
EFFECT OF TAJIKISTAN ALUMINUM PLANT WASTE ON CATTLE

ORGANISMS

Ibragimov A.

Doctoral Student

Salimov Yu.

Scientific Supervisor Professor

Nematullayev O.

v.v.f.d., (PhD)

Samarkand State University of Veterinary Medicine,

Animal Husbandry and Biotechnology

Abstract:

The article reveals the negative impact of emissions from the Tajik aluminum plant on the general indicators of cattle blood based on the conducted experiments.

It was established that fluorinated intoxication in the body under the influence of industrial emissions, that is, provoking the development of fluorosis, is manifested by disturbances in the enzyme system, mineral, carbohydrate, protein metabolism, as well as in the liver.

Keywords. Emissions from the Tajik aluminum plant, fluorine, cattle, fluorosis, morphological, biochemical, immunological, mg / kg.

Enter

Today, the issue of ecology and food remains one of the global problems that concern the whole world. As a result of the application of chemical technological processes to various sectors of the national economy in the development of industrial production, conditions are created for environmental pollution. For this purpose, the decree of the President of the Republic of Uzbekistan dated January 16, 2018 No. PF-5303 "On measures to further ensure the food security of the country" serves as a program for the development of measures to eliminate and prevent these problems. [1,3,4]



Research object and methods. The research work was carried out on 55 head of cattle at the "Zuhriddin Rahmon Farovon" farm of Sariosia district, Surkhandarya region.

The general state of the cattle in the experiment was first studied based on clinical examinations. As a result of the study, it was found that 5 cows showed early signs of fluorosis, and 5 cows showed clear clinical signs of chronic fluorosis. As a result, 15 cows were selected for our research and experiments were conducted, dividing them into 5 control and two experimental groups. Morphological indicators of blood content were determined using BIOBASE BK 6190, and biochemical changes were determined using Mindray BA 88A hemoanalyzers. Immunological indicators were determined using the method recommended by T.F. Koromislov and V.A. Saladovnikov (1980). Determining the amount of fluorine in food and water was carried out based on the methodological instructions developed by F.I.Mandrikov and I.V.Dankovlar (1979).

The amount of fluorine in water and feed was determined using a photometric method.

The purpose of the study. The purpose of the evaluation of the toxic effects of harmful wastes on the organism of cattle is to evaluate the nature of the toxic effects of the aluminum plant of Tajikistan.

Research results and their analysis.

The results of the initial research indicate that as a result of the continuous impact of aluminum production industry wastes on the organism of farm cattle, they have developed fluorine intoxication, i.e., fluorosis disease. Clinical examinations showed that 5 cows in the first experimental group had the initial symptoms of fluorosis, i.e. yellow-brown spots on the enamel of the incisors, while the rest of the cows in the second experiment showed deficiencies in the tooth enamel layers and tooth movement, i.e., chronic fluorosis. It is known that fluorosis disease in animals is mainly caused by disturbances in the enzyme system, mineral, carbohydrate and protein exchange and liver function. The amount of fluorine in water in this area was 0.33 mg/l, and in alfalfa hay it was 35.83 mg/kg. [2,5,6,8]

Therefore, we first performed hematological analysis studies in these animals.



The main changes in the field of cows in the experimental and control groups are mainly the changes in the morphological, biochemical and immunological parameters of the blood of the cattle in the first experimental group compared to those in the control: leukocytes by 41.32%, neutrophils with nucleated nuclei by 40.7%, monocytes by 36.9%, eosinophils by 21.95 %, ALT by 13.49%, total protein by 7.61%, urea by 22.9%, total bilirubin by 18.31%, lymphocytes by 13.6%, if increased, erythrocytes by 6.16%, hemoglobin decreased by 12.62%, erythrocyte sedimentation rate by 45.7%, AST by 16.48%, glucose by 21.15%, and total calcium by 24.19%.

In the second experimental group, compared to the control, leukocytes increased by 29.45%, nucleated neutrophils by 42.85%, eosinophils by 46.34%, monocytes by 27.27%, total bilirubin by 6%, ALT by 10.96%. , total protein by 1.44%, urea by 13.18%, lymphocytes by 11.21%, erythrocytes by 7.02%, hemoglobin by 18.44%, erythrocyte sedimentation rate by 33.33%, AST We witnessed a decrease of 7.20%, glucose by 22.0%, and total calcium by 11.4%.

The analysis of these indicators indicates that the cows in this experiment, exposed to the wastes of the aluminum plant of Tajikistan, had inflammation, allergies, anemia, deficiencies in the immune system, liver function and calcium-phosphorus metabolism at various levels.

Conclusions

1. The main reason for the occurrence of fluorosis in cattle is the negative impact of industrial waste from the aluminum plant of Tajikistan.
2. As a result of the effect of high level of fluorine on the morphological, biochemical and immunological parameters of the blood of cows, the protective activity of the body decreases and various inflammatory processes occur.

References:

1. Коромыслов Г.Ф., Солодовников В.А. “Определение популяций лимфоцитов крови крупного рогатого скота методом розеткообразования” Методические рекомендации по биохимическим методом исследований клеток, их компонентов других биологических субстратов- Москва, 1980. С.18-34



2. Мондрик Ф.И., Данков И.В. Методические указания по диагностике флюороза крупного рогатого скота и определение фтора в воде и биологическом материале- Кишинёв,1979,-18с
3. Рахмонов А.Ж Сурхондарё вилояти транс чегаравий худудларидаги экологик вазиятни, қишлоқ хўжалик ҳайвонлари қонининг биокимёвий кўрсаткичларига таъсири. Чорвачилик ҳамда ветеринария фани ютуқлари ва истикболлари. Республика илмий-амалий конференцияси. Самарқанд, 2010 й. 82-85б.
4. Рахмонов А.Ж Техноген омиллар таъсиридаги худудий касалликларнинг симптоматикаси. Ветеринария ҳамда чорвачилик илми ва амалиётининг долзарб вазифалари мавзусидаги илмий анжуман. Самарқанд 6 декабр, 2013й., 58-59 б.
5. Хаитов В.Р., Салимов Ю. ва б. Кимёвий воситалар таъсиридан, ҳайвонлар организмида юзага келадиган иммун етишмовчиликларни олдини олиш ва даволаш бўйича тавсиянома. Самарқанд-2018 й.
6. Ю., Хаитов В.Р. ва б. Пестицидлар ва бошқа кимёвий токсиконтлар таъсиридан, ҳайвонлар кўпайиш органларида содир бўлаётган патологиялар ва уларни олдини олиш чоралари бўйича тавсиянома. Самарқанд-2019 й.
7. Ibragimov A.T., Salimov Yu., Harmful Waste and their Effects on the Body. Central asian journal of theoretical and applied sciences. Volume: 03 Issue: 05 | May 2022 ISSN: 2660-5317.