellbeing and the physical and social environment.

**One Welfare serves** to highlight the interconnections between animal welfare, human wellbeing and the environment. It fosters trans disciplinary collaboration to improve human and animal welfare internationally.

## What is the link?

**Animal abuse, cruelty and neglect** are often considered isolated incidents wholly separated from other forms of family violence. Today, professionals involved with victims of family violence are not surprised when they learn that often these acts are Linked, and that various agencies are working with the same families. They no longer excuse animal cruelty as "boys will be boys" or "it was only a cat."

**Instead, they see animal abuse** as a sentinel indicator, "the tip of the iceberg" and often the first sign of other family and community violence

## So What are the effects of animal abuse?

**In addition to causing pain** and suffering to the animals, animal abuse can be a sentinel indicator and predictor — one of the earliest "red flag" warning signs of concurrent or future violent acts.

**Abusers and impressionable children** who witness or perpetrate abuse become desensitized to violence and the ability to empathize with victims

## One Welfare Phoenix Project

This project aims to support the sustainable development goals and global reduction of violence by supporting the production and dissemination of practical guides to professionals to help identify and report the link between animal and human abuse and neglect, including the relation to their environment.

Designed to bring together collective expertise across the world to develop global free access guidance for veterinary, medical and social services professionals as well as the public

Our group team in the Phoenix project consist of 4 groups, with each group responsible for a research thesis related to animal's species they covered. And their concept is the links between animal and human abuse and neglect

Each group is headed by 2 team leaders, and with them are subgroups whose job is to assist the group leaders in reviewing the evidence and working on preparing an initial summary of the content of the research paper content to be presented in Board of Directors meeting

The team leaders for each group which called phoenix board committee attend for another meeting with Co-Founder Dr. Rebecca every 3 months to discuss what has been accomplished in each group and develop a future vision for when the research paper will be completed.

In addition, all those research paper will feed into a broader project to globally reduce violence and disseminate guidelines to help professionals identify and report the link between animal, human, and environmental abuse and neglect, and aimed at anyone interested in this topic

## These 4 groups are:

- **Working animals** and the leaders for this group are Andrew Morrison and Gilly Mendes Ferreira
  - **Companionship group** and the leader for this group Evelyn Segredo , and we are looking for another leader with Evelyn , as Adele had resigned
  - **Farming group** and the leaders for this group are - Joe Bailey & Marisa Erasmus
  - **Free roaming**, and the leaders for this group are Dr Mohamed Nader and Dr Rodrigo Nova
- So We must work to improve animal welfare.

**No need to see, Animals are being surrendered** to entities, very young to survive or sick

**Animals** are not a commodity to be bought and sold.

**Animals** are sentient creatures who feel **emotions, pain and suffering**.

**Let us sympathize with you** greatly towards the issue of animal welfare, as animal welfare need more efforts in order to save the lives of all innocent souls.

**We are** a compassionate, empathetic and caring nation. I believe in transparency, respect and compassion for all souls. To protect the sustainability of our future generations.

I hope we continue to work to protect our planet and all Animals lives on it

**I hope you enjoyed this presentation, thank you.**

# OWSM University Challenge Winning Sessions





## Interconnection between the different profiles of abattoir workers and the human-animal relationship

Adriana P. Pastrana-Camacho <sup>1</sup>; Laura X. Estévez-Moreno <sup>2</sup>; Genaro C. Miranda-de la Lama <sup>3</sup>

<sup>1</sup> Department of Animal Production and Food Science, University of Zaragoza, Zaragoza, Spain, [apastrana647@hotmail.com](mailto:apastrana647@hotmail.com)

<sup>2</sup> Department of Animal Production and Food Science, University of Zaragoza, Zaragoza, Spain, [lestevez@unizar.es](mailto:lestevez@unizar.es)

<sup>3</sup> Department of Animal Production and Food Science, University of Zaragoza, Zaragoza, Spain, [genaro@unizar.es](mailto:genaro@unizar.es)

Adriana P. Pastrana-Camacho

### Key highlights:

- Worker-pig relationships in abattoirs can be influenced by the attitudes of the workers.
- Job satisfaction and continuous training can contribute to the human-animal relationship.
- Creating favorable working conditions in abattoirs can promote empathic behaviours towards animals.
- Sympathy, antipathy, cruelty and/or self confidence in workers may be associated with the human-animal relationship.

### Abstract

Abattoir workers have a relevant role within the meat industry, both for the efficiency of the operation and for the welfare implications of management. However, information on the characteristics of the human-animal relationship in the abattoir context is still limited. The main objective of this study is to identify profiles of pig abattoir workers based on their attitudes towards animals, and to describe them by integrating aspects such as satisfaction with the activity, socio-demographic aspects and pig handling practices during pre-slaughter processes. The study was done by means of a survey applied to 171 workers in twelve pig abattoirs in the center-west of Colombia. A factor analysis identified four dimensions that summarise workers' attitudes towards the human-animal relationship: sympathy, antipathy, cruelty and confidence in personal abilities. By grouping workers based on these attitudes through a hierarchical cluster analysis, four profiles were identified: i) "Insecure and inconsiderate", ii) "Secure and considerate", iii) "Insecure and considerate" and iv) "Secure and inconsiderate". The first included workers who relate to animals and their work in a mechanical

way; the second included those who are committed to animals and their work; the third included professionals who are emotionally close to animals; and the fourth included workers who are apathetic towards animals and work activity. Our results indicate that the human-animal relationship is influenced by workers' level of sympathy towards animals and by their level of job satisfaction. Our results also support the need to incorporate the "One Welfare" perspective into the operation of the pig meat industry, towards the creation of working environments and conditions in abattoirs that promote more empathic attitudes and behaviours to animals. This will help industry and academia to develop training strategies to promote or improve human-pig relationships in abattoirs by considering the differences between workers. Also, future research directed at improving the human-pig relationship should concentrate on strategies to modify or mitigate certain worker attitudes related to cruelty, negative empathy, job dissatisfaction and overconfidence in handling animals.



## Qualitative study of the social and physical environment of working equids and their owners in Colombia

Burridge, Jessica<sup>(1)\*</sup>, Burrell, Katie<sup>(1)</sup>, Henao Villegas, Santiago<sup>(2)</sup>, Jaramillo Gomez, Carolina<sup>(3)</sup>, Freeman, Sarah<sup>(1)</sup>, Maguire, Liam<sup>(4)</sup>, Wild, Isabella<sup>(4)</sup>, Burford, John<sup>(1)</sup>  
<sup>1</sup>School of Veterinary Medicine and Science, University of Nottingham, Sutton Bonington, Leicestershire, <sup>2</sup>CES Universidad, Medellin, <sup>3</sup>Fundación Arrieros Colombia, Medellin, <sup>4</sup>World Horse Welfare, Snetterton, Norfolk

### Key highlights:

- The welfare of working equids and the livelihoods of their owners are closely linked
  - The physical and social environment that individuals live in, influenced their day to day decisions
  - Key aspects of physical environment were topography, roads, utilities and laws and regulations
- Key aspects of social environment were regional and national administration, family dynamics and external perceptions

### Keywords / Relevant Terms

Working equid, One welfare, Social Environment, Physical Environment



Jessica Burridge

### Abstract

The relationship between working equids and their owners is being increasingly highlighted. There is little research looking at the physical and social environment of the owners.

This study aimed to explore the environment that working equids and their owners live in. A total of 24 focus groups were carried out, exploring perceptions of a range of stakeholders including working equid owners, women and community leaders. There were between one and twelve participants per focus group. Focus groups were carried out in Spanish by an in-country team and used a loosely structured narrative script. Participants were asked about their community, their involvement with working equids and any general or equid-related problems they face. Audio recordings were subsequently transcribed and translated into English. Thematic analysis was performed using NVivo using an inductive approach.

Two overarching themes were identified: 'physical environment' and 'social environment'. Both influenced an owner's decision making and behaviour, and

consequently the welfare of their equids. 'Physical environment' had four associated sub-themes: 'topography', 'roads', 'utilities' and 'laws and regulations'. Certain aspects, such as road quality and challenging topography increased the need for working equids. These also made access to human and veterinary medical care more challenging. 'Social environment' had three sub-themes: 'regional and national administration', 'family dynamics' and 'external perceptions'. The social environment determined the amount of support that working equid owners receive, the process of knowledge transfer amongst owners, and the opportunities available which all consequently impacted the welfare of working equids.

This study has highlighted the importance of understanding the physical and social environment that equid owners live in, to identify barriers to change and ensure support for working equids and their owners is relevant and applicable to the specific individuals and community.



# Comparative analysis of farm animal functions in peasant livelihoods and peasant-animal relationships in two high-mountain communities in Mexico and Ecuador

Laura X. Estevez-Moreno<sup>1</sup>, Xóchitl González Colín<sup>2</sup>, Genaro C. Miranda-de la Lama<sup>3</sup>

<sup>1</sup> Department of Agricultural Sciences and Natural Environment, University of Zaragoza, Zaragoza, Spain [lestevez@unizar.es](mailto:lestevez@unizar.es)

<sup>2</sup> Metropolitan Autonomous University-Unit Lerma, Mexico

<sup>3</sup> Department of Animal Production and Food Science, University of Zaragoza, Zaragoza, Spain

## Key highlights

- Farm animal production is multifunctional in peasant lifestyles.
- Farmers place a high value on farm animal welfare.
- Peasant' attachment to their animals is related to their role in their livelihoods, which is linked to, but not limited to, their role as production and work animals.

## Abstract

Small-scale farm animal husbandry has been one of the activities that historically has sustained peasant livelihoods in Latin America. In this context, this study aimed to describe the functions of farm animals in livelihoods and human-animal relations in two high mountain peasant communities in Mexico and Ecuador (ejido Ojo de Agua in Zinacantepec, Mexico, and Parroquia Honorato Vásquez in Ecuador). For this purpose, a survey was applied to 186 farmers over 18 years of age (71 men and 115 women), 95 in Mexico and 91 in Ecuador, belonging to 142 households. Animals kept in the households included chickens, turkeys, ducks, geese, pigs, sheep, goats, rabbits, guinea pigs, cattle, horses, donkeys, and mules, as well as dogs, cats, and birds. Animals have a multifunctional role in the households' livelihoods studied: self-consumption is the main function of poultry, rabbits, and guinea pigs; pigs are mainly used to cover emergencies; sheep are a form of

savings; the income associated with cows or bulls is used to cover frequent household expenses; and equines are working animals that support agricultural activities. The dog has a dual function as a companion, guardian and working animal. In both communities, there was a concern for the welfare of farm animals and their valuation as sentient beings, who should be respected and with whom farmers can develop a medium-term emotional relationship. This relationship can even be similar to that with a pet or a person. Farmers say they can love their animals, and this feeling combines motivations associated with their livelihood functions and their role as companion animals. Our results suggest that peasant-farm animal relationships may transcend the productive sphere to involve emotional aspects, often linked to the role each animal plays in household livelihoods in Latin American contexts.

## SESSION 2 – ONE WELFARE AND HISTORY – Growing through history



Chair: [Stella Huertas](#)

Keynote talk: The role of One Welfare in the veterinary profession

[Rafael Laguens](#)

Keynote talk: WOAHA's animal welfare activities: a strategic commitment

[Leopoldo Stuardo](#)

## Keynote: WOAHA's animal welfare activities: a strategic commitment

[Leopoldo Stuardo Escobar](#)

Scientific Coordinator- Animal Welfare, Standards Department, World Organization for Animal Health (WOAH), [l.stuardo@woah.org](mailto:l.stuardo@woah.org)

### Abstract:

Since its founding in 1924, the World Organisation for Animal Health (WOAH, founded as OIE) has been responsible for setting intergovernmental animal health standards. In 1995, when the World Trade Organisation (WTO) was established, the WOAHA animal health Standards were specifically recognised in the WTO Sanitary and Phytosanitary Agreement. In 2002, at the request of its Member Countries, the WOAHA broadened its mandate to include animal welfare standards on its Terrestrial and Aquatic Animal Health Codes, noting that animal health is a key component of animal welfare. The first WOAHA standards on animal welfare were published in 2005 and new Standards continue to be added. To date, fourteenth Chapters have been published in the Terrestrial Code and four in the Aquatic Code. WOAHA animal welfare chapters are regularly updated considering new developments in scientific knowledge, and the WOAHA World Assembly of Delegates adopts all WOAHA standards.

Animal welfare has been recognised as a complex and multifaceted issue and these aspects makes the implementation of the WOAHA animal welfare standards

challenging among their Members. Implementation of WOAHA animal welfare chapters at national level, are recognized as an integral and important part of establishing and improving the legal framework regarding animal welfare.

To support the implementation of WOAHA animal welfare Standards, WOAHA Members adopted the WOAHA Global Animal Welfare Strategy (GAWS) in 2017. This strategy was developed from lessons learned from actions taken at national and regional levels and aims to be a source of ongoing guidance for the WOAHA's activities, with the objective of achieving: "A world where the welfare of animals is respected, promoted and advanced, in ways that complement the pursuit of animal health, human well-being, socio-economic development and environmental sustainability". The strategy is built on four pillars, focusing on the development of international standards; the development of the capacity of veterinary services; the improvement of communication with governments and partners to raise awareness on animal welfare, and supporting Member Countries in the implementation of these standards.



## ORAL SESSIONS

### The evolution and application of the Manitoba One Welfare Model: a practical way forward for industry & government relationships

1Jenelle Hamblin & [2Dale Douma](mailto:dale.douma@gov.mb.ca) 1Manitoba Pork, Winnipeg, MB, Canada, [jhamblin@manitobapork.com](mailto:jhamblin@manitobapork.com) 2Manitoba Agriculture, Winnipeg, MB, Canada, [dale.douma@gov.mb.ca](mailto:dale.douma@gov.mb.ca)

#### Key highlights:

- Manitoba's model of collaboration truly encompasses the One Welfare approach that others could emulate.
- Traditional siloed approaches to industry / government activities lead to inefficiencies and unnecessary conflict
- This model improves human and animal health and welfare while mitigating potential negative impacts
- Transparent and collaborative partnerships on shared objectives can optimize outcomes and overcome complex challenges.
- A historical overview of events and the lessons learned are key for ongoing improvement

#### Abstract:

Historically, government authorities, livestock sector stakeholders and associations representing livestock commodities have struggled to respond cohesively to shared challenges. Manitoba recognized this inefficiency and has committed to an ongoing and progressive working relationship. Manitoba animal health and welfare professionals have demonstrated a successful model based on collaboration, transparency, and a willingness to continuously strive for improvement. This partnership has grown and evolved over many years to form a culture committed to working in a unified manner, with shared objectives and alignment on common goals while mutually respecting each other's mandates and priorities. The Manitoba model truly encompasses the One Welfare approach that others could emulate. Planning for and responding to large-scale disease events and natural disasters requires intensive human resources over long periods of time working through stressful, time sensitive issues. Manitoba Agriculture and Manitoba Pork staff are not unfamiliar with these conditions. Through the experiences of multiple emergent events over many years, each response has provided the opportunity to learn and advance the model while strengthening essential working relationships. An overview of the history of these events and the lessons learned are critical to understanding the model for broader adoption. One Welfare World Conference 2023 There have been many key successes to the Manitoba One Welfare approach.

The Manitoba swine industry led the creation of information sharing agreements between their members and government to optimize disease responses. The Manitoba animal welfare program is strengthened by the regular collaboration with the industry led on-farm quality assurance programs. The significant challenges faced throughout COVID-19 were managed cooperatively to support human health, animal health and welfare, while protecting the food supply chain. Beyond infectious disease, responses to flood, wildfire and market interruption have also benefitted from this unified approach. Producers and industry stakeholders see the value in which issues can be efficiently resolved with proper tools in place and all parties at the table. Governments have a critical regulatory role in animal health and welfare and their outcomes are improved with industry consultation and collaboration. The Manitoba swine sector understands the role of regulators and policy makers, partnering to inform and direct science based change. This strong relationship promotes the health and wellbeing of the animals in our care and the people working in industry and government: the farmers, veterinarians, stakeholders, policy makers and regulators. Together, meaningful progress can be made with shared objectives and a willingness to come together to celebrate shared successes and face inevitable challenges.

# The "One Welfare" framework in Latin America: a survey-based exploration of its perception

**Débora Silvia Racciatti<sup>1</sup>, Guillermo María Wiemeyer<sup>2,5</sup>, Carlos Blanco<sup>3</sup>, Luis Andrés González Gracia<sup>4</sup>, Andrea Szmec<sup>5</sup>, María Marcela Orozco<sup>2,5</sup>**

<sup>1</sup>Cátedra de Bienestar Animal y Etología, Facultad de Ciencias Veterinarias, Universidad de Buenos Aires (UBA), Buenos Aires, Argentina.

<sup>2</sup>Instituto de Ecología, Genética y Evolución de Buenos Aires (IEGEB-CONICET), Ciudad Autónoma de Buenos Aires, Argentina.

<sup>3</sup>Cátedra de Sociología Rural, Facultad de Ciencias Veterinarias, Universidad de Buenos Aires (UBA), Buenos Aires, Argentina.

<sup>4</sup>Independent researcher, Québec, Canada.

<sup>5</sup>Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Ciudad Autónoma de Buenos Aires, Argentina.

## Key highlights

- There is a growing interest in "One welfare" among Latin American professionals.
- Latin America needs more research and collaborative efforts to facilitate the implementation of "One welfare".
- It is necessary to strengthen undergraduate and graduate education and training on "One welfare".
- It is necessary to integrate the "One welfare" framework into policy implementation.

## Keywords / Relevant Terms:

animal welfare, education, Latin América, obstacles, One Welfare, perception

## Abstract

Numerous studies emphasize the role of the "One welfare" (OW) framework to help mitigate negative anthropogenic impacts on health, welfare, biodiversity and environmental sustainability issues involving humans, animals, and ecosystems. However, there is a lack of comprehensive understanding regarding the levels of training in integrative topics related to OW and the effectiveness of their implementation in actions and policies. Thus, the aim of this research was to gather information on the training of OW in Latin America, to explore perceptions and identify the main obstacles associated with its recognition. We conducted an online survey using QuestionPro® between March and April 2023. Participants included stakeholders from diverse disciplines associated with "One Health" and animal welfare. The survey questionnaire encompassed 42 questions, categorized into five sections. In this study, we specifically analyze the outcomes pertaining to sections (1) demographic information and (5) OW as an integrating framework. We used the large language model GPT-3 and the interface in R rgpt3 to code the open-field answers. Afterward, we manually checked the category assignments. We analyzed ethnographic qualitative variables through double-entry tables, Pearson  $\chi^2$ , and maximum likelihood G2 tests. To study variables of the open response type, we employed ethnographic qualitative analysis procedures, combining rational and

empirical mechanisms. We interpreted and coded variables acting as proxy indicators to analyze them qualitatively from multiple-choice responses. We processed all variables in a double-blind test. The analysis included 1054 surveys for section (1) and 739 for section (5), with respondents from 22 Latin American countries (Figure 1). A 35.6% of answers expressed familiarity with the OW concept and 78.8% rated their undergraduate training in the subject as low (scores 0-2 out of 5). Regarding postgraduate training in OW, 57.5% of the respondents rated it as low (scores 0-2 out of 5) (Figure 2). The study also identified several key obstacles to the application of the OW integrative framework, primarily associated with political factors (51.2%), followed by training factors (44.8%), economic factors (34.8%), communication factors (21.7%), sociocultural factors (19.6%), and other factors (4.3%). These findings highlight the need for additional research and collaborative efforts to facilitate the translation of the OW concept into tangible and meaningful outcomes, with a particular emphasis on the improvement of the curriculum of undergraduate and postgraduate programs, and the incorporation of this framework in policy implementation.

"I will answer the following section according to my knowledge about the actions/policies in..."

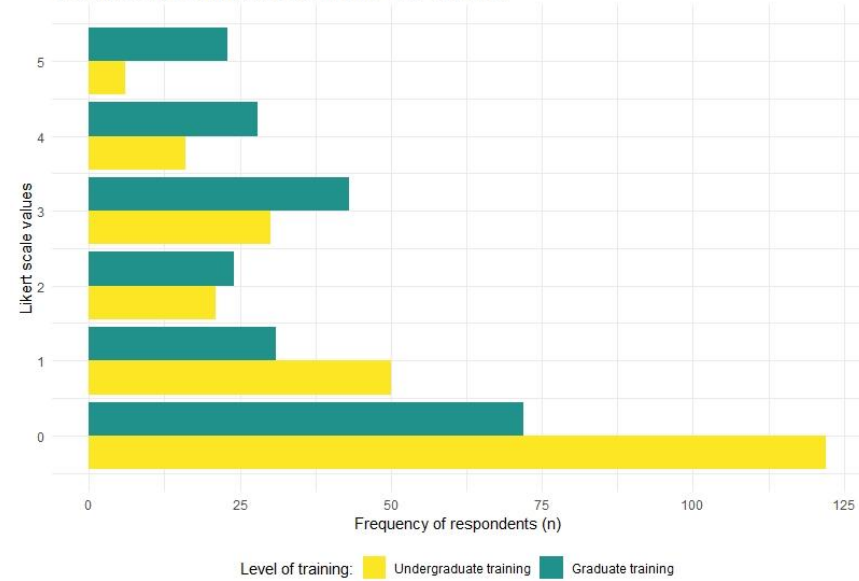
Number of respondents per country



Argentina (in gray) represents an outlier of the dataset, with 443 respondents, and is outside the scale of this plot.

Latin American countries for which responses were received

Rate, on a scale of 0 to 5, the training you received in your undergraduate or graduate studies on "One Welfare".



Respondents' perceptions on their graduate and postgraduate training in OW, rated on a 6-point Likert scale, with 0 being none and 5 being more than sufficient

# A journey of horse welfare literature using a text mining and topic analysis approach

Beatrice Benedetti<sup>1</sup>, Martina Felici<sup>1</sup>, Martina Zappaterra<sup>1</sup>, Barbara Padalino<sup>1</sup>

<sup>1</sup> Department of Agricultural and Food Sciences, University of Bologna, Viale Fanin 44, 40127, Bologna, Italy, [beatrice.benedetti7@unibo.it](mailto:beatrice.benedetti7@unibo.it); [martina.felici6@unibo.it](mailto:martina.felici6@unibo.it); [martina.zappaterra2@unibo.it](mailto:martina.zappaterra2@unibo.it); [barbara.padalino@unibo.it](mailto:barbara.padalino@unibo.it)

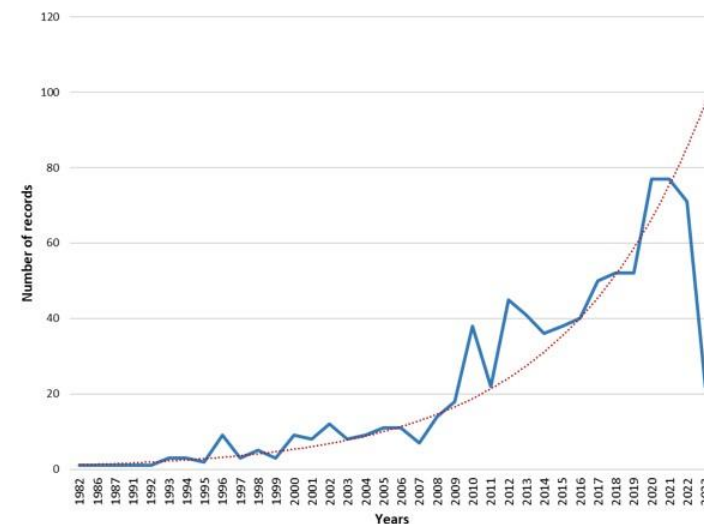
## Key highlights:

- A metaanalysis on horse welfare literature was performed using text mining and topic analysis
- Transport, behaviour, pain and stress were the most frequent words in the analysed records
- Nine research topics were identified showing knowledge of negative welfare assessment
- Albeit the growing welfare-related literature outputs, more studies using the one-welfare approach are needed

**Key words:** Animal health and welfare, human wellbeing, food security and sustainability

## Abstract:

Regulation regarding animal welfare protection is challenging and policymakers are demanding scientific-based evidence. Considering equids, the challenge is even greater, as their role within society varies from production to leisure animals. This review aimed, through techniques of text mining and topic analysis, to describe the evolution and geographical distribution of horse welfare literature, to identify the most studied research topics and to highlight the gaps in knowledge. The keywords "horse welfare", "equine welfare", "foal OR mare OR stallion welfare", "horse transport" and "horse slaughter" were inserted in Scopus bibliometric database. Time range (from 1980 to now) and language (English) were selected as predetermined criteria before starting the search. A total of 6584 documents were downloaded and screened considering only records dealing with Equidae welfare and behavioural science as eligible. Consequently, 801 records were retained and analysed. The results showed research on horse welfare is exponentially increasing, especially in Europe. "Transport", "behaviour", "pain" and "stress" were the most frequent words and the following research topics were identified: stress analysis, pain assessment, human-horse interactions, equitation science, breeding management, transport, working equids and health. The evaluation of stress and pain, horse social behaviour and the human-horse relationship have been addressed as welfare aspects in the last period. Contrariwise, even if the horse could be a meat-production animal, this theme was not raised by the analysis, as the literature on this subject is still limited. This analysis confirmed the growing interest in horse welfare but highlighted the need for more studies on positive welfare and the interactions among horses, humans and the environment.



Distribution of number of records included in the study per publication year (1980-2023). Legend: Results for year 2023 are related to the period from January to March. The dashed red line represents the exponential trend.



## OWSM sessions

### “Sustainability ideas at the School of Veterinary Medicine and Science and Sutton Bonington Campus , University of Nottingham”

Brookes, W., Hewitt, S., Garcia-Ara, A.

School of Veterinary Medicine and Science, University of Nottingham, Sutton Bonington campus, College Road, LE12 5RD

#### Key highlights:

- University undergraduate experience should include sustainability
- Staff and students at the School of Veterinary Medicine and Science at Nottingham support new and more initiatives on sustainability
- Reduction of plastic and energy waste, increasing biodiversity and improving education were suggested by staff, students and alumni.

#### Abstract:

With the growing global importance of sustainability, the veterinary profession has a responsibility to lead by example from day one.

From March 20th to April 3rd, 2023 a survey was distributed to staff and students at the Nottingham vet school to identify “quick wins”, “long-term ideas”, and “areas to improve” for sustainability within the vet school and on campus. A total of 106 respondents completed the survey and produced 396 ideas and 59 areas to improve. Responses were categorised using thematic analysis. The most frequently mentioned quick win themes included “Increase/improve recycling”, “Reduce plastic usage/waste”, and “Reduce electricity waste”. The most mentioned themes from long-term initiatives included “better commuting system”, “installation of solar panels”, and “encourage the use of e-cars”. Initiatives to increase biodiversity and using sustainable suppliers were responded as quick and long-term ideas for the vet school and campus. Specific long-term ideas for the Vet

School were to achieve green accreditation and offer extracurricular and postgraduate courses on sustainability.

The number of responses and range of ideas is aligned with the One Welfare (OW) approach and indicates a desire amongst staff and students to see more initiatives with a big focus on environmental aspects, followed by social sustainability. Whilst some ideas had already been implemented, highlighting the need to showcase them through improved communication, other ideas could inform new developments within the setting of veterinary education. More research into specific sectors and financial implications to implement new ideas using the OW framework would help to better direct investments. This could encourage the students to be responsible consumers and veterinarians who keep sustainability at the heart of the veterinary profession.

This project has received ethical approval by the University of Nottingham School of Veterinary Medicine and Science Committee for Animal Research and Ethics.

# Operationalising One Welfare into global policymaking to prevent zoonotic disease risk.

Co-authors: Adeline Lerambert and Mark Jones

<sup>1</sup>Adeline Lerambert, Born Free Foundation, Horsham, United Kingdom, [adeline@bornfree.org.uk](mailto:adeline@bornfree.org.uk)

<sup>2</sup> Mark Jones, Born Free Foundation, Horsham, United Kingdom, [markj@bornfree.org.uk](mailto:markj@bornfree.org.uk)

## Key highlights:

- Translating animal welfare science into policy is key to human, animal and environmental wellbeing.
- One Welfare offers an ethical framework for true interdisciplinary collaboration.
- Governments need to operationalise One Welfare into policy frameworks to reduce future pandemic risk.

## Abstract:

Wild animal welfare needs to be prioritised as a crosscutting theme in policymaking in order to help prevent the emergence and spread of diseases.

Crowding, stress and injury among wild animals provide the perfect environment for pathogens to spread and mutate, and their close proximity to people during capture, farming, transportation, butchering and trade creates many opportunities for human transmission.

The 2020 Dasgupta Review on the economics of biodiversity stated that “Curtailing the emergence of zoonotic diseases is complex and requires a holistic approach. Measures to prevent the unsustainable exploitation of wildlife are part of the solution. Improvements in the enforcement and regulation of wildlife conservation, animal welfare and public health regulations are also part of the solution.”

One Health is defined by the One Health High-Level Expert Panel (OHHLEP) as an integrated, unifying approach that aims to sustainably balance and optimise the

health of people, animals and ecosystems. It defines the profound interconnections that exist across the fields of human, veterinary, and environmental health.

Whilst its concepts are now well established and momentum is growing for the One Health approach worldwide, One Welfare principles offer broader strategic opportunities and cross-disciplinary solutions to address the common drivers of biodiversity loss and climate change, as well as reduce future zoonotic disease risk.

This presentation will outline how the incorporation of One Welfare into international policy frameworks would help secure an equitable, sustainable and humane future. It will pay particular attention to the ongoing development of a new global instrument under the World Health Organisation, aimed at strengthening collaborative efforts to prevent, prepare for and respond to future pandemics.

## SESSION 3 – ONE WELFARE AND THE ENVIRONMENT – Working united under the One Welfare Umbrella



**Session Chair:** [Laura Boyle](#)

**Keynote talk:-** UNEA 5/1  
Resolution: Animal welfare -  
environment – sustainable  
development Nexus  
[Abdelkader Bensada](#)



# UNEA 5/1 Resolution: Animal welfare - environment – sustainable development Nexus

[Abdelkader Bensada](#) Programme Management Officer, United Nations Environment Programme (UNEP)

## Abstract:

The fifth session of the United Nations Environment Assembly (UNEA-5) took place on the 2<sup>nd</sup> March 2022 at United Nations Environment Programme (UNEP) in Nairobi, Kenya. 193 UNEA members states adopted a new resolution in favor of Animal Welfare called: [Resolution on animal welfare-environment and sustainable](#)

[development nexus](#) (AWESDE Nexus). The AWESDE Nexus resolution seeks to identify linkages between animal welfare, environment, and sustainable development. An overview with a road map for the implementation of the resolution will be presented.

## ORAL SESSIONS



### **Development of a Welfare assessment tool for Small-scale pig farms under extensive system in Butemba Town Council Kyankwanzi District, Uganda**

Nelson Achong<sup>1\*</sup>, Dr Dickson Tayebwa<sup>1</sup>, Dr Samuel George Okech<sup>1</sup>. Department of Veterinary Pharmacy, Clinical and Comparative Medicine, School of Veterinary Medicine and Animal Resources, College of Veterinary Medicine, Animal Resources and Biosecurity, Makerere University Kampala, Uganda. Email: [pr.covab@mak.ac.ug](mailto:pr.covab@mak.ac.ug)

#### **Key highlights:**

- Poor welfare of pigs in extensive system results from lack of care and ignorance.
- Preservation of the welfare of pigs requires a collaborative stakeholder's approach.
- Yes, indicators in this tool empowers a farmer to easily identify welfare gaps beforehand.
- This study provides audience with the current welfare situation of extensive system in Uganda.
- Farmer sensitization on good management practices and capacity building projects are needed.

#### **Abstract:**

The number of pigs in Uganda has increased from 3.18 million (2008) to 4.5 million (2018) produced by 1.34 million households. Whereas extensive production system accounts for 90%, the welfare of animals in this production system has received little attention - in research - than the intensive system due to the assumption that animals in extensive system live a more natural life; hence, welfare issues are perceived as minor.

This study aimed at developing a welfare assessment tool for small-scale pig farms under extensive production system. Methods: A checklist containing indicators of the welfare aspects: nutrition, environment, health, behaviour and mental state was drafted. Some indicators were assessed on a 3-point scale: 0 (good welfare), 1 (moderate welfare), and 2 (poor welfare) while a 2-point scale was used for presence/absence or positive/negative. A survey was used to collect data on key health and management practices.

The indicators were given weights from which welfare variables were generated as weighted averages. Results: Model one (individual level): Lameness, body condition score, wounds on the body, Nose ringing, and behaviour negatively regressed welfare, R-squared-0.9073,  $P < 0.05$ . Model two (farm level): veterinarian-client relationship, mortality, environmental conditions, castration, medical records, water supply negatively regressed welfare,  $P < 0.05$ . The R-squared-0.7503,  $P < 0.05$ .

Conclusion and recommendations: A welfare assessment tool was developed and tested for predictability of welfare of small-scale pig farms practising extensive system in Butemba Town Council Kyankwanzi. The models indicated high R-squared. Farmer sensitization is required.

# The importance of animal behavior studies in understanding and managing visitor interactions with Humboldt penguins (*Spheniscus humboldti*) in zoos

Ana Nunes<sup>1</sup>; Ana Magalhães<sup>1,2,3</sup>

<sup>1</sup>Behavioural Sciences, Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Porto, Portugal [asofianunes13@gmail.com](mailto:asofianunes13@gmail.com) <sup>2</sup>Addiction Biology, i3S - Instituto de Investigação e Inovação em Saúde and Instituto de Biologia Molecular e Celular (IBMC), Universidade do Porto, Porto, Portugal; [anam@ibmc.up.pt](mailto:anam@ibmc.up.pt)

## Key highlights:

- Findings help zoo management and staff make informed decisions about managing visitor activities/interactions with the animals.
- Understanding visitor impacts helps zoos enhance animal welfare and create enriching, stress-free environments
- Implementing measures to control visitor interactions, ensuring that they positively contribute to animal well-being.
- A practical solution is providing valuable insights into factors that influence penguins' responses to visitors.
- Results can be applied to refine the management of zoo visitor-animal interactions, improving animal welfare.

## Keywords:

animal welfare, zoo, visitors, penguin behaviour

## Abstract

Animals in captivity are exposed to various elements daily, including zoo visitors, which can impact their welfare positively, negatively, or have no effect. Understanding this influence is crucial for ensuring animal welfare, necessitating animal behavior studies in zoos. This project focuses on studying the behavioral responses of Humboldt Penguins at a Portuguese Zoo to various visitor activities, such as proximity, excitement levels, and attempts to interact with the animals. To achieve this, an ethogram of the Humboldt Penguins and a visitor behavior scale were used (the levels of interest displayed by visitors when observing penguins, a scale of 0 - 2 from passively observing to actively attempting to gain the animals' attention). Observations of the penguin's behaviour were made in the presence and absence of visitors at the time of the feeding sessions. Animals' behaviour was

recorded by a video camera while the visitors' behaviour was registered on-site. Observational sessions with visitors were performed when more than 2 visitors were near the penguin enclosure. Results indicate that the nature and intensity of the visitor interactions, enclosure location, and animal age influence the penguin response to visitors. Comprehending the importance of these factors allows to work out which visitors' behaviours have a negative or positive impact on the penguins-visitor interactions. This type of information can be applied to refine the management of visitor-penguin interactions in zoos. Animal behavior studies in zoos plays a pivotal role in comprehending the impact of visitors on captive animals and ultimately contributes to their well-being.

# Reducing the use of hot iron branding for cattle identification: An approach to the One Welfare concept

Mateus Paranhos

Solutions for a more sustainable production of beef

Mateus J. R. Paranhos da Costa<sup>1,2</sup>; Fernanda Macitelli Benez<sup>3,4</sup>; Janaina da Silva Braga<sup>4</sup>

<sup>1</sup> UNESP, Faculdade de Ciências Agrárias e Veterinárias, Departamento de Zootecnia, 14884-900, Jaboticabal, SP, Brasil. [mateus.paranhos@unesp.br](mailto:mateus.paranhos@unesp.br)

<sup>2</sup> Conselho Nacional de Desenvolvimento Científico e Tecnológico, CNPq, Brasília, Brasil.

<sup>3</sup> UFMT, Curso de Medicina Veterinária, 78.550-728, Sinop, MT, Brasil

<sup>4</sup> BE.Animal Pesquisa e Desenvolvimento, Rondonópolis, MT, Brasil

**Keywords:** Identification, Handling, Animal welfare, Human wellbeing

## Abstract:

Hot-iron branding is the most widely used method for identifying cattle in Brazil, being used to indicate ownership, identify individuals, month and year of birth, and for sanitary control (as required by Brazilian legislation to identify heifer calves vaccinated against brucellosis), being common to find cattle herds in which each animal receive between 10 and 12 hot-iron brands. In addition to being a harmful procedure for cattle, it also increases the risk of labour accidents, and causes air pollution.

Aiming to reduce such deleterious situations, we set up a project to encourage technicians and ranchers to replace the hot-fire brand with other identification methods. Five beef cattle farms took part in the project (Fazenda Orvalho das Flores and Fazenda Cambury, Agropastoril Rio Corrente, São Clemente Agro and Fazenda das Palmeiras), replacing the hot-iron brands used for individual identification by the combined use of tattoos and visuals and electronic earrings, and earrings with different colours replaced the brands used to identify the month and year of birth.

Besides resulting in burns on the bovine skin, the practice of applying the hot-iron brands implied an increase in air temperature (+2.4 °C) and noise (+35.2 decibels)

in the environment where the procedure was performed, with negative implications for animal welfare, working conditions and, consequently, for cowhands' wellbeing. In addition, the smoke produced when applying the hot-iron brands (not measured) is potentially harmful to the wellbeing of the cowhands responsible for carrying out the work.

After adopting these strategies to replace hot-iron branding, one of the farms (Orvalho das Flores) applied only the hot-iron branding to heifer calves vaccinated against brucellosis, while the others also applied the farm brands. These changes resulted in a reduction of more than 70,000 hot-iron brands per year in the five farms.

Later, the ranchers and cowhands from all farms reported that reducing hot-iron branding improved their labour conditions and reduced the time spent in cattle identification by one-third.

Acknowledgments: To Allflex Livestock Intelligence Brasil, MSD Animal Health, JBS - Friboi for the financial support.

# Solutions for a more sustainable production of beef

## V.C. Resconi<sup>1</sup>, M. Henchion<sup>2</sup>, J.V. Romero<sup>1</sup>, and R. Lynch<sup>2</sup>

<sup>1</sup>Department of Animal Production and Food Science, University of Zaragoza, c/ Miguel Servet 177, Zaragoza 50013, Spain, resconi@unizar.es, jakromero@unizar.es  
<sup>2</sup>Department AgriFood Business and Spatial Analysis, Teagasc Food Research Centre, Ashtown, Dublin 15, Ireland. Maeve.henchion@teagasc.ie, richard.lynch@teagasc.ie

### Key highlights

- A European network has been established to respond to the grassroots needs of the bovine meat sector.
- A compilation of good practices and research innovations has been made available to cattle farmers.
- The beef sector is active and making great efforts to become more sustainable.

### Abstract:

Beef production has been criticised for its potential negative impacts on the environmental sustainability, and on animal welfare and human health and, while these accusations may be disproportionate, unjustified or at least debatable, there is room for improvement in the way beef is produced, depending on the context of each region.

A European network, called BovINE, within an EU H2020 project, brought together researchers, advisors and farmers and their associations to compile more than 340 good practices and research innovations to be shared with other farmers or interested parties in the bovine meat sector, with the aim of improving the sustainability of livestock farming. Strategies for optimising the technical and reproductive efficiency, measuring and improving animal welfare, reducing enteric emissions and improving water quality and biodiversity formed many of these

solutions. Novel strategies to communicate animal- and environment-friendly production methods to the public were also presented, as well as solutions to reduce farmers' workload and to improve farm profitability. In addition, ways to improve the quality of bovine meat in order to satisfy consumers demand, were highlighted.

All the material collected over the three years (2020-2022) of the project is available on the website: <https://hub.bovine-eu.net/>. The solutions cannot be applied in all situations, sometimes they do not improve all aspects of One Welfare simultaneously, or further research and refinement is needed before commercial application of some innovations, but they demonstrate that the sector is active and making great efforts to become more sustainable.



## OWSM Sessions

### **Animal Welfare and Health Issues in the Northwestern Indian Himalayan State of Himachal Pradesh – A 'One Welfare' Perspective**

Arvind Sharma Veterinary Officer, Department of Animal Husbandry, Government of Himachal Pradesh, Veterinary Polyclinic, Shahpur, District Kangra, Himachal Pradesh, India, [sunnyvet@gmail.com](mailto:sunnyvet@gmail.com)

#### **Key Highlights**

- Climate change and urbanization is affected animal health and welfare in the Northwestern Indian Himalayas
- Zoonotic, transboundary, and re-emerging diseases have become prevalent in livestock and humans.
- Human -animal conflicts are on the rise.
- A holistic approach under "one welfare" umbrella is the need.
- Public awareness, effective legislation and long-term research strategies should help in the paradigm shift from the current scenario

Livestock rearing is socio-culturally assimilated with the Himalayan people for sustainable development and economic stability. Climate change in this region frequently causes extreme weather events including flash floods, avalanches, landslides, and heat waves which have led to declining agricultural and livestock productivity. The rapid population growth has put pressure on productive lands, contributed to habitat degradation, threatened rich Himalayan biodiversity, and compounded waste management problems. Pasture degradation, parasitism, improper slaughter practice has a bearing on 'One Welfare'. Rapid destruction of open pastures for construction activities have affected pastoralism and the nutritional security of domesticated livestock leading to malnutrition and abandoning of cattle in the streets. Decrease in forest cover has increased interface between wildlife-domestic animals and humans leading to conflicts with a potential for spillover of diseases between the species. The booming tourism industry has compounded the street dog overpopulation causing dog bite mediated rabies in humans. Current livestock husbandry and management practices such as absence of proper disposal facilities for dead livestock, improper drainage of waste from livestock operations like dipping and drenching activities, absence of withholding

sale of livestock products following antibiotic/drug therapy have serious implications towards public health and sustainability of this vital sector of rural economy. Tuberculosis and scrub typhus prevalent in the human population have implications for the veterinary sector. Transboundary diseases like Lumpy Skin Disease are wreaking havoc in the livestock population. These critical issues underline the critical linkage between animal welfare, human well-being, biodiversity, and environment. The solution to these challenges lies in formulation of strategies dovetailed with human welfare under the 'one welfare' umbrella. Technological interventions are needed to counter the fodder scarcity and ensuring their subsequent adoption through a cooperative farming approach in the rural communities. Pasture management strategies are needed in the form of developing drought resistant, nutritive, and perennial grasses through agronomical research interventions. Community awareness campaigns, participation, and effective legislation for the effective implementation of biosecurity and public health management policies are some solutions to the issues through 'one welfare' approach.



#### **Public perception of dairy farming in Canada through a One Welfare lens**

# Public perception of dairy farming in Canada through a One Welfare lens

Anne-Marieke C. Smid<sup>1</sup>, Herman W. Barkema<sup>1</sup>, Steven Roche<sup>2</sup>, Wia Ruiter<sup>1</sup>, and Beth A. Ventura<sup>3</sup>.

<sup>1</sup>Faculty of Veterinary Medicine, University of Calgary; <sup>2</sup>ACER Consulting; <sup>3</sup>Department of Life Sciences, University of Lincoln



UNIVERSITY OF  
CALGARY

## Background and aim

For a socially sustainable dairy industry, it is important to better understand public perceptions of dairy farming practices. We aimed to understand the effects of dairy farm tours on public perception of dairy farming in Canada. We focused on visitor perceptions of: 1) dairy cow quality of life, and 2) the environmental responsibility of dairy farmers.



## Methods

- 30 dairy farmers gave farm tours across 3 open dairy farm day events in Alberta, Canada
- Survey given to visitors before and after the farm tour. Questions aimed to understand visitors before- and after-tour perception of dairy farming. Questions focused on cow quality of life and environmental responsibility of dairy farmers.
- Two weeks after the tour, another survey was sent out to assess if and how visitors' perceptions of dairy farming had changed after leaving the farm.
- All 3 surveys included Likert scale and open questions. Qualitative data were analyzed using template analysis with an inductive approach.

## Results (1)

- Total of 308 respondents; people came from rural (31%), suburban (21%) and urban areas (46%). 98% of respondents consumed dairy.
- 160 (52%) of these also completed a survey 2 weeks after the tour

## Comparing perception before and after tour:

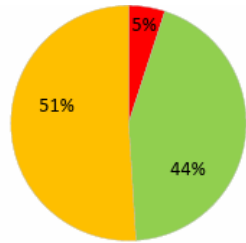
- Negative shift
- Stayed the same
- Positive shift

## Results (2)

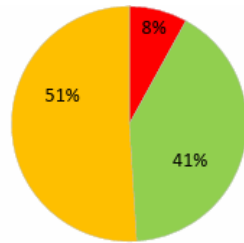
### Most after-tour (immediately post-tour and 2 weeks post-tour) qualitative concerns revolved around 'dairy cow quality of life'

"Still think the cows should have some pasture time."

"The mother cows do not seem to form relationships with their babies, as right after birth they are removed from one another to reduce the spread of disease. Are the mothers okay with this? Is there an alternative to this?"

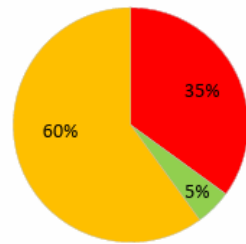


Environmental responsibility of dairy farmers

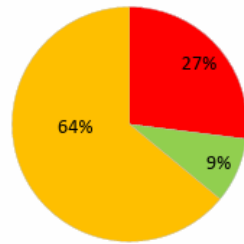


Quality of life of dairy cows

**Comparing perception after the tour versus 2 weeks later:**



Environmental responsibility of dairy farmers



Quality of life of dairy cows

"The cows do not have an option of grazing freely on green pastures and the calves do not get to stay with moms in the first few days/months of their lives, that's why their quality of life is not very good but moderately good. However, the animals are very well taken care of, located in clean stables and the farm operation is very professional."

"Articles in the Western Producer about calf health in isolation vs in groups, suggests that they are healthier when living and interacting among one another. The calves at this farm are on a concrete pad, in isolated shelters tied to a chain, where they are unable to mingle and socialize with one another."

**Some qualitative concerns revolved around the environmental responsibility of dairy farmers**

'My concerns are about whether it can be done without releasing significant greenhouse gases and still be profitable and competitive with other countries.'

'I believe most dairy farms have a long way to go if they plan on being net zero by 2050'

'The use of palm oil in some feeds is concerning.'

**Conclusions**

- 44% and 41% of visitors reported improved perceptions toward environmental responsibility and dairy cow quality of life, respectively, immediately after the farm tour. However, 2 weeks after the event, 35% and 27% of these individuals expressed more negative perceptions, respectively.
- Animal welfare concerns mainly focused on cow calf separation and lack of outdoor access; environmental concerns focused on the emission of greenhouse gases from dairy production, as well as the inclusion of palm oil in dairy cow feed.
- These results can be used by the dairy industry to inform recommended practices. Ensuring practices are in line with public values is important for the dairy industry to maintain its social license.

Contact Information:  
annemarieke.smid@ucalgary.ca





# Contributions of working equids to community resilience in the dry corridor of Nicaragua

Fredred Valdivia <sup>1</sup>The Brooke Hospital for Animals in Latin America & the Caribbean <sup>1</sup> Managua, The Brooke, Managua, Nicaragua.

## Key highlights:

- Working equids are key assets for the livelihoods of rural families, especially those exposed to climate change.
- The inclusion of working equids in preparedness and response plans to disaster can reinforce human wellbeing and environmental protection strategies.
- Development and aid agencies are called to incorporate working equids in their strategy to sustain human and environmental welfare initiatives.

## Abstract:

The effects of climate change have struck the livestock productivity and food security in the Dry Corridor of Nicaragua, an area highly vulnerable to extreme climate events such as long periods of drought, followed by heavy rains, disturbing the livelihoods of families who depend mostly on working equines for their season-based subsistence agriculture, and reliant on ecosystem services. Working equines often play a crucial role in the immediate and long-term aftermath of disaster as they also offer opportunities to build more robust livelihood assets, but the management of animal welfare is not habitually part of the local prevention, preparedness, and response plans, as few pieces of evidence on their contributions to disaster risk management stages are available. This research aims to highlight the

role of working equines to people's resilience in the event of sudden-onset, and low-onset disasters, as well as their welfare needs, acknowledging that equine welfare increases the ability of communities to restore, protect and upgrade their livelihood systems and environment. For this research, 201 equines' owners, and 31 member Municipal Disaster Prevention Committees were surveyed. The welfare of 249 working equines was assessed using animal-based indicators. Findings reveal that equines are important in pre-disaster, response and post-disaster stages, while transporting water, food, health services, humanitarian aid, rehabilitation of agriculture, and restoring the interconnectivity of communities, to achieve One Welfare.

# Qualitative study of the social and physical environment of working equids and their owners in Colombia

Burridge, Jessica<sup>(1)\*</sup>, Burrell, Katie<sup>(1)</sup>, Henao Villegas, Santiago<sup>(2)</sup>, Jaramillo Gomez, Carolina<sup>(3)</sup>, Freeman, Sarah<sup>(1)</sup>, Maguire, Liam<sup>(4)</sup>, Wild, Isabella<sup>(4)</sup>, Burford, John<sup>(1)</sup>  
<sup>1</sup>School of Veterinary Medicine and Science, University of Nottingham, Sutton Bonington, Leicestershire, <sup>2</sup>CES Universidad, Medellin, <sup>3</sup>Fundación Arrieros Colombia, Medellin, <sup>4</sup>World Horse Welfare, Snetterton, Norfolk

## Key highlights:

- The welfare of working equids and the livelihoods of their owners are closely linked
- The physical and social environment that individuals live in, influenced their day to day decisions
- Key aspects of physical environment were topography, roads, utilities and laws and regulations  
Key aspects of social environment were regional and national administration, family dynamics and external perceptions



## Abstract

The relationship between working equids and their owners is being increasingly highlighted. There is little research looking at the physical and social environment of the owners.

This study aimed to explore the environment that working equids and their owners live in. A total of 24 focus groups were carried out, exploring perceptions of a range of stakeholders including working equid owners, women and community leaders. There were between one and twelve participants per focus group. Focus groups were carried out in Spanish by an in-country team and used a loosely structured narrative script. Participants were asked about their community, their involvement with working equids and any general or equid-related problems they face. Audio recordings were subsequently transcribed and translated into English. Thematic analysis was performed using NVivo using an inductive approach.

Two overarching themes were identified: 'physical environment' and 'social environment'. Both influenced an owner's decision making and behaviour, and

consequently the welfare of their equids. 'Physical environment' had four associated sub-themes: 'topography', 'roads', 'utilities' and 'laws and regulations'. Certain aspects, such as road quality and challenging topography increased the need for working equids. These also made access to human and veterinary medical care more challenging. 'Social environment' had three sub-themes: 'regional and national administration', 'family dynamics' and 'external perceptions'. The social environment determined the amount of support that working equid owners receive, the process of knowledge transfer amongst owners, and the opportunities available which all consequently impacted the welfare of working equids. This study has highlighted the importance of understanding the physical and social environment that equid owners live in, to identify barriers to change and ensure support for working equids and their owners is relevant and applicable to the specific individuals and community.

# The One Welfare Potential of Dietary Change.

Sarah H. Ison<sup>1</sup>, Phil Brooke<sup>2</sup>, Catherine Jadav<sup>3</sup>, Peter Stevenson<sup>4</sup>, Debbie Tripley<sup>5</sup>

<sup>1</sup>Research & Education, Compassion in World Farming, Godalming, Surrey, United Kingdom, [Sarah.Ison@ciwf.org](mailto:Sarah.Ison@ciwf.org)

<sup>2</sup>Research & Education, Compassion in World Farming, Godalming, Surrey, United Kingdom, [Phil@ciwf.org](mailto:Phil@ciwf.org)

<sup>3</sup>Research & Education, Compassion in World Farming, Godalming, Surrey, United Kingdom, [Catherine.Jadav@ciwf.org](mailto:Catherine.Jadav@ciwf.org)

<sup>4</sup>Campaigns & Advocacy, Compassion in World Farming, Godalming, Surrey, United Kingdom, [Peter.Stevenson@ciwf.org](mailto:Peter.Stevenson@ciwf.org)

<sup>5</sup>Campaigns & Advocacy, Compassion in World Farming, Godalming, Surrey, United Kingdom, [Debbie.Tripley@ciwf.org](mailto:Debbie.Tripley@ciwf.org)

## Key highlights

- As well as mitigating GHGs, meat and dairy reduction has potential animal welfare benefits.
- The EAT-Lancet commission developed targets for a healthy 'reference diet' for sustainable food systems.
- 2018 consumption of animal-sourced foods for 176 countries was compared with the reference diet.
- This confirms the need for high-income countries to substantially reduce consumption of animal-sourced foods.
- Further examples are needed for a triple win – human, environmental and animal health and welfare.

## Abstract:

The Intergovernmental Panel on Climate Change recently stated, with high agreement, that reduction of meat and dairy is effective at mitigating greenhouse gas emissions. The authors highlighted potential broader environment, health, and animal welfare co-benefits. In 2019, the EAT-Lancet Commission published scientific targets for healthy diets from sustainable food systems (the 'reference diet'). The targets, based on six key earth system processes, aim to enable the achievement of the Paris Climate Agreement and Sustainable Development Goals.

This study calculated consumption of animal-sourced foods by 176 countries included in the FAO's food balance sheets for 2018 (averaged for 2017-2019 in g/capita/day). Calories available from animal sourced foods were also calculated as a percentage of total calories available. Amounts consumed (grams) and percentage of calories were compared with the reference diet for meat, dairy, fish/seafood, and eggs.

Across all categories (meat, dairy, fish/seafood, eggs), the top 25 consuming countries were 24 high- and one upper-middle income countries. These included 15 of the 27 EU countries (Denmark, Estonia, Finland, France, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Spain and Sweden), five other European countries (Iceland, Norway, Russia, Switzerland and UK), and Australia, Canada, Israel, New Zealand and USA.

This study confirms the increase in consumption of animal-sourced foods with income status, and the vast income divide in consumption. The data highlights the need for high income countries to lead on reduction to support a food system transformation. However, there is a need for more examples that demonstrate a triple win is possible – for human, environmental and animal health and welfare.



# Bioethical decision-making in hippo management within Colombia

Isabel Cristina Guerrero Naudín<sup>1</sup>, Santiago Henao Villegas<sup>2</sup>

<sup>1</sup> Estudiante de maestría en bioética universidad CES, Medellín, Colombia. [Iguerrero@ces.edu.co](mailto:Iguerrero@ces.edu.co)

<sup>2</sup> Investigador grupo Inca-CES, profesor de la facultad de medicina veterinaria y zootecnia de la universidad CES, Medellín, Colombia. [Shenao@ces.edu.co](mailto:Shenao@ces.edu.co)

## Key Highlights

- The invasion of species will continue to occur, it is the consequence of human behaviour.
- Understanding the reasons why the species has become established and the reasons for failure in eradication attempts is key.
- It is important to understand the use of the bioethical matrix to guide the solution when an invasive species has established itself.
- Clear scientific information should always be the basis for decision making.

## Abstract

The presence of hippos in the Colombian territory has been a difficult situation to manage for various reasons. On the one hand, the lack of national experience in the issue makes it impossible to find technical clarity in its control. On the other hand, any decision taken will be fraught with ethical tensions. On this point, it is important to carry out a bioethical analysis using the classic principles framework (autonomy, nonmaleficence, beneficence, and justice), and of the different actors

related to the subject. To this end, the text proposes a review that starts with the construction of an ethical matrix. It is proposed that documentary research will form the basis for guidelines for bioethical decision-making as an ethical, viable and legal option for the management of the species in our national context, providing arguments that favor discussion, avoiding speculative judgments.

# Adaptive management based on behavioral studies of wild South American camelids to minimize the impacts of mining activities

Olga Sepulveda<sup>1</sup>, Constanza Soto<sup>2</sup>, María Ignacia Undurraga<sup>3</sup>, Beatriz Zapata<sup>\*3,4</sup> and Ismael Horta-Pizarro<sup>3</sup>

1. Superintendente de Medio Ambiente/Quebrada Blanca fase 2/Teck Resources Chile 2. Gerente de Proyecto / Grupo Gestiona Consultores, Chile 3. Especialistas en Fauna Silvestre/ Grupo Gestiona Consultores, Chile 4. Universidad Santo Tomás, Viña del Mar, Chile

## Key highlights

1. To minimize the impacts of mining activities is one of the main challenges.
2. Risks associated to road is one of the focuses to reduce the impact on wildlife.
3. To minimize the impact of anthropic activities adaptive management was proposed based on the study of camelids as key species.
4. The model allows to map the risk of roadkill and other negative impacts and decrease the accidents involving wildlife.
5. This study shows a way to make mining activities compatible with the care of wildlife through an adaptive management model.

## Abstract

In the north of Chile, mining is an important source of development and contribution to the GDP. The main challenge is dealing with the affected wildlife through good management practices to reduce risk to wildlife and allow development with minimal side effects. One of the problems to solve is associated with roads. In this study we present a case of adaptive management to minimise risk for wild animals, using as a model the observation of the behaviour of the largest terrestrial wild animals: vicuñas and guanacos. Due to their size, they may be the main species affected by the new roads and the increase in vehicular traffic. Quebrada Blanca Mining Project Phases 1 and 2 (Mining company Teck Quebrada Blanca S.A) in its exempt Resolution No. 074/2018 account an adaptive model focused on the study of camelids behaviour and features of their groups and distribution. With this information, a map of the risk of crossing the roads wild

camelids, priority visit sites, such as water trough areas, food sources and rest areas, among other aspects, has been prepared, through the monitoring over two years. One Welfare World Virtual Conference Evidence to date shows that the incidence of roadkill of wild camelids has decreased and a culture of animal care on the road has begun to be established, which needs to be reinforced through training. The impact of this initiative could be enhanced by working in the association between different actors (public and/or private) in each geographical area of interest. The integration of the needs of both parties involved, wildlife and mining activity, together with scientific support in the environmental management process, show a clear example of conflict resolution through adaptive management and working for one welfare.

## SESSION 4 - ONE WELFARE AND PHOTOGRAPHY - is there a cost to amazing photographs? (Impacts on animal welfare, human wellbeing and the environment)



**Session chair** [Isabel Rodrigo](#)

**Keynote talk:** Creative wildlife photography as a means of conservation.

[Mario Cea](#)

Keynote talk: How photography and other visual tools can be scientifically incorporated into behaviour change effort

[Cortney Price](#)

## OWSM presentations

### Reframing One Welfare: Ways of Knowing and Seeing how Human and Other-than-Human Animals fare with John Berger and Jean Mohr.

Glen Cousquer  
BSc(Hons) BVM&S CertZooMed PGDOE MSc (Outdoor Ed.) MSc (Education Res.) PhD MRCVS IML SFHEA  
Royal (Dick) School of Veterinary Studies, University of Edinburgh.

#### Key highlights:

- John Berger (1926-2017)'s life work is widely revered for its impact on how we both see and know the world and yet, despite his exploration of the animal question, and of the health and welfare of humans and animals, he remains relatively unknown within the fields of human and veterinary medicine.
- The veterinary and medical profession's ignorance of his work is a tragedy for his idea that looking is a political act, perhaps even a historically constructed process, is key to addressing anthropocentricity in One Health and One Welfare.
- His work on photographic theory and practice and his collaboration with the legendary WHO photographer Jean Mohr resulted in photographic essays that transformed our understanding of medical practice and of public health.
- The relevance of the work of Berger and Mohr is explored through word and image in this presentation.

#### Abstract:

John Berger writes in his 1972 book *Ways of Seeing* that "the relation between what we see and what we know is never settled". As One Welfare and One Health emerge as transdisciplinary projects that seek to explore the interconnections between human, other-than-human-animal and environmental health, we find ourselves challenged to find correctives for the human gaze. This gaze is egocentric and anthropocentric rather than biocentric or ecocentric. It is a colonising force that has given rise to the domination system that has brought us to the brink of the sixth mass extinction, climate collapse and a plethora of inter-related planetary crises. This is the male gaze that John Berger's life work has been warning us about. In this presentation, we explore the significance of

Berger's work on *Ways of Seeing* and how this informs how we know ourselves and our wider relationships with and exploitation of workers, animals and of nature itself. Drawing on his classic works, including *Confabulations* and *What is an Animal?*, and his photographic essays with the WHO photographer Jean Mohr on country doctors, immigrant workers and photographic practice, this presentation explores Berger's relevance to One Welfare and to how we understand the meaning and significance of photographs. Berger's essays and books on the photograph grapple with the political ambiguity of an image's meaning in an image and emphasise how essential it is that photographs be accompanied by a narrative of some sort; one that helps us to relate to and make sense of the image.

# “GOZO for Cows” Bridges the Gap for Animal Welfare for the Next Generation

Hiromi NAGATA<sup>1</sup>, Wataru SHINOHARA<sup>2</sup>, Yoshiki MATSUMOTO<sup>1</sup>, Masaru TERABAYASHI<sup>2</sup> <sup>1</sup>Faculty of Agriculture, Kagawa University, Takamatsu City, Kagawa Prefecture, Japan <sup>2</sup>The Kagawa University Museum Takamatsu City, Kagawa Prefecture, Japan Hiromi NAGATA

## Key highlights

- The Kagawa University Museum exhibits a collection of mounted specimens of cattle from a closed zoo and a skeleton of a black Japanese crossbreed from a farm affiliated to the Faculty of Agriculture.
- These specimens play an important role in engaging the public in a dialogue about industrial heritage, animal welfare, and human well-being.
- Through an examination and analysis of these specimens, valuable insights can be gained into the evolution of animal conservation and welfare, as well as the social values and historical context surrounding them.

## Abstract

The mounted specimens of various breeds of cows displayed in Kagawa University museum can play a significant role in dialogue with the public regarding the use of industrial heritage. The museum intends to digitize the specimens to make them available to the public at large, using photography methods that highlight the characteristic features of the specimens. This approach is expected to enhance the learning experience of both people with and without disabilities regarding the human animal relationship. In the process of digitizing the Sanuki cattle skeletal specimen and Holstein cast models for the museum exhibition, one of challenges faced was accurate representation of the sex, age, and use of the skeletal models, highlighting the need for standardized three-dimensional data for digitization. While international standards for two-dimensional data exist, lack of standards for three dimensional data has hindered the digitization process. It is possible that further advances in digitization technology, such as virtual reality and interactive display, and the development of standardized three-dimensional data for digitizing specimens will enhance a wider audience's learning experience and accessibility to the specimens. For the display, Holstein's cast specimens were originally created by livestock farmers to show the ideal body shape of cattle and improve productivity. An ancient-style reputed sculptor Gozo Kawamura was commissioned to create a specimen that would intuitively convey the ideal body shape of a cow. The expressive power of Gozo's work, which captured the pelvic structure and

lactation organs, conveyed the relationship between humans and animals. Examining these differences in form is expected to provide valuable insights into the evolution of animal conservation and welfare over time. The expressiveness of the cast specimens also provides (a) a glimpse into the intentions of the creators regarding the time and values of the society surrounding animal welfare and human welfare and (b) a new perspective and deeper understanding of the historical background and the interaction between animal welfare and human society. Exploring ethical considerations surrounding animal welfare is important because investigating the ethical frameworks that guided past practices and contrasting them with contemporary ethical standards can contribute to ongoing discussions about and improvement in animal welfare practices. Conflict of Interest The authors have no conflicts of interest directly relevant to the content of this article. Acknowledgments I would like to thank Dr. Yoshiki Matsumoto of Kagawa University, a national university corporation, for his guidance and support. We thank Dr. Masaru Terabayashi, Director, and Dr. Wataru Shinohara, Deputy Director, of the Museum of Integrated Arts and Sciences, Kagawa University, for their cooperation. We thank the Gozo Kawamura Memorial Museum (Nagano, Japan) for providing us with materials. We thank the Kagawa Prefectural Livestock Experiment Station for providing the materials.



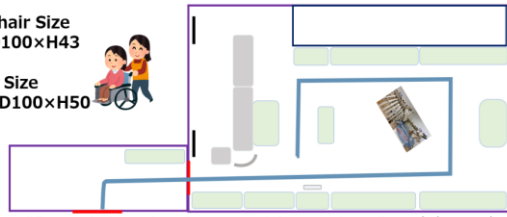




**Environmental assessment and adjustment**

To accommodate a diverse range of visitors, the environment in the museum should be adjusted so that the aisles are easy to navigate and the exhibits are easy to see.

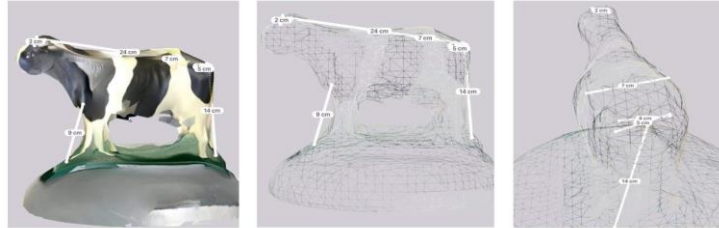
- Wheelchair Size  
W65×D100×H43
- Stroller Size  
W70×D100×H50



( Adapted to Building Standard Law, Fire Defense Law, and Fire Prevention Ordinance ) (W×D×H)

**Cast specimens of the Japan Holstein Society from the collection of the Kagawa University Museum**

**Creation of 3D content for the sympathetic skeleton (not yet achieved)**



⇒ The reason for not achieving this goal is that it is not consistent with body surface anatomy.

**World's first Holstein cast specimen from the collection of Kawamura Gozo Memorial Museum, Saku, Nagano**



Figure. Comparison of Holstein cast specimens from the Kagawa University Museum Collection exhibit and Japanese Holstein cast specimens from the Kawamura Gozo Memorial Museum collection.

**Conflict of Interest**

The authors have no conflicts of interest directly relevant to the content of this article.

**Acknowledgments**

I would like to thank Dr. Yoshiki Matsumoto of Kagawa University, a national university corporation, for his guidance and support. We thank Dr. Masaru Terabayashi, Director, and Dr. Wataru Shinohara, Deputy Director, of the Museum of Integrated Arts and Sciences, Kagawa University, for their cooperation. We thank the Gozo Kawamura Memorial Museum (Nagano, Japan) for providing us with materials. We thank the Kagawa Prefectural Livestock Experiment Station for providing the materials.



# Selfish Selfies: The use of captive wild animals as living props for souvenir photographs

Sarah Jefferson<sup>1</sup> and Mark Jones<sup>2</sup>

<sup>1</sup>Born Free Foundation, Horsham, United Kingdom, sarahj@bornfree.org.uk

<sup>2</sup>Born Free Foundation, Horsham, United Kingdom, markj@bornfree.org.uk

## Key highlights

People's 'love' of animals often leads to the temptation to get as close as possible, which can have dire consequences for animal and human health and welfare.

Modern society demands social media 'likes' and confirmation of our 'popularity' among friends and followers. This craving for recognition and entertainment often results in the exploitation and suffering of wild animals and presents significant risks to human health and safety.

As part of a 'One Welfare' approach, it is vital that the welfare of wild animals exploited for tourism and entertainment is prioritised, and that people are persuaded to stop posing with wild animals for photos and speak out for positive change.

## Abstract:

Our fascination with wild or exotic animals means that the chance to get as close as possible is often a strong temptation that is frequently exploited by those wanting to profit at the expense of the animals involved. The desire for that souvenir selfie with a cute or scary animal, seemingly perfect for a social media post to show our friends and followers, is fuelling an industry that has dire consequences for the health and welfare of both animals and people.

Via our 'Raise the Red Flag' initiative, Born Free receives hundreds of reports from distressed tourists each year about captive wild animals used as 'living props' for souvenir photos at popular tourist destinations, attractions, zoos, and other facilities around the world.

People might question what harm their one quick photo could cause, but it frequently masks a lifetime of suffering with individual animals being handled or posed with every single day, manipulated, manhandled, and even mutilated. Animals used as photo props may have been taken from the wild. Some are separated from their mothers and family groups, who may be injured or killed in the process. Many target species are classified as 'Endangered', 'Threatened', or 'Vulnerable' on the IUCN Red List, their capture contributing to the pressure on wild populations.

The risks posed to people by contact with captive wild animals must never be underestimated. Numerous incidents where direct contact with captive wild animals has resulted in human injury or death have been documented. In addition, wild animals can carry pathogens which can potentially affect people; the exploitation of wild animals in tourism results in stress increasing the likelihood of pathogen emergence and proliferation, and the close proximity to people risks pathogen spillover.

National governments need to address animal welfare issues and protect their wildlife through effective and well-enforced legislation. The travel industry needs to stop promoting activities that feature wild animal photo props and close animal contact. People must stop posing with animals for souvenir photos and speak out to raise their concerns and demand positive change.

The application of One Welfare principles demands an end to the exploitation of wild animals in tourism – for the sake of the animals themselves, the wild populations from which they are derived, and the people who come into contact with them.



## Research developments on animal assisted interventions under the “One Welfare” perspective: the dog-handler connection

Marta De Santis<sup>1</sup>, Lorena Filugelli<sup>1</sup>, Simona Normando<sup>2</sup>, Franco Mutinelli<sup>1</sup>, Laura Contalbrigo<sup>1</sup>

<sup>1</sup>National Reference Centre for Animal Assisted Interventions, Istituto Zooprofilattico Sperimentale delle Venezie, Legnaro (PD), Italy, (MDS), (LF), (FM), (LC)

<sup>2</sup>Department of Comparative Biomedicine and Food Science, Università degli Studi di Padova, Legnaro (PD), Italy,

### Key highlights

- Consistently with One Welfare, AAIs research developed a perspective that explores therapy animals' welfare;
- The animal-handler relationship is pivotal for AAIs and could be further investigated;
- Here we review measurements of dog-handler relationship and we explore their association with welfare.

### Keywords / Relevant Terms

animal assisted interventions, dog-handler relationship

### Abstract:

Animal assisted interventions (AAIs) aim to benefit humans by including animals in health, education and social services. Tracing a path from the early 1970s to the present, research in this field originally focused on the effects of AAIs on human health and welfare, while the welfare of therapy animals has begun to be explored within the last two decades. This path reflects the evolution of the human-animal relationship and the developments in animal welfare science that have recognized animal subjectivity and emotions. The animal involved in AAIs is not a tool and his/her welfare must be safeguarded; moreover, AAIs require, for effectiveness and safety, the establishment of a beneficial relationship for both animals and humans involved. Ideally, the absence of stress is no longer sufficient to draw conclusions about the animals' welfare state. Rather, it is necessary to investigate their positive emotions and motivation in being involved.

In line with the One Welfare Framework (OWF), a more holistic view of AAIs has developed, in which setting, human and animal side are interconnected and all contribute to welfare outcomes. The OWF leads to interesting questions: how does this “welfare connection” work? Can it be measured? Exploring these issues can help understand how to preserve the welfare of the whole system.

Human-animal relationship itself becomes the object of study, as it represents the

actual working tool in AAIs. The animal involved interacts with the patient/user, but firstly he/she establishes a special bond with the handler, which requires high level of cooperation and interspecific communication to achieve the intervention goals.

In this respect, the dog-handler dyad is the most studied, given the frequent involvement of this species in AAIs and the long co-evolutionary history between our species. We conducted a search through the Web of Science and Scopus databases to review the measures of the dog-handler relationship reported in the literature on AAIs: a) attachment style in this dyadic relationship; b) presence of hormonal or behavioral synchronization in the dog-handler team; c) questionnaires and scales applied to characterize this bond. A connection emerges between the quality of the dog-handler relationship and their welfare during AAIs. Therefore, the following questions arise: is it possible to identify measures of the relationship that may be predictive of human and animal well-being during AAIs? Could we estimate the “perfect match” that increases AAIs efficacy, i.e. that benefits all the participants?





# ONE WELFARE WORLD CONFERENCE

10-11 OCTOBER 2023 BURGOS, SPAIN



## Research developments on animal assisted interventions under the “One Welfare” perspective: the dog-handler connection

Marta De Santis<sup>1</sup>, Lorena Filugelli<sup>1</sup>, Simona Normando<sup>2</sup>, Franco Mutinelli<sup>1</sup>, Laura Contalbrigo<sup>3</sup>

<sup>1</sup>National Reference Centre for Animal Assisted Interventions, Istituto Zooprofilattico Sperimentale delle Venezie, Legnaro (PD), Italy  
<sup>2</sup>Department of Comparative Biomedicine and Food Science, Università degli Studi di Padova, Legnaro (PD), Italy

### Introduction

Animal assisted interventions (AAIs) aim to benefit humans by including animals in health, education and social services<sup>1</sup>.

Tracing a path from the early 1970s to the present, research in this field originally focused on the effects of AAIs on human health and welfare, while the welfare of therapy animals has begun to be explored within the last two decades<sup>2</sup>.

This path reflects the evolution of the human-animal relationship and the developments in animal welfare science that have recognized animal subjectivity and emotions. The animal involved in AAIs is not a tool and his/her welfare must be safeguarded; moreover, AAIs require, for effectiveness and safety, the establishment of a beneficial relationship for both animals and humans involved. Ideally, the absence of stress is no longer sufficient to draw conclusions about the animals' welfare state. Rather, it is necessary to investigate their positive emotions and motivation in being involved<sup>3</sup>.

In line with the One Welfare Framework (OWF), a more holistic view of AAIs has developed, in which setting, human and animal side are interconnected and all contribute to welfare outcomes. The OWF leads to interesting questions: how does this “welfare connection” work? Can it be measured? Exploring these issues can help understand how to preserve the welfare of the whole system.

Human-animal relationship itself becomes the object of study, as it represents the actual working tool in AAIs. The animal involved interacts with the patient/user, but firstly he/she establishes a special bond with the handler, which requires high level of cooperation and interspecific communication to achieve the intervention goals. In this respect, the dog-handler dyad is the most frequently involved in AAIs.

### Research question

What measures have been used so far to investigate the dog-human connection in AAI, in particular the dog-handler connection?

### Methods

1 Literature search through Scopus and Web of Science.

#### Inclusion/exclusion criteria:

- **Participants:** therapy dogs involved in AAI and their human counterparts (handler and patients/users). Not shelter dogs or family dogs.
- **Concept:** in our search, the term connection includes quantitative measures of relationship/bond/interactions between dogs involved in AAI and humans (handlers and recipients).
- **Context:** no geographical or date limitation. No limitation to the setting (experimental settings included).
- **Types of sources:** published peer-reviewed primary studies with no restriction regarding quantitative study designs. Qualitative studies, reviews, books, commentaries, editorials, letters and conference proceedings excluded. Only studies published in English included. No restriction placed on search dates.

2 Screening and identification of relevant records.

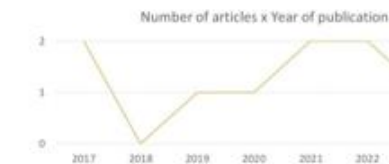
3 Data extracted from papers included using a data charting tool developed by the reviewers during an iterative process.

4 Synthesis.

### Results



### Publications characteristics<sup>3-11</sup>



### Measures

- Of the 9 articles reporting measures on the therapy dog –handler interaction/relationship/bond, 7 articles analyze the dog – handler interactions, of which 1 analyses also the dog-handler attachment bond, and 2 are focused on the assessment of the dyadic relationship.
- Articles use **behavioural observational methods** (n=7)<sup>3,5,7,9-11</sup> to analyze the interaction during real AAI (n=4), or mock AAI/experimental/testing environments (n=3). Specifically, frequencies and durations of certain behaviours are analyzed, 1 article uses a specific canine-human ethogram<sup>9</sup> and 1 uses a ten-items checklist<sup>11</sup>. Moreover, 1 article analyzes specifically **social synchrony**<sup>4</sup> between the therapy dog and the handler during AAIs and 2 articles analyze gazing behaviour of therapy dogs towards their handlers during a test situation<sup>3,7</sup>.
- The attachment bond between the therapy dog and the handler is analyzed by 1 article through behavioural observation and classification of **dog's attachment style during a secure base test**<sup>5</sup>.
- The dog-handler relationship is analyzed by 2 articles: 1 by the use of behavioural observation and grading techniques during a test for AAI suitability<sup>6</sup>; 1 by the use of two **questionnaires** (C/DORS and LAPS)<sup>8</sup>.

### Conclusions

This search yielded few studies reporting measures of therapy dog – human interaction/relationship/bond of recent date (2017 to present). Given the wide variety of terminology used, it will be useful to further expand the literature search by citation chasing of included papers. The items identified allow these methods to be highlighted:

- observation of interaction and presence of behavioral synchronization in the dog-handler team;
- categorization of attachment style in this dyadic relationship;
- questionnaires and scales applied to analyze this relationship and bond.

Given the link between the quality of the dog-handler relationship and their welfare during AAIs, the following question arise: is it possible to identify measures of the interaction/relationship/bond that may be predictive of human and animal well-being during AAIs? Further studies could help identify hands-on-tools to assess the connection between the therapy dog and the handler, in order to find the best matching characteristics of this dyad.

### Bibliography

1. IAAHO. IAAHO White Paper 2014, Updated for 2018. The IAAHO Definitions for Animal Assisted Intervention and Guidelines for Welfare of Animals Involved in AAI. 2018.
2. Miller SL, et al. The Importance of Evaluating Positive Welfare Characteristics and Temperament in Working Therapy Dogs. *Front Vet Sci.* 2022;9:329.
3. Mongillo, P., Pittari, E., & Marinelli, L. Sustained attention to the owner is enhanced in dogs trained for animal assisted interventions. *Behav Process.* 2017;140:69-73.
4. Pinna, F., et al. Measuring social synchrony and stress in the handler-dog dyad during animal-assisted activities: A pilot study. *J Vet Behav.* 2017;21:43-52.
5. Wynne, L. H., & Umbl, M. A. Does attachment security to a human handler influence the behavior of dogs who engage in animal assisted activities? *Appl Anim Behav Sci.* 2019;230:88-94.
6. Kujawa, A., Struchiner, L., & Gogolek, A. A pilot study on the qualitative assessment of the impact of human-canine relationships on dogs' susceptibility to stress. *Dog Behav.* 2020;6(1):13-20.
7. Potti, P., et al. Personality and Cognitive Profiles of Animal-Assisted Intervention Dogs and Pet Dogs in an Unavoidable Task. *Animals.* 2021;11(7):2144.
8. Riggio, G., et al. The dog-owner relationship: Refinement and validation of the Italian C/DORS for dog owners and correlation with the LAPS. *Animals.* 2021;11(8):2166.
9. Lee, C. Y., et al. Development of a pilot human-canine ethogram for an animal-assisted education programme in primary schools—A case study. *Appl Anim Behav Sci.* 2022;255:105725.
10. Sarrafchi, A., et al. Effect of human-dog interaction on therapy dog stress during an on-campus student stress bustle event. *Appl Anim Behav Sci.* 2022;253:105639.
11. Hill, L., et al. Investigating Dog Welfare When Interacting with Autistic Children within Canine-Assisted Occupational Therapy Sessions: A Single Case Study. *Animals.* 2023;13(2):1965.

### Acknowledgments

This research is part of the project RC 08/22 funded by the Italian Ministry of Health.





# Knowledge and perception of animal welfare at the camel market in Egypt

Barbara Padalino<sup>1</sup>, Beatrice Benedetti<sup>1</sup>, Ziani Abdelali<sup>2</sup>, Laura Menchetti<sup>3</sup>

<sup>1</sup> Department of Agricultural and Food Sciences, University of Bologna, Viale Fanin 44, 40127, Bologna, Italy ;

<sup>2</sup> Animals' Angels, Rossertstrase 8, D-60323, Frankfurt, Germany,

<sup>3</sup>School of Biosciences and Veterinary Medicine, University of Camerino, via Gentile III da Varano, 62032 Camerino, Italy,



## Key highlights

- The perception of animal welfare was investigated among the workers at a camel market
- The interviewees learned mainly from family and friends how to manage camels
- The understanding of animal welfare was often limited, missing the multicentric approach
- Camel welfare level was often low and associated with poor human knowledge
- Findings confirm the link between human and animal welfare and the need for education

## Abstract:

Humane factors, including experience in animal handling and management, and knowledge of animal welfare are crucial to safeguard animal wellbeing. This study aimed at gaining information on camel caretakers' backgrounds, their perception



of welfare and possible associations with camel health and behavioural problems. Sixty-one workers were interviewed at the camel Birqash market in Cairo, Egypt. The interviewees were mainly young men (90.2% <50 years;  $P<0.001$ ), from Egypt (96.7%;  $P<0.001$ ), with low educational level, who learned about camel handling and management from family and friends (78.7%;  $P<0.001$ ). Most of the interviewees judged their ability in identifying a camel in distress/pain as "High" or "Very high" (62.3%;  $p=0.001$ ), reporting monitoring camel eyes (52.6%) or feeding behaviour (42.1%). However, the interviewees' understanding of animal welfare was low, missing the overall meaning. The 11.5% of interviewees didn't know at all what

animal welfare was and, in general, animal welfare was defined mainly referring to only two out of the four welfare principles (45.9%;  $p<0.001$ ). Good feeding and good health were often considered, while good housing and appropriate behaviour were reported rarely, revealing important gaps in the caretakers' perception of camel welfare. As expected, interviewees' age, experience and education level were negatively associated with the welfare status of the camels in their care, which often was under minimal standards. These associations suggest the need to improve the educational level of people who manage camels to protect their

welfare. In light of this consideration, the authors have started to organise workshops in Egypt where veterinarians and other camel-related people can study animal handling, behaviour and welfare.  
Funding: Animals' Angels



Figure 2: group of workers reading a booklet on camel welfare

Figure 1: a worker using force to load a camel



# Empirical treatments for colic in working equids in four regions of Colombia and its implication in animal welfare.

Agudelo Cataño, Maria Alejandra (1); Henao Villegas, Santiago (2); Ramírez García, Francisco René (2); Jaramillo Gómez, Carolina (3); Pizarro Gómez, Sergio Andrés (3); Burrige, Jessica (4); Burford, John (4);

(1) UNIVERSIDAD CES, MEDELLIN, COLOMBIA (2) GRUPO INCA-CES DE UNIVERSIDAD CES (3) FUNDACIÓN ARRIEROS COLOMBIA (4) UNIVERSITY OF NOTTINGHAM

## Key highlights (max 15 words per bullet)

- Animal welfare
- Abdominal pain
- Equine health
- One Welfare

**Keywords / Relevant Terms** Animal welfare ,Abdominal pain , Equine health , One Welfare

## Abstract:

Working Equids have a key role in the daily life of families in Colombia, they are used for several activities that provide socioeconomic support to the communities, such as agriculture, mining, and tourism, among others. Equids are very prone to suffer from colic, with serious repercussions on their health and welfare but also with collateral effects on people's economic sustainability. Communities with higher poverty rates could be considered the most affected by colic in equids due to the limited access to professionals that provide adequate care. Given the above, it is important to know the empirical protocols implemented by people and their impact on animal welfare. This study focused on 4 communities: Santa Marta, Andes, Cocorná, and Apartadó, with structured interviews with 58 equids owners, all with

an economic dependence related to the bond established with equids (horses, mules, and donkeys). The administration of oral beer was the most frequently implemented alternative, alongside cooking oil and vinegar. Although there is some confidence in these products, the outcome is unfortunate in a high proportion. In addition to the above, the use of plants such as Matarratón (*Gliricidia sepium*), Achicoria (*Cichorium intybus*), Totumo (*Crescentia cujete*), Quebrabarrigo (*Trichanthera gigantea*), are also widely used, especially in the Arhuaco indigenous reserve of Kütünsama (Santa Marta). The lack of professional assistance forces the communities to look for empirical alternatives, however, the welfare of the equids is substantially affected





ONE WELFARE CIC PRESENTS

# ONE WELFARE WORLD CONFERENCE

10-11 OCTOBER 2023 BURGOS, SPAIN



## Empirical treatments for colic in working equids in four regions of Colombia and its implication in animal welfare.

Agudelo Cataño, Maria Alejandra (1); Henao Villegas, Santiago (2); Ramírez García, Francisco René(2); Jaramillo Gómez, Carolina(3);Pizarro Gómez, Sergio Andrés(3); BurrIDGE, Jessica (4); Burford, John (4)

1. Est MVZ Universidad CES 2. Grupo INCACES de universidad CES 3. Fundación Arrieros Colombia 4. University of Nottingham

### Introduction

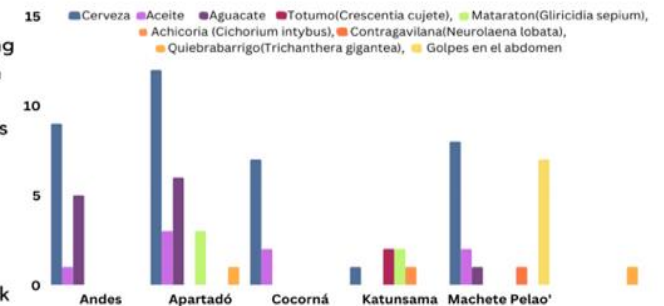
Working Equids have a key role in the daily life of families in Colombia, they are used for several activities that provide socioeconomic support to the communities, such as agriculture, mining, and tourism, among others. Equids are very prone to suffer from colic, with serious repercussions on their health and welfare but also with collateral effects on people's economic sustainability. Communities with higher poverty rates could be considered the most affected by colic in equids due to the limited access to professionals that provide adequate care. Given the above, it is important to know the empirical protocols implemented by people and their impact on animal welfare.

### Methodology

- A descriptive, cross-sectional cohort study was conducted
- Structured surveys with open-ended and multiple-choice questions in Santa Marta, Andres, Cocorná, and Apartadó
- Participants: Muleteers from different communities, of any age, with own and non-own equines

### Results

The administration of oral beer was the most frequently implemented alternative, alongside cooking oil and vinegar. Although there is some confidence in these products, the outcome is unfortunate in a high proportion. In addition to the above, the use of plants such as Matarratón (Gliciridia sepium), Achicoria (Cichorium intybus), Totumo (Crescentia cujete), Quiebrabarrigo (Trichanthera gigantea), are also widely used, especially in the Arhuaco indigenous reserve of Kütünsama (Santa Marta). The lack of professional assistance forces the communities to look for empirical alternatives, however, the welfare of the equids is substantially affected



Working Equids Welfare

Colic leads to pain, discomfort, posturing



Socioeconomic stability

Equid can't work  
No transport of people, materials or harvest



Human- Environmental well-being

Food, Transport, Economic support

### Conclusion

It is extremely important to know how communities act against the appearance of diseases such as colic in working equines and how it affects people's daily lives. It has been evident that for the community, colic represents a big concern and directly affects its economic activity, therefore, it also generates repercussions on the quality of life and stability of people. Knowing what treatments are used for colic, we could have greater clarity about how efficient they are and how to educate communities to act in these situations when access to areas and medical care is difficult



# Barriers to the promotion of positive welfare states for dairy cattle and associations with producer well-being

Michael W Brunt\*<sup>1,2,3</sup>, Andria Jones-Bitton<sup>1,2</sup>, Stephen J LeBlanc<sup>1,2,3</sup>, David F Kelton<sup>1,2,3</sup>

<sup>1</sup>Department of Population Medicine, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada

<sup>2</sup>Dairy at Guelph, University of Guelph, Guelph, Ontario, Canada

<sup>3</sup>Campbell Centre for the Study of Animal Welfare, University of Guelph, Guelph, Ontario, Canada

## Key highlights

Our goals are

- To elucidate if dairy producers proactively engage in promotion of positive welfare states for cattle
- To highlight the barriers to positive welfare state implementation on dairy farms
- To investigate extent which producers' promotion of positive welfare is associated with their mental wellbeing
- To identify links between welfare of animals and welfare of humans who care for them
- To translate applied research into practice on farms to benefit both cows and farmers

**Keywords / Relevant Terms** dairy, cows, farmers, qualitative, focus groups

## Abstract

Improving the lives of animals in agricultural systems has traditionally focused on minimizing negative experiences. Although research into the promotion of positive experiences (pleasure, enjoyment, play, choice, or happiness) for animals is expanding, it remains unclear how Canadian dairy producers perceive their role in the promotion of positive welfare states for their animals and if there are constraints to its implementation. Poor mental health might interfere with their perceived capacity to promote positive welfare; conversely, inability to positively influence welfare in animals may be detrimental to the mental wellbeing of caregivers. Public attitudes about potentially controversial dairy practices such as lack of access to pasture, the separation of a calf from its mother at birth, and disposition of surplus male dairy calves may exacerbate the pressure felt by producers working under the social license of farm animal agriculture. Therefore,

our research questions are: 1) the extent to which producers proactively engage in the promotion of positive welfare states for dairy cattle, 2) what are the barriers to positive welfare implementation for producers, and 3) does the extent to which producers promote positive welfare states affect producer mental wellbeing? Purposive and snowball sampling were used to recruit dairy farmers, living in the Canadian province of Ontario. Five focus groups were conducted with 27 participants, using a semi-structured interview guide. Applied thematic analysis will be used to analyze data transcripts.

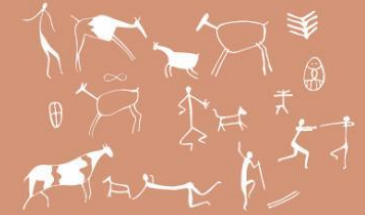




ONE WELFARE CIC PRESENTS

# ONE WELFARE WORLD CONFERENCE

10-11 OCTOBER 2023 BURGOS, SPAIN



## Barriers to promotion of positive welfare states for dairy cattle and their associations with producer well-being

Michael W Brunt<sup>\*1,2,3</sup>, Andria Jones<sup>1,2</sup>, Stephen J LeBlanc<sup>1,2,3</sup>, David F Kelton<sup>1,2,3</sup>

<sup>1</sup>Department of Population Medicine, Ontario Veterinary College; <sup>2</sup>Dairy at Guelph; <sup>3</sup>Campbell Centre for the Study of Animal Welfare, University of Guelph, Guelph, Ontario, Canada

### Introduction

- Improving the lives of animals in agricultural systems has traditionally focused on minimizing negative experiences
- Research aimed to understand positive experiences (pleasure, enjoyment, play, choice, or happiness) for animals is expanding
- It is unclear how Canadian dairy producers perceive their role in promotion of positive welfare states for their animals and if there are constraints to its implementation
- Poor mental well-being might interfere with capacity to promote positive welfare. Conversely, inability to positively influence welfare in animals may be detrimental to the mental well-being of caregivers

### Research Questions

- To what extent do producers proactively engage in the promotion of positive welfare states for dairy cattle?
- Are there barriers to positive welfare implementation for producers?
- Does the extent to which producers promote positive welfare states affect producer mental well-being?

### Methodology

- 27 dairy farmers participated in 5 focus groups
- Applied thematic analysis of transcripts (Guest *et al.* 2012)



Well-being?



### Future Directions

- Conduct additional focus groups with dairy producers, veterinarians, veterinary students, and faculty instructing animal welfare

<https://ovc.uoguelph.ca/population-medicine/staff/michael-brunt>



# Situation Analysis and Recommendations for the Biosecurity Status of Dairy Farms in Punjab, India: A Cross-Sectional Survey

Pankaj Dhaka<sup>1,2\*</sup>, Ilias Chantziaras<sup>1</sup>, Deepthi Vijay<sup>2,3</sup>, Manmeet Singh<sup>2</sup>, Jasbir Singh Bedi<sup>2</sup>, Nele Caekebeke<sup>1</sup> and Jeroen Dewulf<sup>1</sup>

<sup>1</sup> Faculty of Veterinary Medicine, Department of Internal Medicine, Reproduction and Population Medicine, Ghent University, Salisburylaan 133, 9820 Merelbeke, Belgium

<sup>2</sup> Centre for One Health, College of Veterinary Science, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana 141004, India

<sup>3</sup> Department of Veterinary Public Health, College of Veterinary and Animal Sciences, Mannuthy, Thrissur 680651, India

## Key highlights

- Farm biosecurity in Punjab, India needs improvement; mean score is 44.8% (global mean 52%).
- Positive correlation between herd size and biosecurity scores suggests bigger farms perform better.
- 'Purchase and reproduction' and 'health management' require more attention to biosecurity measures.
- The Biocheck.UGent™ system can be used to assess the biosecurity status on dairy farms.
- Recommendations for further research on factors influencing biosecurity implementation in the region.
- One Welfare message: Improving farm biosecurity benefits animal health, welfare, and human livelihoods.

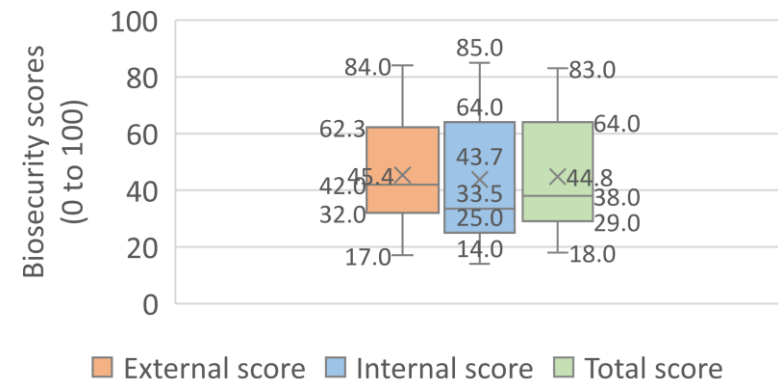


**Keywords / Relevant Terms:** Animal Health, Biosecurity, Dairy farm, Welfare, India

## Abstract:

Farm biosecurity is an important herd management strategy to assure infection prevention and animal health. The present study aimed to evaluate the implementation of biosecurity measures on dairy farms in Punjab, India, using the standardized Biocheck.UGent™ scoring system. Convenience sampling was used to select 94 dairy farms, comprising both cattle and buffaloes, with a mean herd size of 74.8 animals. The study found that the mean external and internal biosecurity scores for the selected dairy farms were 45.4% and 43.7%, respectively. Among the subcategories, the highest external biosecurity score was observed for 'vermin control and other animals' (63%), and the highest internal biosecurity score was observed for 'adult cattle management' (76.6%). Whereas the lowest score for external biosecurity was observed for 'purchase and reproduction' (30.6%), and the lowest score for internal biosecurity was observed for 'health management' (33.6%). The overall mean biosecurity score of the present study was 44.8%, which was lower than the overall mean global score of 52%. The correlation analysis indicated a positive correlation between herd size and overall biosecurity scores indicating that bigger farms had on average higher biosecurity scores. The present study reflects the scope of improvement for implementation of quarantine protocols, awareness on carcass and placenta disposal, use of compartment-specific equipment, clothing and boots, implementation of insect, bird, and rodent control measures, proper emphasis on calf management, as well as complying with biosecurity protocols for workers and visitors. In conclusion, prioritizing farm biosecurity through comprehensive measures can lead to notable improvements in animal welfare, human health, and environmental integrity. The study's findings

underscore the potential for refining biosecurity protocols and raising awareness, thereby fostering a healthier and safer farming ecosystem for all stakeholders involved.



**Figure 1: Comparison of external, internal, and total biosecurity scores among study farms**



## Situation Analysis and Recommendations for the Biosecurity Status of Dairy Farms in Punjab, India: A Cross-Sectional Survey

Pankaj Dhaka<sup>1,2\*</sup>, Ilias Chantziaras<sup>1</sup>, Deepthi Vijay<sup>2,3</sup>, Manmeet Singh<sup>2</sup>, Jasbir Singh Bedi<sup>2</sup>, Nele Caekebeke<sup>1</sup> and Jeroen Dewulf<sup>1</sup>

<sup>1</sup> Faculty of Veterinary Medicine, Department of Internal Medicine, Reproduction and Population Medicine, Ghent University, Belgium

<sup>2</sup> Centre for One Health, College of Veterinary Science, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India

<sup>3</sup> Department of Veterinary Public Health, College of Veterinary and Animal Sciences, Mannuthy, Thrissur, India

### Introduction

#### Why farm biosecurity is important?



- ↑ Farm productivity
- ↑ Farm stability
- ↑ Quality & safety of farm products
- ↑ Animal welfare
- ↓ Risk of zoonotic infections
- ↓ Antimicrobial usage and resistance

**Study objective:** To assess the biosecurity status of dairy farms in Punjab (India): Situation analysis and Recommendations.

### Methods

Cross-sectional survey of dairy farms of Punjab (India)

- Convenience sampling between July 2021 to Nov. 2022

Assessment of biosecurity measures using the Biocheck.UGent™ questionnaire



(Weblink: <https://biocheckgent.com/en/questionnaires/dairy-cattle>)

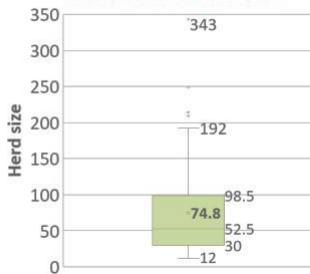
- 124 response recorded for each farm under 05 subcategories of external & 06 subcategories of internal biosecurity components.

Statistical analysis:



### Results

#### Herd characteristics



#### 94 commercial dairy farms

- 44 farms had cattle
- 39 farms had both buffaloes & cattle
- 11 farms solely had buffaloes

Mean herd size: 74.8 bovines

#### Biosecurity scores of study farms and comparison with the global mean scores

Biosecurity parameters	Mean (%)	SD (%)	Min (%)	Max (%)	Global mean (%)*
<b>External biosecurity score</b>	<b>45.4</b>	<b>18</b>	<b>17</b>	<b>84</b>	<b>67</b>
a) Purchase and reproduction	30.6	17.1	4	66	78
b) Transport and carcass removal	52.9	28.4	0	100	47
c) Feed and water	61	22.4	15	100	59
d) Visitors and farmworkers	47.6	21.1	9	92	70
e) Vermin control & other animals	63	25.2	0	96	62
<b>Internal biosecurity score</b>	<b>43.7</b>	<b>22.4</b>	<b>14</b>	<b>85</b>	<b>37</b>
a) Health management	33.6	32	0	93	31
b) Calving management	42.4	22.1	11	91	31
c) Calf management	41.6	20.2	10	82	43
d) Dairy management	55.1	18.6	12	85	47
e) Adult cattle management	76.6	17.2	28	100	40
f) Working organisation & equipment	41.9	31.1	3	100	38
<b>Overall biosecurity score</b>	<b>44.8</b>	<b>19.6</b>	<b>18</b>	<b>83</b>	<b>52</b>

Parameters having scores above than global average (green)  
Parameters having scores below than global average (orange)

\*Data of 1848 farm scores submitted to Biocheck.UGent™ as of February 21, 2023.

**External biosecurity score: 45.4% (global mean 67%)**

The low scores for subcategories of 'purchase and reproduction' and 'visitors and farmworkers' was mainly due to

- Limited awareness of quarantine protocols
- Inadequate testing of purchased calves' maternal immunity
- Limited diagnostic facilities for endemic diseases
- Farm workers engaged in external work, increasing disease risk

**Internal biosecurity score: 43.7% (global mean 37%)**

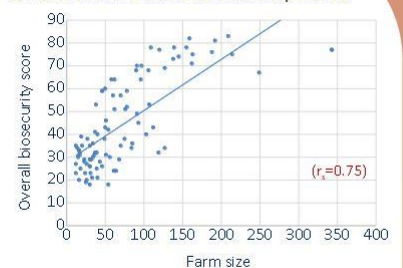
Subcategories of 'adult cattle management' and 'dairy management' was found to have high scores.

- Might be attributed to farmers' experience in dairy farming with focus on internal farm management
- However, the 'calf management practices' need to be addressed in the region.

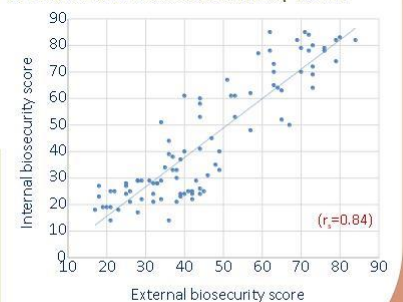
The study's overall mean biosecurity score of 44.8% was lower than the global mean of 52%, reflecting that a significant portion of the surveyed farms using Biocheck.UGent™ were from European regions, where a strong emphasis on farm biosecurity compliance is typically advocated.

#### Correlation analysis

##### a. Farm size and overall biosecurity scores



##### b. External and Internal biosecurity scores



### Conclusions

The study highlights that the mean biosecurity scores for overall and external biosecurity factors on the selected dairy farms were below the global average. The key areas requiring improvement include 'purchase and reproduction' and 'health management'. A positive correlation between herd size and overall biosecurity scores suggests that larger farms tend to have better biosecurity practices. The study highlights clearly shows the need for carrying out more quantitative assessment of the biosecurity practices in the region so that evidenced based package of practices can be formulated.

Acknowledgement:



NHEP

\* Presenting author:  
Dr. Pankaj Dhaka



pankaj.dhaka2@gmail.com

# Exploring the well-being of animals through the lens of the human work environment.

Hiromi NAGATA<sup>1</sup>, Yasuhiro FUJITANI<sup>2</sup>, Yoshiki MATSUMOTO<sup>1</sup>

<sup>1</sup>Graduate School of Agriculture, Kagawa University, Takamatsu City, Kagawa Prefecture, Japan <sup>2</sup>Insect Business Research and Development Platform, Habikino City,Osaka Prefecture, Japan

## Key Highlights:

- Insects are gaining recognition as a protein alternative, but cultural differences have hindered their developed countries' food consumption.
- Japan has updated its livestock standards to prioritise insect welfare, establishing the iBPF platform.
- Insect farming is considered a domestic animal and particular care in Asian countries, Thailand and South Korea, and lessons from beekeeping and sericulture can improve insect welfare in Asia.
- Japan's ageing population strives to create a more inclusive work environment through our pioneering insect production efforts involving people with disabilities.

**Keywords / Relevant Terms:** Insect welfare Animal Welfare Human Working Environment Guidelines

## Abstract:

Japan has a cultural tradition of eating insects, while Europe has not accepted it for cultural reasons. Insects are gaining popularity as a protein alternative, and there is increasing consideration for their welfare in industrial production. The world is curious about the EU's reaction to insects as a new food item.

Japan updated their livestock standards in July 2023 to align with animal welfare policies. They created the iBPF to produce insects for industrial use safely. The platform aims to build consumer trust and promote healthy insects for livestock and fish feed. We focus on implementing feeding management standards, prioritising insect welfare and considering the human working environment. We also evaluate how to accommodate staff with disabilities at insect production sites. Insufficient research on antimicrobial agents and antibiotics for insect production has been identified. However, we have developed an innovative drug-free pest control technology called i-Trap (Kondo Electronics, Co., LTD., Osaka, Japan). It effectively captures and eradicates blood-sucking mites using electrically charged

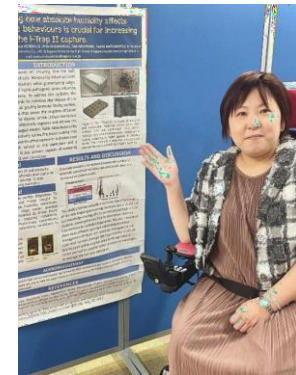
**Conflict of Interest:** The authors have no conflicts of interest directly relevant to the content of this article.

**Acknowledgments** We would like to express our sincere appreciation to Dr. Yasuhiro Fujitani of the Osaka Prefectural Institute of Environment, Agriculture,

components. Having tested it in the poultry industry, we are confident that this technology can be successfully applied to insect production. Our integrated pest control methods eliminate external parasites without relying on drugs, making it a pragmatic tool for the industry.

Insect farming is considered domestic animal care in Japan, Thailand, and South Korea. If highly efficient industrial production of insects is advanced, it is conceivable that electrically charged sites could be created in factories. Attention should also be paid to the behavioural characteristics of external parasites that move between humans, animals and the environment. To create safe environments for insect welfare, we must consider past practices in beekeeping and sericulture. Focusing on insect production and welfare can improve their lives and benefit humans and animals.

**Forestry and Fisheries.** We would like to thank Mr. Tetsuya Kondo, President of i-Trap II Kondo Electronics Co. We would also like to thank Mr. Nakamura, President of Himeji Port Transport Co.

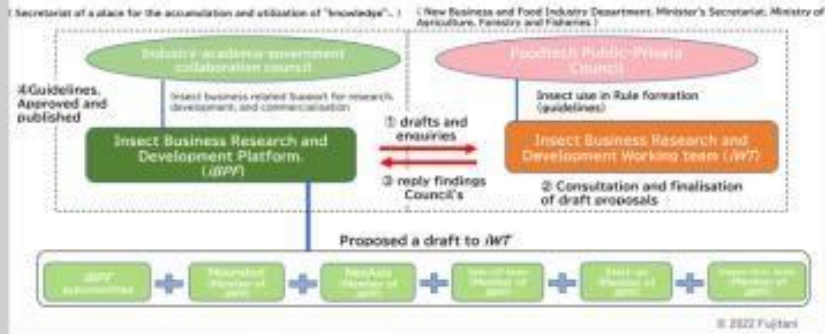


# Japan is researching ways to boost its insect production industry for global impact.

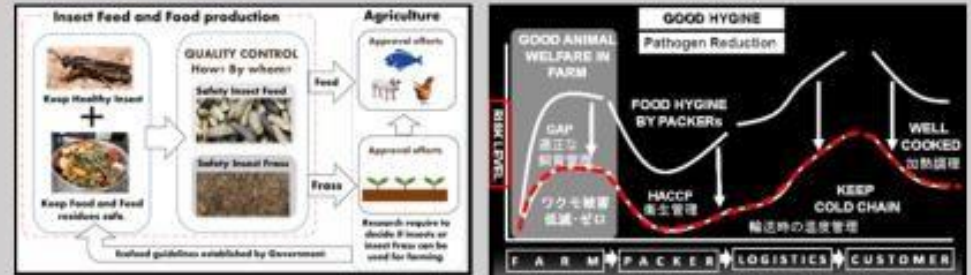
## Phase I Create an organization and inter-organizational collaboration

### Rule-making in insect Food and Feed tech

Aim to establish and operationalize the system.  
The iBPF prepares a draft, and the iWT discusses the content.



## Phase 2 Social implementation Insect feed production in compliance with eco-feed guidelines



## Phase 3 Specific evaluation Evaluation of companies complying with insect production guidelines and collaborative cooperation

### Resource for establishing excellent insect production practices

**One World One Health**  
The Will of Transparency

IBPF and iWT will work together to develop production guidelines for insect-based foods and feeds. The goal is to encourage more companies to comply with these guidelines.

Organization for insect safety assessment, animal welfare, and feed and food security certification (tentative)

Eco-feed guidelines established in Japan can be used overseas

Safety regulations, Social values, Demand, Cooperation, Welfare, and Well-being in our decision-making

Researching the use of insects for protein and as livestock for by-products.

- Assessment of Risk by Researchers
- Management of Risk by Government
- Communication of Risk by Consumers
  - Consumer safety (when consumed directly as food or indirectly through feed)
  - Environmental safety (especially, consideration for quarantine of infectious diseases of insects)
  - Safety management by maintaining public health (breeding animals and insect safety assessment)
  - Worker safety (improvement of the working environment of producers, especially through quarantine and non-use of chemicals/Safety of users (people who handle insects and products derived from insects))
  - Safety of society (development and enforcement of globally harmonized laws and regulations)

Health and Food & Feed safety



# The impact of Covid-19 on working equids and their owners

Burridge, Jessica<sup>(1)\*</sup>, Wild, Isabella<sup>(2)</sup>, Warboys, Debbie<sup>(2)</sup>, Maguire, Liam<sup>(2)</sup>, Freeman, Sarah<sup>(1)</sup>, Burrell, Katie<sup>(1)</sup>, Burford, John<sup>(1)</sup>  
<sup>1</sup>School of Veterinary Medicine and Science, University of Nottingham, Sutton Bonington, Leicestershire, <sup>2</sup>World Horse Welfare, Snetterton, Norfolk

## Key highlights

- There is little research on the impact of Covid-19 on working equid owning communities
- As a result of the pandemic, many owners have experienced a decreased household income
- Owners have experienced an increased cost of owning an equid, and overall living cost
- Some owners have had to make changes to the daily management of their equids
- Skin wounds, parasites, lameness and weight loss have increased within working equid populations

## Keywords / Relevant Terms

Working equid, Covid-19, Welfare, One welfare, Human livelihoods

## Abstract

The welfare of working equids prior to the Covid-19 pandemic is well documented; however, there is little research looking at how the situation may have changed through the pandemic. Along with this potential change in equid welfare, it is important to consider the consequences to working equid owners.

This study aimed to report the impact of the Covid-19 pandemic on working equids and the communities that rely on them. Surveys were carried out in person, online or over the telephone between September and December 2021. This survey was part of a larger study that had collected survey data a year prior to see how any changes developed over time. Results were collected from fourteen partner organisations across Latin America, Africa and Asia.

Sixty-two-percent (n=749/1201) of owners having experienced a decreased household income and 50% (n=571/1132) of owners having experienced a



decreased equid derived income. Forty-seven-percent (n=561/1199) of owners reported an increased cost of living with 31% (n=382/1208) reporting an increased cost of owning an equid. Many owners changed the management of their equids, including swapping to cheaper foods (30%, n=367/1219), reducing their equids supplements (27%, n=323/1219) and reducing the frequency they shod their equid (17%, n=206/1219). However, less than 1% (n=12/1219) had to give up their equids altogether. Participants reported an increase in the frequency of skin wounds, lameness, parasites and weight loss since the start of the pandemic.

With equid derived and overall income having decreased and the cost of living and owning equids increased, further financial challenges may be seen. With increased financial implications, both owner livelihood and working equid welfare may be compromised further





# Qualitative study exploring the social and physical environment of working equids and their owners in Colombia

Burridge, Jessica(1)\*, Burrell, Katie(1), Henao Villegas, Santiago(2), Jaramillo Gomez, Carolina(3), Freeman, Sarah(1), Maguire, Liam(4), Wild, Isabella(4), Burford, John(1)

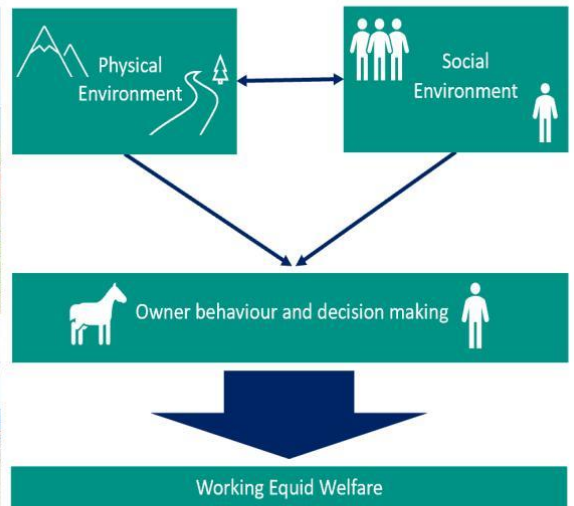
1School of Veterinary Medicine and Science, University of Nottingham, Sutton Bonington, Leicestershire, 2CES Universidad, Medellin, 3Fundación Arrieros Colombia, Medellin, 4World Horse Welfare, Snetterton, Norfolk

- Relationship between equids and their owners increasingly highlighted
- Little research into the physical and social environment of these communities

**Aim:** To explore the environment that working equids and their owners live in.

**Methods:**

- 24 focus groups across 8 regions of Colombia
- Split into owners, women and leadership figures
- Thematic analysis using inductive approach

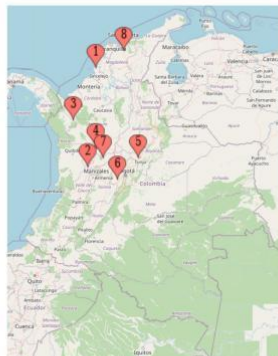
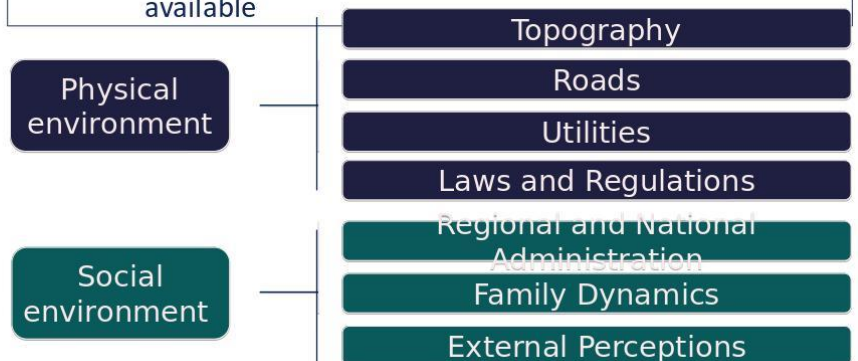


**Physical environment** had four associated sub-themes: 'topography', 'roads', 'utilities' and 'laws and regulations'

- Road quality and topography increased need for working equids
- Access to human and veterinary medical care is challenging

**Social environment** had three sub-themes: 'regional and national administration', 'family dynamics' and 'external perceptions'.

- Determined amount of support owners receive, the process of knowledge transfer, and the opportunities available



- 1) Cartagena
- 2) Andes
- 3) Apartado
- 4) Enterreros
- 5) Santiana
- 6) Villeta
- 7) Cocorna
- 8) Santa Marta

**Results:**

- Two overarching themes: 'physical environment' and 'social environment'
- Both influence owner's decision making and equid welfare

**Conclusions:**

- Highlighted importance of understanding the physical and social environment
- Identification of barriers important for providing support



# A One Welfare approach to tick bite prevention: The impact of the environment on human and animal health

Lieve L. Meers<sup>1</sup>, Elizabeth A. Walsh<sup>2</sup>, William E. Samuels<sup>3</sup>, Anita Claus<sup>1</sup>, Carolina Duarte-Gan<sup>4</sup>, Laura Contalbrigo<sup>5</sup>, Vicky A. Stevens<sup>1</sup>, Stephan J. Laufer<sup>1</sup>,

Carlos Dekeyrel<sup>1</sup>, Daniel Berckmans<sup>6</sup>, Simona R. Normando<sup>7</sup>

<sup>1</sup>BIAAT Foundation, Genk, Belgium –<sup>2</sup>Cork Pet Behaviour Centre, Cork, Ireland <sup>3</sup>Hunter College, School of Nursing, New York, USA <sup>4</sup>University of Jaén, Department of Psychology, Jaén, Spain <sup>5</sup>National Reference Centre for Animal Assisted Interventions, Istituto Zooprofilattico, Legnaro (PD), Italy <sup>6</sup>Katholieke Universiteit Leuven, Dier en Mens, A2H, Leuven, Belgium. <sup>7</sup>University of Padua, Department of Comparative Biomedicine and Food Science, Legnaro (PD), Italy -

## Key highlights

- Ticks (hard/soft-bodied arachnids) are blood-feeding ectoparasites which can spread rickettsia/spirochaetes/viruses among their hosts.
- Ticks depend on specific environmental conditions -humidity, temperature, shade, hosts- to live and breed.
- Tick-repellent products can cause environmental safety/pollution concerns, food contamination, and resistance to chemical acaricides.
- An integrated "One Health/Welfare" approach preventing TBD in humans, all animals, including wildlife is advocated.

## Abstract:

Human-, animal- and ecosystems health are interdependent. Recent climate change facilitates ticks questing in previously non-endemic areas and spreading tick-borne diseases (TBD) almost year-round, increasing risk for animals (livestock/pets/rodents etc.) grazing/playing/walking in long grass near undergrowth/tree trunks/stones and for humans, limiting enjoyment of natural environments and related welfare benefits. Our abstract reviews literature on (Google Scholar; "tick-bite prevention" AND environment OR "One Welfare") the link between practitioners working on environmental-related tick-bite prevention strategies from a "One Welfare perspective".

TBD-prevention begins with human/animal vaccinations, permethrin-treated animal beds/blankets/clothing, and human/animal topical skin tick-repellents when entering tick- infested areas. However, these treatments can cause environmental pollution, food contamination, and chemical resistance. Alternative solutions such as essential oils can be useful but may also be toxic or irritant to humans and animals. Other natural tick predators (pathogenic fungi, entomopathogenic nematodes, tick/larvae eating insects) are still being researched.

Given the correlation between animal/wildlife/human parasitism and environmental infestation, landscape architects and gardeners can contribute to prevention of TBD through creating gardens with 5-foot wood-chip paths separating grass/playgrounds from bushes/trees, short grass, without leaf litter/wood-piles, wild bird feeders located distant from housing, and properties wildlife fenced. Catching techniques for ticks employing dry ice trapping, dragging, flagging, sweep netting, and CO<sub>2</sub>-dragging/flagging are currently only used during

research. Other tools to protect wild rodents from ticks are via "Tick-bait boxes", "Tick-tubes" with acaricide-treated (Permethrin) cotton nest-material, "LymeShield" with Bacterin-spray-coated pellets which vaccinate mice when ingested passing to parasitic-biting-ticks, against *Borrelia burgdorferi* and vector genetic editing of ticks.

Increased communication among disciplines has resulted in TBD educational prevention programs, advising techniques in avoiding tick-skin contact, correct tick-check removal, using appropriate washing/drying instructions for outdoor clothing, avoiding high risk locations and wearing white clothing to highlight questing ticks.

Humans might also benefit from computer distribution modeling techniques (ECFXPERT, MaxEnt), predicting tick density/seasonality, aiming to predict the prevalence of tick-bites. The success of these models relies on information about local species (identification via macro photography, entomological/ethological studies), physiological features/gender, and the life- cycle of arachnids which all influence tick host-seeking behaviours (ambushing/walking up/climbing/clenching), and bite incidence.

This literature review finds that the multitude of variables and interacting factors involved in TBD, their complexity and dynamism, indicate that tick-borne transmission systems require a "One Welfare" approach to facilitate practitioners from differing disciplines in working together and collaborating to develop evolving TBD-prevention strategies which improve animal welfare, human well-being, biodiversity, and the ecosystems health.



# ONE WELFARE WORLD CONFERENCE

ONE WELFARE CIC PRESENTS

10-11 OCTOBER 2023 BURGOS, SPAIN



## A One Welfare approach to tick bite prevention: The impact of the environment on human and animal health



Meers L.<sup>1</sup>, Walsh E.A.<sup>2</sup>, Samuels W.E.<sup>3</sup>, Claus A.<sup>1</sup>, Duarte-Gan C.<sup>4</sup>, Contalbrigo L.<sup>5</sup>, Stevens V.A.<sup>1</sup>, Laufer S.J.<sup>1</sup>,  
Dekeyrel C.<sup>1</sup>, Berckmans D.<sup>6</sup>, Normando S.<sup>1</sup>

<sup>1</sup>BIAAT Foundation, <sup>2</sup>Cork Pet Behaviour Centre, <sup>3</sup>Hunter College, School of Nursing, <sup>4</sup>University of Jaén, Department of Psychology, <sup>5</sup>National Reference Centre for Animal Assisted Interventions, <sup>6</sup>Katholieke Universiteit Leuven, Dier en Mens, <sup>7</sup>University of Padua, Department of Animal Medicine, Production and Health

### Introduction

- Climate change => ↑ ticks questing in previously non-endemic areas; almost year-round
- Zoonotic tick-borne diseases (TBD) pose increasing threat to human/animal health
- **Aim:** to study links between practitioners working on environmental-related tick-bite prevention strategies from a "One Welfare perspective"
  - Search string (google scholar) - "tick-bite prevention" AND environment OR "One Welfare"

### Ticks

- Hard/soft-bodied arachnids with diverse host-seeking behaviours dependent on species/gender
  - ✓ Facilitated by climate change; ↑ humidity, ↑ temperature, shade to live and breed
  - ✓ Are vulnerable; generalist feeders
  - ✓ Depend on healthy hosts, partners & parents not to catch/spread TBD
  - ✓ **Prevention:** vaccination via hosts mice/rats (e.g. bacterin-spray-coated pellets) might protect against TBD



### Human

- **Health risk**
  - ✓ Increasing risk of TBD when in contact with nature, animals/wildlife
- **Welfare risk:** biofilia versus biophobia
  - ✓ Fear of TBD may prevent the joy of contact with nature & animals
- **Prevention:**
  - ✓ Vaccination
  - ✓ Permethrin-treated clothing, topical skin tick-repellents when in/near tick-infested areas
  - ✓ Educational prevention programs advising correct tick-check removal etc.
  - ✓ Computer distribution modeling techniques (ECFXPERT, MaxEnt), predicting tick density/seasonality



### Ecosystem

- **Health risk**
  - ✓ Climate change increases risk for zoonosis
  - ✓ Repellents can cause environmental pollution, food contamination and chemical resistance; essential oils: toxicity, possible irritant
- **Prevention:** pathogenic fungi, entomopathogenic nematodes, tick/larvae eating insects may help restore balance
  - ✓ landscape architects/gardeners could create gardens with 5-foot wood-chip paths separating grass/playgrounds from bushes/trees, short grass, without leaf litter/wood-piles, wild bird feeders located distant from housing, and properties wildlife fenced to lower risk of spread between species



### Pets and (farm) animals

- **Health risk**
  - ✓ Increasing risk of TBD when walking/playing grazing, in long grass near undergrowth/tree trunks/stones
- **Prevention:**
  - ✓ Vaccination, Permethrin-treated clothing, topical skin tick-repellents when in/near tick-infested areas,
  - ✓ Protecting wild rodents with "Tick-bait boxes", "Tick-tubes" or tick catching (dry ice trapping, dragging, flagging, sweep netting, and CO<sub>2</sub>-dragging/flagging)



### Conclusion of our literature review

- ✓ Human, animal and ecosystems health are interdependent in TBD transmission
- ✓ Tick-repellent products can cause environmental safety/pollution concerns, food contamination, and resistance to chemical
- ✓ The complexity, dynamism, interaction, and multitude of variables involved in TBD, demand a "One Health/Welfare" approach



**ORGANISED BY**



[www.onewelfareworld.org](http://www.onewelfareworld.org)



onewelfare

CIC No: 11376147

## SPONSORS



## COLLABORATORS



Ayuntamiento  
de Burgos



Colegio Oficial de  
Veterinarios de Burgos



OFFICE FOR AGRICULTURE, FISHERIES,  
AND FOOD  
EMBASSY OF SPAIN  
LONDON



EMBAJADA  
DE ESPAÑA  
EN LONDRES



2BOLD



alsa



University of  
Nottingham  
UK | CHINA | MALAYSIA