The 1st Ukrainian-Polish Scientific Forum
AGRO BIO PERSPECTIVES
29–30 September 2021, Lviv, Ukraine

Institute of Animal Biology NAAS

ZINC CONTENT IN THE HAY OF THE CALVES RATION IN FARMS OF DIFFERENT BIOGEOCHEMICAL PROVINCES

Ye. Dzen, I. Luchka, A.Skorokhid, Y. Saluha
Institute of Animal Biology NAAS, Lviv, Ukraine

Introduction

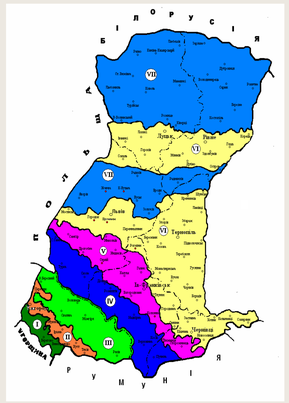
Mineral nutrition and the provision of animals with microelements in Ukraine should necessarily be associated with the presence of different climatic and geological zones of the country with diverse supply of mineral elements. Therefore, in order to organize adequate nutrition for animals, it is necessary to establish the actual content of trace elements in feed, identify their deficiency and, on this basis, introduce them into rations.

Material & Methods

Hay samples of cattle ration were taken for research from different biogeochemical provinces - Transcarpathian Lowland, Transcarpathian foothills, Transcarpathian mountain, northeastern mountain, northeastern foothills, forest-steppe lowland and Polissian, which are located in Transcarpathian, Ivano-Frankivsk, Lviv, Volyn, Khmelnytsky, Vinnytsia, Rivne regions. Hay samples were taken in small portions over the entire surface of the shed, not less than 10 places, starting from a height of 0.5-1 m. The weighed samples were burned and the zinc content was determined in the resulting inorganic residue using atomic absorption spectrophotometer C-115 PC.

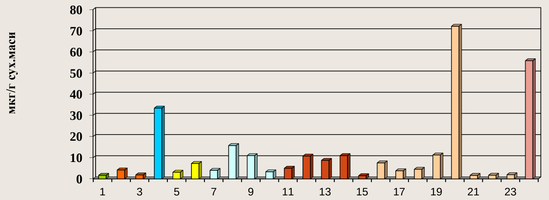
Results

The findings showed that the zinc content in the selected hay samples in the studied zones is distributed unevenly. It was found that the hay of the studied provinces significantly differs in zinc content. The highest zinc content in the studied hay samples was found on the farm of Gorokhovsky district of Volyn region - 72.08 mg / kg of dry feed weight, and Dubrovitsky district of Rivne region, located in the Polissya biogeochemical province. These data indicate that the concentration of zinc in the hay samples from these farms exceeds the norm, which is 40 mg / kg of dry feed weight. However, in other hay samples from the Polissya province, the zinc content was almost 40 times lower, which does not meet the need of cows for this trace element. The lowest concentration of zinc was found in the hay samples from Ternopil district of Ternopil region - 1.51 mg / kg of dry feed weight, and Vinnytsia district of Vinnytsia region - 1.65 mg / kg of dry feed weight, located in the forest-steppe lowland and Polissya biogeochemical provinces, respectively. These data indicate that the hay of these farms does not fully provide animals with zinc.



The Western biogeochemical zone of Ukraine

I - Transcarpathian lowland
II - Transcarpathian foothills
III - Transcarpathian mountains
IV - North-eastern mountains
V - North-eastern foothills
VI - Forest-steppe lowlands
VII - Woodlands



Conclusions

Therefore, in most of the studied hay samples, the concentration of zinc only partially provides the animals with this trace element. Within one biogeochemical province, the concentration of zinc in the studied hay samples may differ significantly.