

Ss. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE
FACULTY OF VETERINARY MEDICINE - SKOPJE



BOOK OF ABSTRACTS

*9th International Scientific Meeting
Days of Veterinary Medicine 2022*

22 - 25 September 2022
R. of North Macedonia

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FACULTY OF VETERINARY MEDICINE - SKOPJE



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9th International Scientific Meeting
Days of Veterinary Medicine 2022

Skopje, 2022
R. N. Macedonia

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DAYS OF VETERINARY MEDICINE 2022**

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Dear colleagues,

I am pleased to welcome you to the the 9th International Scientific Meeting “Days of veterinary medicine – 2022” which will be held in Ohrid, R. of North Macedonia, from 22 to 25 September, 2022.

The event is attractive for all researchers, veterinary practitioners, official veterinarians, professors, PhD and post-doctoral students, offering an excellent opportunity to discuss the challenges and ongoing issues in the veterinary education and science.

As a previous, this year Days of veterinary medicine – 2022 retain the traditional popular format, including a number of invited plenary lectures, short presentations and poster presentations for animal health, animal welfare and reproduction, as well as public health and food safety.

It will also provide three workshops for practitioners and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of animal health, reproduction and clinical sciences.

The program for the meetings required dedicated effort of many people, in order to retain its usual popular format, including a number of plenary lectures, short presentations, student papers and poster presentations.

In this occasion I express my gratitude to the members of the International Scientific Committee and Local Committee for their diligent and professional reviewing in electing 104 papers from authors of more than 12 countries to be presented in 10 scientific sessions followed by the oral and poster sessions, 3 clinical workshops and 1 laboratory workshop.

On the behalf of the Organizing Committee, I wish you an enjoyable and pleasant stay in R. N. Macedonia.

I am look forward to welcoming you!

Prof. Dr. Lazo Pendovski,



on behalf of the Organizing Committee of
the Days of veterinary medicine – 2022

SCIENTIFIC PROGRAM
9th INTERNATIONAL SCIENTIFIC MEETING
DAYS OF VETERINARY MEDICINE – 2022

Thursday (22.09.2022)		
16:00 – 18:30	Arrival of participants and Registration	
19:00 – 19:30	Opening ceremony and welcome Prof. d-r Lazo Pendovski, Dean at the Faculty of Veterinary Medicine – Skopje, UKIM Prof. d-r Nikola Jankulovski, Rector at the Ss. Cyril and Methodius University in Skopje Mr. Ljupcho Nikolovski - Minister of Agriculture, Forestry and Water Economy Dr. Nikolche Babovski, DVM, Director at the Food and Veterinary Agency Dr. Tomislav Nikolovski, DVM, Director of the Macedonian Veterinary Chamber	
	Invited Lecture: <i>New skills and knowledge in veterinary profession</i> Prof. dr. sc. Alen Slavica- Faculty of veterinary medicine, University of Zagreb	
20:00	Welcome Cocktail	
Friday (23.09.2022)		
09:00 – 09:30	Plenary lecture I: <i>Biosecurity in animal production, what, when and how?</i> Prof. dr. Jeroen Dewulf, Faculty of Veterinary Medicine, Ghent University, Belgium (Lecture room 1)	
09:30 – 11:00	Session I: Farm Biosecurity and Environment <i>Chairs: Jeroen Dewulf and Miroslav Kjosevski</i> (Lecture room 1, parallel session) <i>Biosecurity assessment and critical improvement points of dairy cattle farms -</i> Miroslav KJosevski*, Vanja Kondratenko, Branko Angjelovski, Aleksandar Janevski, Milenko Simovikj, Igor Djadjovski, Aleksandar Dodovski, Kiril Krstevski <i>Comparison of the two different protocols for biosecurity assessment in commercial pig farms -</i> Branko Angjelovski*, Vanja Kondratenko, Milenko Simovikj, Jovan Bojkovski, Miroslav KJosevski <i>Assessment of biosecurity measures on the broiler farms in the region of Belgarde city -</i> Jelena Maletic*, Ljiljana Spalević, Vesna Milićević, Bojan Milovanović, Branislav Kureljušić <i>Biomonitoring of wastewaters from slaughterhouses in Macedonia</i> Marija Ratkova Manovska, Gordana Ilievska, Snezana Dimitrovska, Ena Dobrik, Miroslav KJosevski, Biljana Stojanovska Dimzoska, Katerina Blagoevska* <i>The impact of small hydro power plans on trout fish farms in North Macedonia -</i> Aleksandar Trajchovski*, Misho Hristovski	Session II: Basic sciences and Veterinary education <i>Chairs: Rizah Avdić and Martin Nikolovski</i> (Lecture room 2, parallel session) <i>Renal microvasculature in the chicken -</i> Nedžad Hadžimerović*, Rizah Avdić, Faruk Tandir <i>Forming new collection of pharyngeal teeth from cyprinid fishes collected in Croatia and neighboring countries -</i> Denis Leiner*, Srebrenka Nejedli, Snježana Čurković, Damir Mihelić <i>Radiological diagnosis of an ectopic ureter in a poodle – Case report -</i> Boris Dimitrievski*, Aleksandar Janevski, Marko Mitrović, Dine Mitrov <i>Suppression effects of excessively expressed gene bcl-2 in cell lines of prostate cancer -</i> Igor Esmerov*, Nikola Adamov, Aleksandra Angelevska, Radmila Chrcheva, Ljupco Mickov, Ljupco Angelovski, Nikolaj Markov, Branko Atanasov <i>Digital veterinary education (devet) – an ERASMUS+ project for development/ creating of digital materials/tools in the education program of veterinary medicine (outcomes review) -</i> Igor Ulchar*, Ksenija Ilievska, Lazo Pendovski, Zehra Hajruali Musliu, Alen Slavica, Lada Radin, Marko Poletto, Danijela Kirovski, Ljubomir Jovanovic, Ivan Jovanovic

09:30 – 11:00	Initial findings of total air dust concentration in cattle and poultry houses in Macedonia- Ena Dobrikj*, Aleksandar Janevski, Aleksandar Dodovski, Miroslav Kjosevski	
11:00 – 11:30	Coffee break & Poster exhibition (Part 1)	
11:30 – 12:00	Plenary lecture II: Antimicrobial resistance (AMR) problems in companion animals Prof. dr. Peter Damborg, University of Copenhagen, Denmark (Lecture room 1)	
12:00 – 13:30	Session III: Antimicrobial resistance <i>Chairs: Peter Damborg and Iskra Cvetkovikj</i> (Lecture room 1, parallel session)	Session IV: Animal Welfare and Behaviour <i>Chairs: Vlatko Ilieski</i> (Lecture room 2, parallel session)
	Antimicrobial resistance in staphylococci isolated from dogs in the Republic of North Macedonia - Iskra Cvetkovikj*, Ivana Arsovska, Marija Ratkova Manovska, Mirko Prodanov, Ljubica Rashikj, Zagorka Popova, Igor Djadjovski, Aleksandar Cvetkovikj	Ultrasound – method to assess keel bone fractures in laying hens - Dimitar Bozinovski*, Lazo Pendovski, Miroslav Kjosevski, Martin Nikolovski, Dimitar Terzievski, Vlatko Ilieski
	The occurrence of blaCTX-M, blaSHV, blaTEM genes in extended-spectrum β-lactamase producing commensal E.coli isolates from dairy farms in the municipality of Debar - Maksud Kerluku*, Marija Ratkova Manovska, Gordana Ilievska, Dean Jankuloski, Katerina Blagoevska	Stray dog population size trend in the city of Skopje between 2010 and 2020 - Dimitar Terzievski*, Miroslav Kjosevski, Dimitar Bozinovski, Vlatko Ilieski
	Antimicrobial susceptibility of Trueperella pyogenes isolates from various clinical specimens of animals - Dilek Öztürk, Sibel Yaman*	Recognition and assessment of pain in dogs after elective surgery in order to improve animal welfare - Dardan Pozhegu*
	Antimicrobial resistance in commensal Escherichia coli isolated from pigs' cecal samples at slaughter - Dean Jankuloski, Marija Ratkova Manovska, Katerina Blagoevska, Gordana Ilievska, Biljana Stojanovska Dimzoska, Mirko Prodanov, Ljupco Angelovski*, Sandra Mojsova, Snezana Dimitrovska	Welfare assessment of pigs in the time of slaughter - stunning quality as a welfare indicator - Emilija Murdjeva*, Branko Angelovski, Mirko Prodanov, Miroslav Kjosevski
	Veterinarian's standpoints regarding antimicrobial stewardship in Serbia- Zorana Kovačević*, Mihajlo Erdeljan, Ivan Stančić, Dragana Tomanić, Zorana Ružić, Ivan Galić, Romel Veleu	Welfare assessment of sport horses in stables in Macedonia - Kristina Antovska*, Lazo Pendovski, Vlatko Ilieski, Miroslav Kjosevski
		Survey on recognition of problems of locomotion system in horses in Macedonia - Marija Solakova*, Elena Atanaskova Petrov, Miroslav Kjosevski, Ksenija Ilievska

13:30 – 14:30	Lunch
14:30 – 15:00	Plenary lecture III: <i>The Practical Application of Regenerative Medicine in Canine Musculoskeletal Conditions</i> Dr Russell Chandler BVSc CertSAO MSc(OrthoEng) MRCVS, Small Animal Orthopaedics Alphavet Referrals Newport, Wales, UK (Lecture room 1)
15:00 – 15:30	Plenary lecture IV: <i>Intervertebral disc disease – a marked road or a jungle?</i> Prof. dr. sc. Boris Pirkich, Faculty of veterinary medicine, University of Zagreb, Croatia (Lecture room 1)
15:30 – 16:00	Coffee break & Poster exhibition (Part 2)
16:00 – 17:30	Session V: Veterinary Clinical Medicine <i>Chairs: Russell Chandler and Ksenija Ilievska</i> (Lecture room 1) <i>Topical application of homologous serum for treatment of corneal ulcer in dogs</i> - Ksenija Ilievska*, Elena Atanaskova Petrov, Filip Trojachanec, Jane Vlahov, Plamen Trojachanec <i>Disease-stage related therapeutic response of mesenchymal stromal cells after intra-articular delivery in a mouse osteoarthritic joint</i> - Ana Ivanovska*, Patrizio Mancuso, Conor Hennessy, Swarna Raman, Steven McLoughlin, Jamie Reilly, Frank Barry, Mary Murphy <i>Mesenchymal stromal cells lyo-secretome: preliminary clinical application in dogs and horses with naturally occurring osteoarthritis</i> - Priscilla Berni*, Michela Mocchi, Virna Conti, Silvia Dotti, Dario Di Silvestre, Riccardo Villa, Roberto Ramoni, Giulia Passignani, Francesca Brambilla, Maurizio Del Bue, Gianpaolo Squassino, Laura Catenacci, Milena Sorrenti, Lorena Segale, Elia Bari, Pierluigi Mauri, Sara Perteghella, Maria Luisa Torre, Stefano Grolli <i>Beneficial effect of Acepromazine on incidences of adverse effects associated with morphine premedication in dogs</i> - Jane Vlahov*, Plamen Trojacanec, Todor Novakov, Ksenija Ilievska, Filip Trojacanec <i>Pre-emptive multimodal analgesia with Morphine-Medetomidine-Ketamine and Acepromazine- Morphine-Ketamine for ovariohysterectomy in dogs</i> - Todor Novakov*, Elena Atanaskova Petrov , Ksenija Ilievska, Irena Celeska, Jane Vlahov, Filip Trojacanec, Plamen Trojacanec <i>Trilostan titration dose treatment in dogs with terminal stage of hyperadrenocorticism complicated with comorbidity disease</i> - Irena Celeska*, Martin Nikolovski, Todor Novakov, Elena Atanaskova Petrov
17:30 – 20:30	Guided Ohrid City Tour
20:30 – 22:30	Dinner at National Macedonian Restaurant

Saturday (24.09.2022)		
09:00 – 09:30	Plenary lecture V: <i>Reproductive management in goat breeding</i> Prof. dr. sc. Juraj Grizelj, Faculty of veterinary medicine, University of Zagreb, Croatia (Lecture room 1, parallel session)	
09:30 – 10:30	Session VI: Animal Reproduction <i>Chairs: Juraj Grizelj and Toni Dovenski</i> (Lecture room 1, parallel session)	
	<i>The effect of homologous seminal plasma and reduced glutathione on thawed ram sperm viability and motility</i> - Martin Nikolovski*, Monika Dovenska, Dimitar Bozhinovski, Ljupcho Mickov, Branko Atanasov, Nikola Adamov, Toni Dovenski, Vladimir Petkov	
	<i>Kinetic parameters of chilled boar spermatozoa from different porcine breeds</i> - Ljupcho Mickov*, Branko Atanasov, Martin Nikolovski, Monika Dovenska, Igor Esmerov, Nikola Adamov, Vladimir Petkov, Toni Dovenski	Clinical Workshop 1: (Lecture room 3, parallel session)
	<i>Assessment of in vitro maturation rate of porcine oocytes selected by brilliant cresyl blue staining</i> - Monika Dovenska*, Ljupcho Mickov, Branko Atanasov, Vladimir Petkov, Martin Nikolovski, Toni Dovenski, Florina Popovska-Perchinikj	Orthopedic examination in dogs and cats Prof. dr. sc. Mario Kreszinger Faculty of veterinary medicine, University of Zagreb, Croatia
	<i>Introduction of the Ovsynch-8 protocol in small dairy farms in RNM to increase the reproductive efficiency from the first AI postpartum</i> - Kristina Dojchinovska*, Toni Dovenski, Ljupcho Mickov, M. Toshevska, Z. Mihaloski, I. Taleski, Lj. Andreevski, Branko Atanasov	
10:30 – 11:00	Coffee break & Poster exhibition (Part 3)	

11:00 – 11:30	Plenary lecture VI: <i>Update on activities of the European Reference Laboratory for Listeria monocytogenes: focus on typing area</i> Sandrine Te, French Agency for Food, Environmental and Occupational Health & Safety (ANSES) (Lecture room 1, parallel session)		Clinical Workshop 2: (Lecture room 3, parallel session) Emergency states in veterinary ophthalmology Prof. dr. sc. Boric Pirkić Faculty of veterinary medicine, University of Zagreb, Croatia
11:30 – 13:15	Session VII: Food Safety <i>Chairs: Sandrine Te and Katerina Blagoevska</i> (Lecture room 1, parallel session)	Session VIII: Infectious Diseases in Animals <i>Chair: Lejla Velić and Kiril Krstevski</i> (Lecture room 2, parallel session)	
	<i>Prevalence of serotypes 1/2a and 4b of Listeria monocytogenes from ready-to-eat food products in Kosovo</i> - Besart Jashari*, Katerina Blagoevska, Dafina Mehmetukaj, Dean Jankuloski	<i>Discovery and introduction pattern of panzootic Newcastle disease virus in chickens in Macedonia, 2020</i> - Aleksandar Dodovski*, Renfu Yin	
	<i>Enterotoxigenic staphylococcus strains isolated from raw milk and dairy products from R.N. Macedonia</i> - Marija Ratkova Manovska*, Mirko Prodanov, Dean Jankuloski, Pavle Sekulovski, Katerina Blagoevska	<i>Ovine paratuberculosis: intra-herd incidence study and assessment of commercial (ID. VET, FRANCE) indirect milk elisa test performance in dairy sheep</i> - Anna-Rita Attili, Eleonora Bonacucina, Martina Linardi, Luciana Pacifici, Vincenzo Cuteri*	
	<i>Antibacterial activity of goat whey with added kefir grains</i> - Sandra Mojsova*, Vesna Levkov, Ljupco Angelovski	<i>Zoonotic potential of equine-associated viruses</i> - Mihajlo Erdeljan*, Tijana Kukurić, Ivan Stančić, Ivana Davidov, Miodrag Radinović, Annamaria Galfi, Vukomanović, Nadežda Tešin	

11:30 – 13:15	<i>Bacterial contamination in different stages of poultry slaughtering process</i> - Mirko Prodanov*, Marija Ratkova Manovska, Sandra Mojsova, Ljupco Angelovski, Dean Jankuloski	<i>Re-emergence of rabies in Bosnia Herzegovina after the offset of oral rabies vaccination</i> - Eterović Toni*, Lejla Velić, Oliver Stevanović, Amer Alić	Clinical Workshop 2: (Lecture room 3, parallel session) Emergency states in veterinary ophthalmology Prof. dr. sc. Boric Pirkić Faculty of veterinary medicine, University of Zagreb, Croatia
	<i>Occurrence of aflatoxins, ochratoxin A and zearalenone in poultry feed</i> - Ida Kucinoska*, Biljana Stojanovska-Dimzoska, Aleksandra Angeleska, Katerina Blagoevska, Gordana Ilievska, Dushica Kocева, Elizabeta Dimitrieska-Stojkovic	<i>Detection and genetic characterisation of porcine circovirus type 2 in Macedonian wild boar and domestic pig population</i> - Zagorka Popova Hristovska, Kiril Krstevski*, Ivan Matevski, Stefanija Markozanova, Dine Mitrov, Igor Djadjovski	
	<i>Presence of heavy metals in animal feeds of plant origin</i> - Dushica Kocева*, Elizabeta Dimitrieska-Stojkovik, Biljana Stojanovska-Dimzoska, Aleksandra Angeleska	<i>Presence and prevalence of non-regulated infectious diseases with high economic impact on Macedonian dairy farms</i> - Ivan Matevski*, Igor Djadjovski, Kiril Krstevski	
	<i>Proposed chemical substances as quality parameters of chocolate</i> - Stefan Jovanov*, Risto Uzunov, Tome Nestorovski, Zehra H. Musliu, Velimir Stojkovski		
13:15 – 14:00	Lunch		

14:00 – 14:30	Plenary lecture VII: <i>Virtual slaughterhouse simulators as a complement, not a substitute of abattoir visits, in veterinary public health education</i> Prof. dr. Andrej Kirbiš, Faculty of Veterinary Medicine, University of Ljubljana Ljubljana, Slovenia (Lecture room 1, parallel session)		Clinical Workshop 3: (Lecture room 3, parallel session) The practical application of regenerative medicine in canine musculoskeletal conditions Dr Russell Chandler BVSc CertSAO MSc(OrthoEng) MRCVS, Small Animal Orthopaedics Alphavet Referrals Newport, Wales, UK
14:30 – 16:15	Session IX: Methods and Models <i>Chairs: Andrej Kirbiš and Dean Jankuloski</i> (Lecture room 1, parallel session)	Session X: Parasitic Diseases in Animals <i>Chairs: Aleksandar Cvetkovikj and Jasmin Omeragić</i> (Lecture room 2, parallel session)	
	<i>Evaluation of the performance of a real time PCR method for detection of Salmonella spp. invA gene in chicken meat -</i> Gordana Ilievska, Marija Ratkova Manovska, Dean Jankuloski, Katerina Blagoevska*	<i>Clinicopathological alterations in pet dogs naturally infected with Ehrlichia canis and Leishmania infantum in Macedonia – case study -</i> Elena Atanaskova Petrov*, Ksenija Ilievska, Todor Novakov, Ljubica Rashik, Igor Djadjovski, Miroslav Kjosevski, Irena Celeska	
	<i>Identification of meat species based on DNA hybridization, real-time PCR and fatty acid profile with GC-FID -</i> Dafina Mehmetukaj*, Vlora Zogëjani, Armend Cana, Xhavit Bytyçi, Besart Jashari, Zehra Hajrullai Musliu, Katerina Blagoevska, Dean Jankuloski	<i>Investigation of gastrointestinal helminth infections of horses in Thrace region, Türkiye -</i> Fatma Nur Dal*, Şakir Pehlivan, Kerem Öter, İbrahim Kurban, Aynur Gülanber	

14:30 – 16:15	<i>Diagnostic performance of eight PCR protocols and one indirect ELISA in naturally small ruminant lentiviruses infected ewes in Greece</i> - Aphrodite I. Kalogianni*, Ioannis Bossis, Ilias G. Bouzalas, Athanasios I. Gelasakis	<i>Prevalence and genetic characterization of Echinococcus granulosus in domestic ruminants in North Macedonia</i> - Ljubica Rashikj*, Aleksandar Cvetkovikj, Ivana Arsovska, Iskra Cvetkovikj, Jovana Stefanovska	Clinical Workshop 3: (Lecture room 3, parallel session) The practical application of regenerative medicine in canine musculoskeletal conditions Dr Russell Chandler BVSc CertSAO MSc(OrthoEng) MRCVS, Small Animal Orthopaedics Alphavet Referrals Newport, Wales, UK
	<i>Suitability of using the ISO 13730:1996 method for total phosphorous quantification in milk and milk products</i> - Tome Nestorovski*, Stefan Jovanov, Riste Uzunov, Ana Angelovska, Zehra Hajrulai Musliu, Radmila Crceva Nikolovska	<i>Investigation of parasitic diseases in wild animals in the federation of Bosnia and Herzegovina</i> - Jasmin Omeragić, Naida Kapo*, Darinka Klarić Soldo, Vedad Škapur, Saša Kunovac, Ermin Šaljić, Šejla Goletić, Adis Softić, Sabina Šerić-Haračić, Teufik Goletić	
	<i>Verification of a sampling method for animal feed from different origins used for chemical analysis</i> - Ana Angelovska*, Radmila Crceva Nikolovska, Aleksandra Angeleska, Tome Nestorovski, Dean Jankuloski, Mirko Prodanov, Zehra Hajrulai Musliu	<i>Gastrointestinal helminths of goats breeding at mountain area of central Serbia</i> - Pavlović Ivan*, Radanović Oliver, Zdravković Nemanja, Savić Božidar, Tasić Aleksandra, Pavlović Marija	
	<i>Contribution of animal model in the development of radiopharmaceuticals and successful translational molecular imaging and therapy</i> - Emilija Janevik-Ivanovska*, Icko Gjorgoski, Lajos Balogh	<i>Identification of lice species of water buffaloes in Marmara region of Türkiye</i> - Şakir Pehlivan*, Fatma Nur Dal, Kerem Öter, Aynur Gülanber	

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16:15 – 16:30	Coffee break & Poster exhibition (Part 4)		
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**WELFARE ASSESSMENT OF PIGS IN THE TIME OF
SLAUGHTER - STUNNING QUALITY AS A WELFARE INDICATOR**

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Maintaining the welfare of pigs is important during all stages of breeding, including the slaughtering process itself. This process is one of the most critical points for impairing their welfare, which further leads to changes in meat quality. In order to sustain the welfare of pigs during slaughtering there are specific welfare criteria that needs to be fulfilled. The objective of this study was to assess the welfare of pigs during slaughtering with the method of electrical stunning. The welfare assessment was performed on 215 pigs in three slaughterhouses. In order to perform the assessment, the following parameters were measured: duration (seconds, s) of application of the electric current (AD), electric current (amperes, A), electric potential (voltages, V), time (s) from AD to bleeding, corneal reflex, rhythmic breathing, vocalization and righting reflex. These measures are in line with the "Assessment pig protocol" (chapter 6.3 – Collection of data for finishing pigs at slaughterhouse), derived from the Welfare Quality® project. The results of the obtained data from all of the observed pigs show that the average AD was 7.88s (range from 2.15s – 18.89s), the average time from AD to bleeding was 5.49s ± 2.31s (range from 0.67s – 18.95s), the average electrical current was 2.07A ± 0.49A (range from 1.29A – 3.09A) and the average electrical tension was 265V ± 13V (range from 237V – 296V). Regarding the quality of stunning, 37.2% of pigs had positive corneal reflex right after stunning, 20% had rhythmic breathing, vocalization was observed in 7.4% and 2.8% of the pigs showed positive righting reflex. Differences were detected between the slaughterhouses in terms of the observed parameters, including the total sum of AD and the time from AD to bleeding. The average total sum of AD and time from AD to bleeding was 10.2s, 15.2s, and 13.9s in each of the slaughterhouses separately (p<0.05). These differences between slaughterhouses indicate different stunning and slaughter practices among them. Analysis of the data obtained from the welfare quality parameters for stunning, points out impairment of animal welfare during slaughtering and urges an immediate action in improving of stunning process in slaughterhouses.

Key words: electrical stunning, pigs, slaughterhouse, welfare assessment