



CHEMICAL INDICATORS OF SHEEP MEAT INFESTED WITH ECHINOCOCCOSIS

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Abstract

Nowadays, veterinary sanitary examination of products and its control is one of the most important issue. This article gives information about organoleptically changes and presence of ammonia and its effect to sheep infected with echinococcosis.

Аннотация

В настоящее время ветеринарно-санитарная экспертиза продуктов питания и их контроль является одним из самых важных задач во всех странах мира. Это статья даёт информацию о химических изменениях мяса при эхинококкозе овец.

Keywords: echinococcosis, cysts, safety, pH, formol test, extract.

Introduction

Echinococcosis is one of the most common diseases. Echinococcosis is one of the most frequent zoonotic diseases in the world, especially in endemic areas represented by all sheep breeding countries. Also, echinococcosis is one of the most parasitic diseases that are often found in humans.

The most numerous cases of the disease are observed in countries where dominates agricultural activity. Echinococcus can affect any organ, but in most cases lesions of organs such as the liver and lungs occupy a dominant position.

It is known that in our country echinococcosis is widespread among sheep, and in order to limit the spread, preventive measures must be taken regularly. It has been shown that the development of echinococci in sheep adversely affects not only their growth, but also the quantity and quality of meat and meat products obtained from them. To solve this problem, it is necessary to take preventive measures. The chemical indicators of sheep meat in echinococcosis is also not important less. In this article, you can see the results and also compare chemical parameters of the meat of healthy and sick animals with echinococcosis.



Material and Research Methods

The research was conducted in a specialized slaughterhouse of the Samarkand region "Sam teri tayorlov". 80 sheep were examined and echinococcosis was found in 9 of these slaughtered sheep. This means that 7.2% of the animals (sheep) were infected with echinococcosis. During this research, we have compared the chemical parameters of the sheep meat infected with echinococcosis and healthy animals. A sample was taken for formalin and checked the pH of the infected and healthy animal's meat.

Results of the Research

Echinococcosis harms not only the health of animals, but also affects the chemical parameters of meat and meat products. Therefore, a comparison of the chemical parameters obtained from laboratory studies of healthy and infected animals with echinococcosis is important in the veterinary sanitary examination and evaluation of products. Further in the table we can see the results of chemical indicators of sheep meat in healthy and infested animals.

Chemical parameters of meat healthy and infected animals with echinococcosis.

Animal groups	Физико-химические показатели мяса	
	Formalin test	pH
Healthy animals	Negative (clear broth)	5,9±0,02
Infested animals	Positive (cloudy broth)	6,3±0,01

Formalin test. In severe diseases in the muscles of animal accumulates significant amount of intermediate and final products of protein metabolism, such as polypeptides, peptides, amino acids, etc. The essence of this reaction is the precipitation of these products with formaldehyde. To set up the sample, it is required an aqueous extract from meat in a ratio of 1:1.

Prepared extract in a ratio of 1:1. To do this, we took a sample of 10 g of muscle tissue without fat and connective tissue and placed it in a mortar, where it was crushed with scissors to a state of minced meat. Then 10 ml of 0.9% sodium chloride solution and 10 drops of 0.1 N sodium hydroxide solution were added there. The contents of the mortar were carefully ground with a pestle to a greasy consistency and transferred to a flask. The flask was heated on an electric stove, stirring with a glass rod to precipitate proteins (until it became gray). The flask was cooled with cold tap water. The contents of the flask were neutralized with 5 drops of a 5% oxalic acid solution and filtered through a filter paper. 2 ml of the resulting meat extract filtrate was poured into a test tube and 1 ml of neutral formalin was added.



The Result of the Reaction

The extract taken from meat of healthy animals – was clear and the extract of sick animals - was cloudy. Determination pH of meat. We determined the pH of meat by colorimetric method. Prepared meat extract in a ratio of 1:4. 20 g of meat sample was placed in a flask, chopped with scissors to the state of minced meat. Then 80 ml of distilled water was added and stirred 3 times for 15 minutes (each 5 minutes), after which it was filtered through a paper filter.

pH was determined using color standards sealed in test tubes and a comparator with six sockets arranged in 2 rows of 3 in each. Test tubes were inserted into the comparator sockets and filled as follows: 2 ml of meat extract were added to the tubes of the first row, then 5 ml of distilled water were added to the outer tubes, and in the central - 4 ml of distilled water and 1 ml of the indicator (0.1% solution of para-nitrophenol).

7 ml of distilled water was poured into the central test tube of the second row, and the standards were inserted into the outer sockets, selecting them in such a way that, when observed through horizontal holes, their color coincided with the color of the contents of the middle tube. The pH of the meat obtained from diseased sheep was 6.3 ± 0.01 , while in healthy sheep was 5.9 ± 0.02 .

Conclusions

The research of meat in healthy and infected sheep with echinococcosis led to the conclusion that the disease affects and changes some of the chemical parameters of the product.

Used literature

1. Aminjanov Sh.M. Cystic echinococcosis-hydatidosis in animals and humans and measures against them. Monograph. «Extremum Press» - Tashkent, 2012.
2. A Moro P., Schantz P.V. Cystic echinococcosis in the Americas//Parasitology International. - 2006.
3. Valieva Zh.M., Sarsembayeva N.B. Influence of echinococcosis on the biological and nutritional value of meat // Scientific and Practical Journal - 2012.
4. Bessonov A.S. Echinococcus multilocularis - alveolar hydatidosis in the CIS countries (distribution, epidemiology, diagnostics) // Veterinary. - 1998.
5. Senchenko B.S. Veterinary sanitary examination of products of animal and vegetable origin - 2001.
6. Larrieu E.J., Frider B. Cystic echinococcosis in Tunisia: analysis of hydatid cysts that have been surgically removed from patients // Ann.Trop. Med and Parazitol. - 2001.
7. Internet sites.
<http://www.zooveterinariya.uz>
<mailto:veterinariya@actavis.ru>
<http://www.fwi.co.uk/livestock/health-welfare>
<http://www.oie.int/en/disease/echinococcosis>