

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



Joint meeting  
5<sup>th</sup> International Vet-Istanbul Group Congress  
&  
8<sup>th</sup> International Scientific Meeting  
Days of veterinary medicine - 2018

# BOOK OF ABSTRACTS

23-27 September 2018  
Ohrid, R. of Macedonia

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OF THE JOINT MEETING  
5<sup>th</sup> INTERNATIONAL VET-ISTANBUL GROUP CONGRESS AND  
8<sup>th</sup> INTERNATIONAL SCIENTIFIC MEETING  
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**FOREWORD**

Dear Colleagues,

It is my great pleasure to welcome you to the 5<sup>th</sup> International Veterinary Days of veterinary medicine - 2018, Ohrid, 23<sup>th</sup> to 27<sup>th</sup> September.

This year, in cooperation with the Faculty of Veterinary Medicine, we'll be organizing an academic cooperation (VEE) partners, by the public good.

The Faculty of Veterinary Medicine is together outstanding experts in the field of research, veterinary researchers, veterinary doctoral students, off in the veterinary education following topics: animal health and food safety.

The program for the conference will retain its usual popular student papers and posters authors, whose research of the International Scientific Meeting is electing 117 papers followed by two poster invited speakers for the talks.

A successful conference place, where ideas about veterinary medicine are debated, which will open new horizons for enjoyment.

On the behalf of the Faculty of Veterinary Medicine in Macedonia.

We look forward to your participation.

12.50-13.00	<i>Effects of Black Cumin addition to rations on the performance parameters in laying hens</i> <b>Tahir Balevi</b> , Uçkun Sait Uçan, Oğuzhan Kahraman, Abdullah Özbilgin
13.00-14.00	Lunch
<b>Moderators: Prof. Zehra Hajrulai-Musliu and Prof. Ali Aydin</b>	
<b>Scientific papers – Oral presentations</b>	
14.00-14.10	<i>Evaluation Of The Quechers Method And Gas Chromatography–Mass Spectrometry For The Analysis Fipronil And Its Metabolites In Egg Products</i> <b>Aleksandra Tasic</b> , Ksenija Nestic, Tijana Mitrovic, Nebojsa Vukovic
14.10-14.20	<i>Optimization And Validation Of Lc-Ms/Ms Method After Quechers Sample Preparation For Determination Of Fipronil And Its Metabolites In Eggs And Chicken Muscle</i> <b>Elizabeta Dimitrieska-Stojkovič</b> , Dushica Koceva, Aleksandra Angeleska, Biljana Stojanovska-Dimzosa, Gordana Ilievska, Risto Uzunov, Stefan Jovanov, Zehra Hajrulai-Musliu, Dean Jankuloski
14.20-14.30	<i>Determination Of B-Agonist Residues In Liver Using Lc-Ms/Ms Method</i> <b>Risto Uzunov</b> , Zehra Hajrulai-Musliu, Velimir Stojkovski, Elizabeta Dimitrieska-Stojkovic, Biljana Stojanovska-Dimzosa, Stefan Jovanov, Dean Jankuloski
14.30-14.40	<i>The Evaluation Of Histamine Levels In Carp (Cyprinus Carpio) Samples Collected From Afyonkarahisar, Turkey</i> <b>Acaroz Ulas</b>
14.40-14.50	<i>Detection Of Nitroimidazole Residues In Chicken Muscle Tissue And Egg Samples Using Competitive Enzyme Immunoassay</i> <b>Dušica Koceva</b> , Elizabeta Dimitrieska-Stojkovič, Gordana Ilievska, Zehra Hajrulai-Musliu, Dean Jankuloski
14.50-15.00	<i>Development And Validation Of A P-35S, T-NOS, And P-Fmv Multiplex Real-Time PCR Screening Method To Detect Regulatory Genes Of Genetically Modified Organisms In Food</i> <b>Katerina Blagoevska</b> , Dean Jankuloski, Gordana Ilievska
15.00-15.10	<i>Determination Of Total Phosphorus Content In Complete Dog Foods And Its Part In The Nutritional Balance</i> <b>Ana Angelovska</b> , Radmila Chrcheva Nikolovska, Zehra Hajrulai Musliu

## Parallel Session II

SCIENTIFIC  
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10.00-10.30	Coffee break
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**OPTIMIZATION AND VALIDATION OF LC-MS/MS METHOD AFTER QUECHERS SAMPLE PREPARATION FOR DETERMINATION OF FIPRONIL AND ITS METABOLITES IN EGGS AND CHICKEN MUSCLE**

Elizabeta Dimitrieska-Stojkovikj\*, Dushica Koceva, Aleksandra Angeleska, Biljana Stojanovska-Dimzoska, Gordana Ilievska, Risto Uzunov, Stefan Jovanov, Zehra Hajrulai-Musliu, Dean Jankuloski

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Fipronil is high-effective insecticide authorized for use in plant protection practices with limited application to some plants. However, the 2017 fipronil crisis in Europe revealed its unauthorized application at food producing animal, i.e. laying hens, whereas the detected concentrations in eggs exceeded the maximum residue level (MRL) of 5 µg/kg. The food safety authorities in European Union and food business operators have implemented significant monitoring of eggs for residues of fipronil. When ingested by animal organism fipronil metabolizes mainly in fipronil sulfone, and to less extent in fipronil desulfinil. In order to control the fipronil abuse and assure safety of the produced food, it is very urgent to develop a simple, sensitive, and reliable method for determining residues of fipronil and its metabolites in chicken eggs and muscle. The proposed method within this study involves the QuEChERS sample preparation, followed by reverse-phase ultra high – performance liquid chromatography - tandem mass spectrometry with electro-spray ionization in negative mode, for detection and quantification of fipronil and its metabolites fipronil sulfone and fipronil desulfinil in eggs and chicken muscle. Method performances were determined through the validation procedure following the SANTE recommendations. The method was validated for the linearity, sensitivity, precision, reproducibility, and expanded measurement uncertainty. The method linearity was obtained within the range 1-50 µg/L with correlation coefficients >0.99 for all three compounds studied. The limits of quantification were determined from 2.3 to 4.8 µg/kg, meaning that the analytes could be quantitatively determined below the assigned MRL value. The method precision and accuracy were assessed at levels of 5 and 25 µg/kg in five replicates, fulfilling the SANTE criteria for relative standard deviation (≤20 %) and recovery between 70 and 120 %. The expanded measurement uncertainty (k=2) around the level of interest (5 µg/kg) was estimated with values ranging between 9.1 and 14.4 % for egg matrix and 8.6 and 14.0 % for muscle. Additionally the method reliability was confirmed by successful participation in proficiency testing scheme PT – 502/2018 organized by RIKILT – Wageningen. The within-laboratory validation and the external quality control provided evidence that the developed method was fit for the purpose of control illegal treatment of chicken with fipronil insecticide.

**Key words:** fipronil, fipronil sulfone, LC-MS/MS, eggs, chicken muscle