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RESULTS OF LABORATORY ANALYSIS OF MEAT SAMPLES SUSPECTED OF TUBERCULOSIS

A. Babashov
Samarkand State Veterinary Medicine, Tashkent
Branch of University of Animal Husbandry and Biotechnology, Senior Lecturer

O. I. Kuziboyeva
Samarkand State Veterinary Faculty, Tashkent
Branch of Animal Husbandry and Biotechnology University, Assistant.

D. Egamov
Student of Tashkent Branch of Samarkand State
Veterinary Medicine, Animal Husbandry and Biotechnology University

ABSTRACT

This article describes the results of laboratory analysis of meat samples suspected of tuberculosis.

Key words: extract, indicator, paranitrophenol, Michaelis scale, neutral, keliscope, havancha, acidity.

INTRODUCTION

The importance of food products in meeting the material needs of man as a biological being is incomparable. Exactly, a person receives protein, fat, carbohydrates, vitamins, mineral salts and other various compounds necessary for his life activities through food products. One of the main tasks specified in the state program on "Ensuring food security in our country" is to meet the needs of the population for food products. In particular, in the field of animal husbandry production, it has been specially shown to ensure that the products are ecologically clean and of good quality.

Therefore, it is important to control the transmission of infectious diseases in cattle, including tuberculosis, from animals to humans. Tuberculosis mycobacteria are affected by gastric juice when the disease is transmitted through alimentary route. If the bacteria survive, they enter the intestine, travel to the regional lymph nodes, and then enter the bloodstream. The digestive tract, oral cavity, large and small intestine can be the portal of entry for the tuberculosis bacillus to enter the body. Tuberculosis-infected animals are also a source of infection. Therefore, the causative agent of tuberculosis can enter the human body through the alimentary route through uncooked meat and dairy products. Humans are infected with the causative agent of mycobacterium bovis in up to 26.5% of cases. In Russia, in 2002-2004, 75,254-93,700 head of cattle had a positive reaction to tuberculosis, of which 18,000-21,600 samples were bacteriologically examined. 63.6% pathogenic and 36.4% atypical mycobacteria were isolated from them. 96.5% of mycobacteria are bovis species, 2.7% are M. tuberculosis and 0.8% of M. avium species.[5]

In Uzbekistan, an average of 1,605 head of cattle are tested for tuberculosis by an allergic method every year. This is only 0.016% of the average number of cattle.

Pathogenic microbes are very resistant to acid, so they can be stored in fermented milk for up to 20 days. Disease germs can be stored in cheese for up to 2 months, yellow oil for up to 100 days, if the oil is stored in a cold place for up to 10 months, and frozen oil for more than 6 years. Microbes are quickly killed at high temperatures. In a liquid environment, the temperature is 60o, and it dies in 30 minutes.[3]

Based on the above, it is considered an urgent issue to stop the consumption of meat and meat products obtained from cattle infected with tuberculosis in our Republic and to improve the veterinary and sanitary assessment of these products.

The purpose of the study. Examination of meat samples suspected of tuberculosis in the laboratory of veterinary sanitary expertise and determining the results.

RESEARCH PLACE, OBJECT AND METHODS

Researches were checked in the laboratory of the Samarkand Institute of Veterinary Medicine, Department of Veterinary Sanitary Expertise and Hygiene, using biochemical methods. Meat samples suspected of disease were taken from Payariq district of Samarkand region as research material.

The results obtained. First, to prepare meat extract, 25 grams of meat was taken from each sample, separated from fat, fat and bone, then divided into 40-50 pieces and placed in a 250 ml flask. 100 ml of distilled water was poured into this flask and mixed well. After standing this meat mixture for 15 minutes (stirred 3 times in the meantime) it was passed through a paper filter and filtered. We used the prepared extract to determine the pH of meat. A Michaelis scale (indicator) and a 6-digit comparator were used to determine the indicator of hydrogen ion concentration. 2 ml of the extract of the tested meat sample was poured into the second test tube of the comparator, and 1 ml of indicator (paranitrophenol), 4 ml of distilled water were added to it; 2 ml of meat extract and 5 ml of distilled water were added to the first and third test tubes, and only 7 ml of water was poured into the fifth test tube. Comparator was selected by comparing test tubes of the same color as the second test tube located on the Michaelis scale in the fourth and sixth chambers, and the ph indicator was indicated on these selected test tubes. We observed a decrease in pH of the meat samples tested on the second and third days compared to the first day of testing. Control and pathological samples were kept under the same conditions.

(Table 1)

Meat samples	First day of inspection	The pH reading on the second day of testing	pH reading on the third day of testing
Sample 1	pH indicator	±5.9	±6.0
Example 2	±5.8	±6.6	±6.9
Example 3	±6.5	±6.6	±7.0
Sample 4	±6.4	±6.0	±6.0
Sample 5	±5.9	±6.8	±7.0

As can be seen from the table above, the first and fourth samples were taken from the meat of healthy animals, and the second, third and fifth samples were taken from the meat of sick animals.

The meat samples that we are examining from our side were also examined with formalin reaction. During the inspection, 10 grams of meat samples were taken, crushed with scissors, placed in a mortar, and 10 ml of physiological solution and 10 drops of 0.1% alkali solution were added to it. The meat was crushed and rubbed using a calicoscope, and the resulting slurry was transferred to a flask using a glass rod and heated to boiling to precipitate the proteins. The flask was cooled under running water, 5 drops of 5% shavel acid were added for neutralization, and filtered through a paper filter. 2 ml of the prepared meat extract was taken in a test tube and 1 ml of neutral formalin was added to it.

At the end of the reaction, the filtrates from the first and fourth tested samples were clear, and the filtrates from the second, third and fifth samples were thick.

SUMMARY

In conclusion, it can be said that the biochemical indicators of beef infected with tuberculosis are different from the meat of healthy animals and are considered unfit for consumption.

Over time, the concentration of hydrogen ions in infected beef becomes less acidic and less alkaline, making it unfit for food.

Meat and other types of products obtained from diseased cattle should be thoroughly inspected on the basis of veterinary legislation, otherwise people can get sick through the products.

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