

## IMPROVEMENT OF THE PROCEDURE OF CATTLE HAIR SAMPLE PREPARATION FOR CHEMICAL ANALYSIS

Jurii Kazimirovich Kovalionok

*Federal State Educational Establishment of Higher Professional Education*

*„Saint Petersburg State Academy of Veterinary Medicine“*

*Chernigovskaja st.5, Sankt Petersburg, Russia; Tel. +375 29 713 23 13; E-mail: kovalionok@gmail.com*

**Abstract.** The aim of the study was to determine an optimal procedure of terminal cattle hair preparation for chemical analysis. The object of the study was cattle hair and the level of its purity for trace element analysis. In the present work, methods of spectrophotometric and microscopic analysis were applied along with ICP-MS testing including “wet” mineralization of the sample. A large number of exogenous substances on the cattle hair surface, microscopically detected damage of its structure, as well as high dispersion of sampling on the tested elements content, expressed by a coefficient of variation, indicate a poor sample preparation quality of traditional approach. A combined application of both ethanol rectification in the concentration of 40% or above and ultrasound with the frequency of 35 kHz are proved to be an optimum for the qualitative sample preparation for analysis. The method proposed gives us an opportunity to achieve the necessary purity of the sample with minimal time, energy and labour costs.

**Keywords:** metabolism, trace elements, laboratory diagnostics, sample preparation, cattle hair.