

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

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



BOOK OF ABSTRACTS

9th International Scientific Meeting
Days of Veterinary Medicine 2022

Skopje, 2022
R. N. Macedonia

**ORGANIZATION COMMITTEES OF
9th INTERNATIONAL SCIENTIFIC MEETING
DAYS OF VETERINARY MEDICINE 2022**

International Scientific Committee

President

Prof. Dr. Lazo Pendovski, Ss. Cyril and Methodius University in Skopje, R. N. Macedonia

Members

Prof. Alen Slavica,
University of Zagreb, Croatia
Prof. Andrej Kirbis,
University of Ljubljana, Slovenia
Prof. Artur Niedzwiedz, University of Wroclaw, Poland
Prof. Bogdan Aminkov,
University of Forestry Sofia, Bulgaria
Prof. Breda Jakovac Strajn
University of Ljubljana, Slovenia
Prof. Danijela Horvatek Tomić,
University of Zagreb, Croatia
Prof. Danijela Kirovski,
University of Belgrade, Serbia
Prof. Dean Jankulovski,
Ss. Cyril and Methodius University in Skopje, R.N.Macedonia
Prof. Dine Mitrov,
Ss. Cyril and Methodius
University in Skopje, R. N. Macedonia
Dr. Dobriła Jakić-Dimić,
Scientific Veterinary Institute of Serbia, Serbia
Prof. Drago N. Nedić,
Veterinary Institute of the Republic of Serbia, Serbia
Dr. Elizabeta Dimitrieska-Stojkovikj, PhD,
Ss. Cyril and Methodius University in Skopje, R.N.Macedonia
Assoc. Prof. Florina Popovska-Percinikj,
Ss. Cyril and Methodius University in Skopje, R.N.Macedonia
Prof. Güven Kaşikçi,
Istanbul University, Turkey
Prof. Halil Selçuk Biricik,
University of Afyon, Turkey
Prof. Jože Starič,
University of Ljubljana, Slovenia
Prof. Jozef Laurincik, DrSc, Prof.H.C.,
Constantine the Philosopher University in Nitra, Slovakia
Prof. Kaspars Kovalenko,
Latvian University of Life Sciences and Technologies, Latvia
Prof. Marko Samardžija,
University of Zagreb, Croatia

Prof. dr. Aleksnadar Dodovski,
Ss. Cyril and Methodius University in Skopje, R.N.Macedonia
Prof. Milorad Mirilović,
University of Belgrade, Serbia
Prof. Muhamed Smajlović,
University of Sarajevo,
Bosnia and Herzegovina
Prof. Nenad Turk,
University of Zagreb, Croatia
Prof. Plamen Trojchanec,
Ss. Cyril and Methodius University in Skopje, R.N.Macedonia
Prof. Rizah Avdić,
University of Sarajevo,
Bosnia and Herzegovina
Prof. Serhat Alkan,
Istanbul University, Turkey
Prof. Tolga Kahraman,
Istanbul University, Turkey
Prof. Radmila Markovikj,
University of Belgrade, Serbia
Prof. Dragan Shefer, University of Belgrade, Serbia
Prof. Toni Dovenski,
Ss. Cyril and Methodius University in Skopje, R.N.Macedonia
Prof. Velimir Stojkovski,
Ss. Cyril and Methodius University in Skopje, R.N.Macedonia
Dr. Verica Milosevic, PhD,
University of Belgrade, Serbia
Dr. Vesna Z Djordjevic, PhD,
Institute of Meat Hygiene and Technology, Serbia
Prof. Vladimir Petkov,
Ss. Cyril and Methodius University in Skopje, R.N.Macedonia
Prof. Vlatko Ilieski, Ss. Cyril and Methodius
University in Skopje, R. N. Macedonia
Prof. Misho Hristovski,
Ss. Cyril and Methodius University in Skopje, R.N.Macedonia
Prof. Zehra Hajrulai-Musliu,
Ss. Cyril and Methodius University in Skopje, R.N.Macedonia

Local Organizing Committee

President

Asst. Prof. Dr. Miroslav Kjosevski, Ss. Cyril and Methodius University in Skopje, R. N. Macedonia

Members

Prof. Igor Ulchar
Assoc. Prof. Igor Djadjovski
Assoc. Prof. Irena Celeska
Assoc. Prof. Iskra Cvetkovikj
Assoc. Prof. Kiril Krstevski
Assoc. Prof. Ksenija Ilievska
Assoc. Prof. Nikola Adamov
Assoc. Prof. Radmila Chercheva Nikolovska
Prof. Romel Velev
Assoc. Prof. Sandra Mojsova
Prof. Slavcho Mrenoshki

Asst. Prof. Elena Atanaskova Petrov
Asst. Prof. Martin Nikolovski
Asst. Prof. Mirko Prodanov
Asst. Prof. Risto Uzunov
Dr. Aleksandra Angeleska, PhD
Dr. Aleksandar Cvetkovikj, PhD
Dr. Biljana Stojanovska Dimzoska, PhD
Dr. Branko Angjelovski, PhD
Dr. Igor Esmerov, PhD
Dr. Katerina Blagoevska, PhD
Dr. Ljupcho Mickov, PhD
MSc, Viktor Denkovski

all from the Faculty of Veterinary Medicine -Skopje (Ss.Cyril and Methodius University in Skopje, R. N. Macedonia)

Clinical Workshops - Chairs

Prof. Dr. Ksenija Ilievska, Ss. Cyril and Methodius University in Skopje, R. Macedonia

Dr. Tomislav Nikolovski, DVM - Executive Director of the Veterinary Chamber of the R.N. Macedonia

Secretariat of the Meeting

Dr. Ana Angelovski, PhD; Dr. Aleksandar Janevski, PhD, DVM; Dr. Marija Ratkova, PhD, DVM;
 Dr. Ljupcho Angelovski, PhD, DVM; Monika Dovenska, DVM; Todor Novakov, DVM; Zagorka Popova;
 Ljubica Rashic, DVM; Aleksandar Trajchovski, DVM; Dimitar Bozinovski, DVM; Filip Trojchanec, DVM;
 Miroslav Jovanovski, DVM; Jane Vlahov, DVM; Sara Georgievska, DVM; Larisa Shakjiri, DVM;
 Ivan Matevski, DVM; Boris Dimitrievski, DVM; Ana Galevska, DVM; Ena Dobrikj, DVM;
 Gordana Arsova, DVM; Dushica Trajkovska, DVM; m-r Stefan Jovanov; Tome Nestorovski
all from the Faculty of Veterinary Medicine -Skopje (Ss.Cyril and Methodius University in Skopje, R. N. Macedonia)

Financial Secretariat

m-r Ana A. Ordanovska, MSc
 m-r Milica Tosevska Apostolova, MSc
 m-r Maja Menkova, MSc

IT, DTP and Web Support

m-r Viktor Denkovski, MSc

Editors

Asst. Prof. Dr. Miroslav Kjosevski
 Prof. Dr. Lazo Pendovski
 Prof. Dr. Florina P. Percinic
 Asst. Prof. Dr. Martin Nikolovski
 Monika Dovenska, DVM

Published by:

Faculty of Veterinary Medicine – Skopje,
 Lazar Pop Trajkov 5/7, 1000 Skopje
 Tel: ++389 2 3240 700 Fax: ++ 389 2 3114 619
 www.fvm.ukim.edu.mk



CIP - Каталогизација во публикација
 Национална и универзитетска библиотека "Св. Климент Охридски", Скопје
 636.09(062)(048.3)

INTERNATIONAL scientific meeting (9 ; 2022 ; Skopje)

Book of abstracts : 9th International scientific meeting days of veterinary medicine 2022, Skopje, 2022
 R. N. Macedonia / [editors Miroslav Kjosevski ... и др.]. - Skopje : Faculty of veterinary medicine, 2022.
 - 177 стр. ; 25 см

Други уредници: Lazo Pendovski, Florina P. Percinic, Martin Nikolovski, Monika Dovenska. -
 Регистар

ISBN 978-9989-774-38-6

а) Ветеринарна медицина -- Зборници -- Апстракти

COBISS.MK-ID 58134021

O49

SUITABILITY OF THE ISO 13730:1996 METHOD FOR TOTAL PHOSPHOROUS QUANTIFICATION IN MILK AND MILK PRODUCTS

Tome Nestorovski*, Stefan Jovanov, Riste Uzunov, Ana Angelovska,
Zehra Hajrulai Musliu, Radmila Crceva Nikolovska

*Ss. Cyril and Methodius University in Skopje, Faculty of veterinary medicine - Skopje,
Food institute, Lazar Pop-Trajkov 5-7, 1000 Skopje, North Macedonia*

Phosphorous can be found naturally in food but due to his useful properties, is also used as an additive in the meat and dairy industry as an inhibiting, stabilizing and emulsifying agent. The quantification and monitoring of total phosphorous in food is of high importance for food safety because high and unregulated intake can lead to cardiovascular and kidney diseases. Modern spectroscopic approaches yield high accuracy in total phosphorus quantification and can be divided into two methods based on the reagents used. One being the “molybdenum blue” method and the other being the “vanadate/molybdate yellow” method. The goal of this study was to investigate if the vanadate/molybdate method, described in the ISO 13730:1996 is suitable for accurate quantification of phosphorous in milk and milk products. The Proficiency test results with assigned value for Sample 1 of 213.7 mg/100 g and Z - score of - 0.46 and assigned value for Sample 2 of 198.8 mg/100 g and Z - score of - 0.59. This was followed by verification of the method by determining the standard deviation (SD) for each sample series, the repeatability (r), and expanded uncertainty (U). Results confirmed that the ISO 13730:1996 method is suitable for accurate quantification of total phosphorus content in both meat and milk matrixes. This unification of both matrixes directly contributes to lowering the costs of the analysis, the time needed to perform the analysis, and having excellent precision in quantifying the total phosphorus content, thus increasing the scope of application.

Key words: phosphorus, quantification, spectroscopy, milk and milk products, meat and meat products