OIE Collaborating Centres Reports Activities

Activities in 2021

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Title of collaborating centre:	Animal welfare
Address of Collaborating Centre:	P.O. Box 234 SE - 532 23 Skara SWEDEN IZSAM Campo Boario Teramo, ITALY
Tel.:	+46-511 67107 - +39
Fax:	
E-mail address:	Lotta.Berg@slu.se
Website:	https://www.slu.se/en/Collaborative-Centres-and-Projects/swedish-centre-for-animal-welfare-scaw/
Name of Director of Institute (Responsible Official):	Lotta Berg
Name (including Title and Position) of Head of the Collaborating Centre (formally OIE Contact Point):	Lotta Berg, Professor at the Department of Animal Environment and Health; Division of Environment, Care and Herd Health, Swedish University for Agricultural Sciences Director of the Swedish Centre for Animal Welfare
Name of writer:	Birgitta Staaf Larsson Daniela Morelli (IZSAM)

ToR: To provide services to the OIE, in particular within the region, in the designated specialty, in support of the implementation of OIE policies and, where required, seek for collaboration with OIE Reference Laboratories

ToR: To identify and maintain existing expertise, in particular within its region

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by the OIE

Animal welfare	
Title of activity	**Scope**
Steering Committee of the OIE CC Consortium IZSAM/SLU on 9 April 2021	Meeting of the Steering Committee of the OIE CC Consortium IZSAM/SLU
16th meeting of the Steering Group of the OIE Platform on animal welfare for Europe 15 April 2021	Participation in the OIE Platform on animal welfare for Europe
OIE Animal Welfare Forum "Animal Welfare and the UN Sustainable Development Goals" Virtual meeting 26 and 28 April, and 4 May 2021	Exchange of views and experiences in how animal welfare can play a role in achieving the UN SDGs.
OIE CC Steering Committee 15 October 2021	Meeting of the Steering Committee of the OIE CC Consortium IZSAM/SLU
17th meeting of the OIE Platform Steering Group (SG17) 18 October 2021	Participation in the OIE Platform on animal welfare for Europe
OIE Platform on Animal Welfare stakeholders consultation meeting - 22 October 2021	Participation in the stakeholders meeting
OIE Twinning project on animal welfare between IZSAM and the Ecole Nationale de Médecine Vétérinaire, Sidi Thabet, Tunisia (ENMV), duration 36 months)	Twinning project with Tunisia: In February 2021, an online kickoff meeting has been carried out with the participation of Representatives of the Parent Institute (IZSAM), the Candidate Institute (ENMV), the DGSV of the Tunisian Ministry of Agriculture, the DGSAF of the Italian Ministry of Health, the OIE, and of Relevant Stakeholders. In November 2021 an online three-day course on "general principles on animal welfare", with particular reference to OIE standards, has been delivered to ENMV and DGSV representatives.
OIE Network of Animal Welfare Collaborating Centres 24 November 2021	Establish and maintain an OIE Network of Animal Welfare Collaborating Centres
OIE CC Steering Committee 10 December 2021	Meeting of the Steering Committee of the OIE CC Consortium IZSAM/SLU
OIE proposal for the development of e-learning training on AW at slaughter 15 December 2021	Discussion about the development of e-learning training on AW at slaughter
Enhancing Research For Africa Network (ERFAN)AW sub group for the SADC region	To establish a network of animal welfare experts in the SADC area, directly connected to local governments and research institutions, in order to develop common research activities and draft a shared strategy, aiming at ensuring a more effective implementation of the OIE standards on animal welfare in these countries

EmVetNet Secretariat	The Secretariat has promoted and realized a thematic platform on Covid 19 animal welfare in order to promote information sharing among international experts on pandemic issues. 30 experts have contributed to the platform ontents. Maintenance of the web site https://emvetnet.izs.it/emvet/#/ has been carried out by IZSAM personnel. The Secretariat has promoted and coordinated technical meetings for the development of a questionnaire for the identification of a roster of experts in veterinary emergencies management.
Organisation and implementation of training activities on animal welfare on the farm, animal welfare at the time of killing of animals (at slaughterhouses and for disease control purposes) and animal welfare during transport under the "Better Training for Safer Food" initiative (2017-2023)	As in the first phase, also during the second phase (2020-2021), the attendance should be approximately 30 people per training session, with an estimated global number of 360 participants for the entire training programme that foresees 12 training course editions. Due to Covid19 Pandemic in 2021 four face to face events have been converted in virtual classrooms. For that scope pedagogical videos and relevant training materials have been designed. This activity involves also the following technical area: Animal Welfare.
SNAI, Social Network Analysis and innovative diagnostic methods for the control of animal movements and equine infectious diseases in Italy (2019-2023)	The project aims to develop both an epidemiological model sutable for horse networks and a web application in support of field control actions in National epidemic emergencies. A further goal of the projectis to assess the effectiveness of a diagnostic system composed by two different panels, one for DNA pathogens and the other for RNA pathogens, able to detect in a single analysis the causative agents of a specific clinical case, including the 6 primary pathogens defined in the project (Staphylococcus aureus, Haemophilus influenzae, Streptococcus pneumoniae, Moraxella catarrhalis, Mycoplasma pneumoniae e Chlamydophila pneumoniae). This intitiative is focusing also the assessment of the welfare of horses farmed not for meet production (sport, working and companion animals).
Multidisciplinar study on ritual slaughter: food safety, animal welfare, and socio-cultural aspects in the production and consumption of Halal and Kosher meat (THalaKos) Studio multidisciplinare sulle macellazioni rituali: sicurezza alimentare, benessere animale e aspetti socio-culturali nella produzione e nel consumo di carni Halal e Kosher (THalaKos) (2020-2022)	This project aims to address relevant controversial issues in Jewish and Islamic slaughter in order to reach the goal of implementing and adopt guidelines and mitigation strategies to influence competent authorities and stakeholders in improving microbiological hygiene and animal welfare during ritual slaughter in Italy, also taking into account consumers perception and demand. This activity involved also the following technical area: animal health, animal welfare, food safety.
LEO: Livestock Environment Opendata – Piattaforma Opendata per la Zootecnia (2019-2023)	The project aims to create a database containing both already available and new data on environment, animal health and welfare, climate, animal production and reproduction. The general scope is to improve knowledge in order to face the future challenges of animal production in relation to sustainability, climate change, biodiversity safety and protection. This activity involved also the following technical area: animal health, animal welfare, ICT.

Development of a self-assessment and monitoring platform on the OIE standards: SAM TOOL 2.0 project	The general objective of this Project is to develop a web-based self-assessment and monitoring methodology to assist countries in making progress on the agreed vision of full compliance with the OIE standards on stray dog population control in Europe. The SAM 2.0 platform represents a permanent and evolving IT data management tool at low risk of obsolescence, with a low-cost localisation of the questionnaire and the reports (including right to left languages). Being easily scalable to other OIE standards with minor efforts and investments, it can be considered a cornerstone of a topic-based observatory.
Best Practices for the Welfare of Dairy Calves and Cows – CARE4DAIRY	CARE4DAIRY aims to identify and disseminate best practices to increase the welfare of dairy calves, heifers and cows and end-of-career animals. The project adopts a farmer-centred approach with strong involvement of other stakeholders (e.g. as member of the Advisory Board and Reviewing CARE4DAIRY aims to identify and disseminate best practices to increase the welfare of dairy calves, heifers and cows and end-of-career animals. The project adopts a farmer-centred approach with strong involvement of other stakeholders (e.g. as member of the Advisory Board and Reviewing Committee). The consortium consists of five partners from an animal welfare science background, who are involved in EURCAW-Ruminants and Equines, and two partners specialised in applied research and bridging sciences with practices on animal welfare. The expertise of the Project Team will be complemented with external Subject Matter Experts where necessary. The main deliverables of CARE4DAIRY are four best practice guidelines (for dairy calves, heifers and cows and end-of-career animals) together with a report addressing the dissemination strategy pillars for success.
Application of artificial intelligence in the detection of poor welfare / discomfort conditions in the breeding stages and pre-slaughter of domestic animals Applicazione dell'Intelligenza artificiale nel rilievo di condizioni di scarso benessere/ malessere nelle fasi di allevamento e di premacellazione degli animali domestici (AppIA-Ben) (2021-2023)	The ultimate goal of the project is to adopt AI at all stages of the production chain to increase animal welfare, coherently with the UN 2030 Agenda for Sustainable Development that incorporates animal protection as a priority, according to the principles of the "One Health" vision and approach. This activity involved also the following technical area: animal health, animal welfare, statistics.
Identification of criteria, measures and risk indicators aimed at forecasting, preventing and mitigating the impact of non-epidemic emergencies on animal health and welfare within farms and animal facilities. (2020-2022)	The overall aim of this pilot project is to develop models and methods to estimate the impact of an earthquake on animal health and welfare and therefore quantifying the relevant needs in terms of resources to allocate. Specific objectives will be: i) to identify and assess all relevant animal health and welfare hazards and actions/interventions to be taken after an earthquake in the field, whose responsibility lies with the Veterinary Services (VS) for managing the aspects related to animal health, animal welfare and public health; ii) to identify relevant indicators/parameters related to animal health, animal welfare and public health, able to firstly detect and secondly quantify specific hazards (identified in the previous step) requiring the VS intervention; iii) to assign values to these indicators/parameters; iv) to build a seismic risk simulation model v) to assess the model's result with the identification of those indicators more affecting the demand of veterinary resources. This activity involved also the following technical area: animal health, animal welfare.

ToR : To propose or develop methods and procedures that facilitate harmonisation of international standards and guidelines applicable to the designated specialty

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the surveillance and control of animal diseases, food safety or animal welfare

Proposal title	Scope/Content	Applicable area
Twinning project with Tunisia	Webinar on "Animal Welfare principles applied to different farm animal production systems and veterinary public health sectors" that was accomplished on 24-25-26 November in the framework of the OIE twinning with Tunisia	☐Surveillance and control of animal diseases ☐Food safety ☒Animal welfare
e-learning training on AW at slaughter	Development of e-learning training on AW at slaughter	☐Surveillance and control of animal diseases ☐Food safety ☒Animal welfare
OIE Network of Animal Welfare Collaborating Centres	To establish and maintain an OIE Network of Animal Welfare Collaborating Centres	☐Surveillance and control of animal diseases ☐Food safety ☒Animal welfare
SAM Tool 2.0 project	Stray dog population control project	☐Surveillance and control of animal diseases ☐Food safety ☒Animal welfare
FAO Good Emergency Management Practice guide (GEMP)	Good emergency management practice guide (GEMP) to assist countries in the development, implementation and monitoring of their own sustainable emergency management systems for animal health, published in July 2021	☒Surveillance and control of animal diseases ☐Food safety ☒Animal welfare
Project proposal to OIE: Actions aimed to the control of the freeroaming dogs population in Tunisia, with particular reference to animal health and welfare (Joint proposal ENMV-IZSAM)	Carry out actions to lay out the fundamentals to reduce the number of uncontrolled roaming dogs in Tunisia and improve the health of this population, with particular reference to rabies and other zoonotic diseases	☒Surveillance and control of animal diseases ☐Food safety ☒Animal welfare

OFDA Office of U.S. Foreign Disaster Assistance "Strengthen regional and global coordination of animal health emergencies of international concern"	The OECD-FAO report:"Building the resilience of Italy's agricultural sector to drought" has been published in 2021. The report is a product of the project:."Building Agricultural Resilience to Natural Hazard-Induced Disasters: Insights from Country Case Studies"	☒Surveillance and control of animal diseases ☐Food safety ☒Animal welfare
European Reference Centre for the welfare of ruminants and equines (EURCAW Ruminants & Equines)	In May 2021, the Commission designated a third EU Reference Centre for animal welfare focusing on the welfare of ruminants and equines (Commission Implementing Decision (EU) 2021/755). The tasks of this centre include supporting the Commission and the Member States in the application of animal welfare requirements for ruminants and equines, carrying out scientific and technical studies, as well as conducting training courses and disseminating research findings and information on technical innovations. The centre is constituted of a consortium led by the Swedish University of Agricultural Sciences and the Swedish Centre for Animal Welfare (Sweden), and also composed of the University of Natural Resources and Life Sciences (Austria), the Ellinikos Georgikos Organismos-Dimitra/Veterinary Research Institute (Greece), the National Institute for Agriculture, Food, and Environment (France), the University College Dublin (Ireland) and the Instituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale" (Italy). IZSAM is participating in all the activities of the Centre and is leading the training activities.	☐Surveillance and control of animal diseases ☐Food safety ☒Animal welfare
ICRAD: International Coordination of Research on infectious animal diseases	ICRAD is a new ERA-Net Cofund Action under Horizon 2020 that will build upon the achievements of the ERA-NET EMIDA (Emerging and Major Infectious Diseases of Animals) and the ERA-NET ANIHWA (Animal Health and Welfare). This initiative aims at supporting cross-cutting research to improve public health, animal health and welfare, with associated benefits towards the environment and the economy; connecting research partners with different but complementary scientific and technological expertise. The partnership between industrial and academic researchers improves and accelerates the development of technological solutions for the benefit of animal health and welfare. Research and innovation co-funded through ICRAD would seek concerted approach towards the development of novel and improved instruments to address and control infectious diseases, particularly regarding novel detection, intervention and prevention strategies to: increase preparedness and ability to respond to emerging and endemic livestock threats; contribute to the reduction of antimicrobial and antiparasitic use in livestock and to minimising the development of resistance for the benefit of animal and public health; contribute to animal welfare by better prevention of diseases and renewed animal management and farming systems; on a larger scale, contribute to food security and competitive and sustainable livestock systems.	☐Surveillance and control of animal diseases ☐Food safety ☒Animal welfare

Call for tenders SANTE/2021/OP/0005 Pilot project on the welfare of dairy cattle, including measures to protect unweaned dairy calves and end-of-career animals	The Directorate-General for Health and Food Safety (DG SANTE) designated IZSAM, in consortium with universities and research centres of different European countries, and two private organisation to develop consensus-based best practice guidelines for animal welfare in the dairy sector.	☐Surveillance and control of animal diseases ☐Food safety ☒Animal welfare

ToR: To establish and maintain a network with other OIE Collaborating Centres designated for the same specialty, and should the need arise, with Collaborating Centres in other disciplines

ToR: To carry out and/or coordinate scientific and technical studies in collaboration with other centres, laboratories or organisations

3. Did your Collaborating Centre maintain a network with other OIE Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
OIE Animal Welfare Forum 'Animal Welfare and the UN Sustainable Development Goals'	Virtual meeting 26 and 28 April, and 4 May 2021	☒Africa ☒Americas ☒Asia and Pacific ☒Europe ☒Middle East	Exchange of views and experiences in how animal welfare could play a role in achieving the UN SDGs.
OIE CC on Laboratory Animal Welfare and Science, Washington, USA, OIE CC on Animal Welfare Science and Bioethical Analysis, AUS/NZ, OIE CC on Animal Welfare and Livestock Production Systems, Latin America	Zoom 24 November 2021	☐Africa ☒Americas ☒Asia and Pacific ☒Europe ☐Middle East	Establish and maintain an OIE Network of Animal Welfare Collaborating Centres
Ecole Nationale de Médecine Vétérinaire, Sidi Thabet, Tunisia (ENMV)	Tunisia	☒Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East	OIE Twinning Project on Animal Welfare between IZSAM as OIE Collaborating Centre for Animal Welfare and the École Nationale de Médecine Vétérinaire de Sidi Thabet
European Reference Centre for the Welfare of ruminants and equines	Sweden, Austria, France, Greece, Ireland, Italy	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East	The objective of the EURCAW for ruminants and equines is to provide the EU Commission and EU Member States with support to knowledge building, implementation and enforcement of relevant legislation and capacity building

Enhancing Research For Africa Network (ERFAN)	Italy/SADC	☒Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East	To strenghten the network of the OIE FP for animal welfare from SADC countries (South Africa, Namibia, Botswana, Zimbabwe, Zambia, Mozambique, Lesotho, eSwatini) built in the framework of ERFAN Sub-group for Animal Welfare
Federation of Veterinarians of Europe (FVE)	Belgium	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East	To promote new initiatives in the framework of the OIE EmVetNet activities on animal welfare
American Veterinary Medical Association (AVMA)	USA	☐Africa ☒Americas ☐Asia and Pacific ☐Europe ☐Middle East	To promote new initiatives in the framework of the OIE EmVetNet activities on animal welfare
International Coalition for Animal Welfare (ICFAW)	UK	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East	To promote new initiatives in the framework of the OIE EmVetNet activities on animal welfare

4. Did your Collaborating Centre maintain a network with other OIE Collaborating Centres, Reference laboratories, or organisations <u>in other disciplines</u>, to coordinate scientific and technical studies?

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Reduction of the Risk of Disasters in Animal Health (CENSA)	Cuba	☐Africa ☒Americas ☐Asia and Pacific ☐Europe ☐Middle East	In the framework of the OIE network on veterinary emergencies
Biological Threat Reduction (IIAD)	USA	☐Africa ☒Americas ☐Asia and Pacific ☐Europe ☐Middle East	In the framework of the OIE network on veterinary emergencies

FAO Emergency Management Centre for Animal Health	Italy	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East	Steering Committee Emergency Management Centre for Animal Health (CMC-AH) - FAO - OFDA Office of U.S. Foreign Disaster Assistance project on "Strengthen regional and global coordination of animal health emergencies of international concern"

ToR: To place expert consultants at the disposal of the OIE.

5. Did your Collaborating Centre place expert consultants at the disposal of the OIE?

Yes

Name of expert	Kind of consultancy	Subject
Luigi Iannetti, Birgitta Staaf Lars, Silvia D'Albenzio, Daniela Morelli, Michele Podaliri, Francesco Cerasoli	Experts	Twinning project with Tunisia on Animal Welfare principles applied to different farm animals
Luigi Iannetti, Michele Podaliri Vulpiani	Experts	ERFAN Sub-group for Animal Welfare for the SADC region
Francesco Cerasoli (IZSAM expert), Ouajdi Souilem, Asma Lagzhab (ENMV, OIE partners in OIE twinning)	Experts	OIE - 1st multi-regional Whole Journey Scenario workshop on long-distance transport by land and sea between Europe and the Middle East (23 June 2021 – online event)
Daniela Morelli	Consultancy as member of the platform	OIE Platform on animal welfare for Europe - 3rd stray dog self-assessment round and SDB4 preliminary activities, 29 -30 November 2021 (Teleconference)
Paolo Dalla Villa	Expert	ad hoc Group on COVID-19 human-animal interface. "Lessons identified from before and during the pandemic: How the OIE can support Veterinary Services to achieve One Health resilience",
Maria Luisa Danzetta, Silvia D'Albenzio, Daniela Morelli	Consultancy as Secretariat of the OIE CC Network on Veterinary Emergencies (EmVetNet)	-Revisit EmVetNet" 29 September 2021; -Revisit EmVetNet" 27 October 2021.

ToR: To provide, within the designated specialty, scientific and technical training to personnel from OIE Member Countries

6. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by the OIE, to personnel from OIE Member Countries?

Yes
a) Technical visits: 0
b) Seminars: 3
c) Hands-on training courses: 8
d) Internships (>1 month):   1

Type of technical training provided (a, b, c or d)	Content	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
b	OIE Animal Welfare Forum 'Animal Welfare and the UN Sustainable Development Goals'	58 countries globally	144
b	Animal Welfare principles applied to different farm animal production systems and veterinary public health sectors	Tunisia	18
c	Applying OIE Animal Welfare Standards in Africa. Online course (from 1 March to 2 July 2021), organized in collaboration between IZSAM (OIE cc for Animal Welfare) and University of Pretoria under the umbrella of ERFAN (Enhancing Research for Africa Network)	8 SADC countries: South Africa, Namibia, Botswana, Zambia, Zimbabwe, eSwatini, Lesotho, Mozambique	22
c	VS's Contingency Plans in the Balkans – Table Top Exercise (TTX)	Albania, Bosnia Herzegovina, Bulgaria, Croazia, Greece, Kosovo Montenegro, Macedonia, Romania, Serbia	22
c	"The impact of seismic events on animal health and welfare: Knowledge Elicitation Activities" in the framework of the current research project on Identification of criteria, measures and risk indicators aimed at forecasting, preventing and mitigating the impact of non-epidemic emergencies on health and welfare in farms and facilities for animals, 3-4 November 2021	Italy	32
c	BTSF course on Animal Welfare in pig production – Session I, 13-15 September 2021	European countries	24
c	BTSF course on Animal Welfare in poultry production – Session I, 13-15 October 2021	European countries	29
c	BTSF course on Animal Welfare in pig production – Session II, 16-18 November 2021	European countries	26
c	BTSF course on Animal Welfare in poultry production – Session II, 29 November – 1 December 2021	European countries	26
d	Erasmus internship on Animal Welfare Animal Experimentation, 31 May-30 July 2021	France	1

c	Operation and use of CLASSYFARM Molise Region, Webinar, 19 November 2021	Italy	13
b	Towards the new equine I&R system: presentation of the new regulatory provisions and the new application in BDN, webinar, 6 December 2021	Italy	970

ToR: To organise and participate in scientific meetings and other activities on behalf of the OIE

7. Did your Collaborating Centre organise or participate in the organisation of scientific meetings on behalf of the OIE?

Yes

National/International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	OIE Animal Welfare Forum 'Animal Welfare and the UN Sustainable Development Goals'	OIE and SCAW (The Swedish Centre for Animal Welfare)	26 and 28 April, and 4 May 2021	Virtual meeting	144
International	ERFAN WGs Round Table	ERFAN	08/07/2021	Online	40
International	Online kickoff meeting of OIE Twinning Project between IZSAM (Italy) and ENMV (Tunisia)	ENMV (Tunisia)	18-19/02/2021	Online	40
International	First ERFAN general meeting	ERFAN	4/10/2021	Rome	40
International	ERFAN WGs meeting	ERFAN	13/10/2021	Online	20

ToR: To collect, process, analyse, publish and disseminate data and information relevant to the designated specialty

8. Publication and dissemination of any information within the remit of the mandate given by the OIE that may be useful to Member Countries of the OIE

a) Articles published in peer-reviewed journals: 13
Staaf Larsson, B., Petersson, E., Stéen, M. and Hultgren, J. 2020. Visual assessment of body condition and skin soiling in cattle by professionals and undergraduate students using photo slides Acta Acta Agriculturae

Scandinavica, Section A — Animal Science DOI: 10.1080/09064702.2020.1849380

Ahmed, H., Alvåsen, K., Berg, C., Hansson, H.; Hultgren, J., Röcklinsberg, H.; Emanuelson, U. Assessing Animal Welfare and Farm Profitability in Cow-Calf Operations with Stochastic Partial Budgeting. Animals 2021, 11, 382. https:// doi.org/10.3390/ani11020382

Lundmark Hedman, F., Berg, C., Steen, M., 2021. Whose interest matters when regulating animal welfare? A Swedish Case study. Proceedings EurSafe Conference, Section 4 Animal ethics, veterinary ethics, and food security, abstract #43, p 283-288. www.wageningenacademic.com/doi/epdf/10.3920/978-90-8686-915-2

Lundmark Hedman F., Veggeland, F., Vågsholm, I., Berg, C., 2021. Managing Animal Welfare in Food Governance in Norway and Sweden: Challenges in Implementation and Coordination. Animals, 11, 1899. https://doi.org/10.3390/ani11071899

Lundmark Hedman, F., Berg, C., Stéen, M., 2021. Thirty years of changes and the current state of Swedish animal welfare legislation. Animals, 2021, 11, 2901, https://doi.org/10.3390/ani11102901

Lindsjö, J., Berg, C., Olsson, U., Törnqvist, E (2021). The 3Rs in animal welfare bodies at Swedish Universities – knowledge, attitudes, implementation. ALTEX - alternatives to animal experimentation, 38(3), 477-489. https://doi.org/10.14573/altex.1911141

M Podaliri Vulpiani, L Iannetti, S Romagnoli, G Cotturone, G Vincifori (2021). Antibiotic-free and conventional farming of broiler chicken for meat production: impact on animal welfare of different managing systems. European Journal of Public Health, 31, Supplement 3, ckab165.337, https://doi.org/10.1093/eurpub/ckab165.337

Iannetti, L.; Romagnoli, S.; Cotturone, G.; Podaliri Vulpiani, M. (2021). Animal welfare assessment in antibiotic-free and conventional broiler chicken. Animals 11, 2822. https://doi.org/10.3390/ani11102822

De Ruyver C., Abatih E., Dalla Villa P., Peeters E., Clements J., Dufau A., 2021. Public opinions on seven different stray cat population management scenarios in Flanders, Belgium. Research in Veterinary Science 136 (2021) 209–219.

Iannino F., Bellucci F., Finocchi Mahne E., Dalla Villa P., Ruggieri E., Salucci S., Berteselli G., Rapagnà C., Danzetta M.L., Santucci U., 2021. Il canile rifugio, procedure e protocolli. Vet Ita.

Albonetti P.A., Milia L., Trentini R., De Massis F., 2021. Le popolazioni di storni in ambito urbano: problematiche e metodi di controllo. Vet Ita.

Berteselli G., Rapagnà C., Salini R., Badagliacca P., Bellucci F., Iannino F., Dalla Villa P., 2021. A Pilot Study to Develop an Assessment Tool for Dogs Undergoing Trap-Neuter-Release (TNR) in Italy. An Overview on the National Implementation of TNR Programmes. Animals 2021, 11(11), 3107.

Merola C., Bisegna A., Angelozzi G., Conte A., Abete M.C., Stella C., Pederiva S., Faggio C., Riganelli N., Perugini M. Study of Heavy Metals Pollution and Vitellogenin Levels in Brown Trout (Salmo trutta trutta). (2021). Wild Fish Populations. Appl. Sci. 2021, 11, 4965. https://doi.org/10.3390/app11114965

b) International conferences: 2
NordCAW conference Improvements of dairy cattle welfare - development of further sustainable agriculture practices 30 September 2021

8th International Conference on the Assessment of Animal Welfare at Farm and Group Level. Cork, Ireland (digital, Aug 16-19 2021.

c) National conferences: 3
One Welfare - we are all connected, 10 June 2021
Welfare of social service dogs, 24 November 2021
Giornata di studio del Centro di referenza nazionale per l'Igiene urbana veterinaria e le Emergenze non epidemiche (IUVENE) dell'IZSAM. 12 October 2021

d) Other
(Provide website address or link to appropriate information):   0

9. Additional comments regarding your report: