



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

BOOK OF ABSTRACTS

**“Days Of Veterinary Medicine”
10th International Scientific Meeting
and
2nd European Conference on
Veterinary and Medical Education 2024**

22-25 September 2024,
Republic of North Macedonia

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Skopje, 2024

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O21**TOTAL PHOSPHORUS QUANTIFICATION IN ANIMAL FEED, MILK, MEAT AND THEIR PRODUCTS USING THE ISO 13730:1996 METHOD**

Tome Nestorovski*, Stefan Jovanov, Risto Uzunov, Blagica Sekovska, Zehra Hajrluai Musliu

Ss Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine – Skopje, Lazar Pop-Trajkov 5-7, 1000 Skopje, North Macedonia

Phosphorus is a macro-element naturally present in animal feed, meat, milk and their products. Due to its beneficial properties, it is also used as an additive in these food groups. Monitoring total phosphorus concentrations in all food and feed products, whether it occurs naturally or is added during processing, is crucial for health safety. A high and unregulated intake of phosphorus can lead to side effects such as cardiovascular and kidney diseases as well as other complications in both humans and animals. The aim of this study was to integrate the phosphorus quantification method for animal feed described in ISO 6491:1998, into the previously optimized spectroscopy conditions for total phosphorus quantification in both meat and milk food matrices as a continuation of the research. The proficiency test results, with assigned value of 5870 mg / kg yielded a Z – score of - 0.3. Following this, the method was verified by determining the standard deviation (SD) for each sample series, the repeatability (r), and the expanded uncertainty (U). The results have confirmed that the conditions of the ISO 13730:1996 method are suitable for accurately quantifying total phosphorus content in all animal feed, meat and milk matrices. This unification contributes to reducing the cost and time required for performing the analysis, and ensures excellent precision in quantifying total phosphorus content, thus expanding the scope of application.

Keywords: phosphorus, spectroscopy, animal feed, milk and milk products, meat and meat products