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EPIZOOTOLOGIC AND DIAGNOSTIC OF TOKSOPLASMOSIS OF GOATS

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The paper presents data about the using of different test kits for in vivo diagnostics of toxoplasmosis of goats. The peculiarities of the course of invasion are established, which depends on the season of the year, as well as age, sex and breed of animals. An infection of sapling of goats from one year was 10 %, at the same time as at animals by age from five to six years this index was increased and evened 30 %. Maximal staggered it was registered toxoplasmes at animal regional breeds. Extensiveness of invasion among the females of goats was considerably higher (72,2 %) as compared to males (20 %).

Keywords: goats, toksoplazmosis, test-systemes, imunofermentic analysis.

Raising of problem. Toksoplasmosis - illness of animals and man is widespread on earth [2, 3]. Sexless development of toksoplasmes (tissue phase) takes a place in the organs of intermediate owners - man, mammals and birds. Representatives families cat-like is the definitivity owners of *Toxoplasma gondii* [4]. In their organism there is a sexual cycle of development of parasite with formation of cist which are selected with excrements in an external environment. Oocisty long time (about 18 months) is saved in the objects of environment and draw infection the parasitic organisms of man and animals. Except for that one of basic sources of infection of carnivores there is the use by them meat with cisty of toksoplasmes.

Analysis of basic researches and publications the decision of problem is founded in which.

A man quite often is infected the exciter of toksoplasmosis in the case of the use in the meal of meat products which were not enough thermally treated [9, 10]. In natural hearths illness is registered practically at all of types of mammals and birds. Especially high infection of toksoplaimyi rodents [1].

In sinantropical hearths the source of invasion is a cattle, sheep, goats, camels, horse, donkeys, pork, carnivores, ducks, ganders, turkey-cocks, guinea-fowls, parrots and other animals. In Egypt in the process of research of excrements in 41,3 % homeless cats found out oocistes of toksoplasmes. In Senegal 30 % cattle, 46 % sheep, 28 % pigs and 6,2 % goats is the transmitters of toksoplasmes; antibodies to the parasitic organisms are registered in 65,2 % cattle of Nigeria. Positively react on toksoplasmosis lions,

zebra, hippopotamuses and other animals. In India 34 % goats and 31,5 % pigs staggered by the excitors of this illness; 73,7 % camels, 31,6 % goats, 21,4 % sheep, 20,4 % Buffalo of Afghanistan is the transmitters of toksoplasmes. In Brazil 90,6 % cats, 60 % bulls, 68,4 % dogs, 41,2 % chickens, 40 % ducks, 24,7 % pigs, 39 % also sheep staggered by these vermin [1].

Tissue cistes of toksoplasmes more frequent all find out in different fabrics of infected pigs, sheep and goats. Cistes of *Toxoplasma gondii* is in venison and other meat of wild animals, including hare, wild boars, kangaroo, bears, remains the potential source of invasion for a man [8]. The workers of for slaughter points, butchers and hunters, can be infected during disemboweling and treatment of meat.

Tissue cistes is less proof to the ecological terms, than oocistes. They remain invasions at 1-4 °C in carcasses or meat stuffing during three weeks. Most of tissue cistes perish for temperatures -12 °C and below [5-7].

For sheep and goats of toksoplasmosis is principal reason of abortions and stillborn. Reports about seropositivity animals in different countries differ. Recent publications confirmed, that seropositivity animals it can be enough high [8].

Purpose and task of researches. *The purpose* of work was a study of features of epizootologic of toksoplasmosis of goats on territory of Ukraine. In *a task* entered to set the features of motion of invasion depending on the season of year, and also age, floor and breed of animals.

Materials and methods of researches. Researches conducted during 2010-2012 on goats (a private economy is the «Gold goat» Novoarkhangelsk district of the Kirovograd area). The whey of blood of animals was probed after the method of imunofermentic analysis.

For establishment of diagnosis from animals took away venous blood (from 2 to 10 ml) in sterile non-permanent test tubes. The got blood was maintained during one hour at a room temperature, whereupon it was carried in a refrigerator on one days. A whey was taken away in non-permanent test tubes as «Ependorf» and centrifuged at 3000 turns 10 minutes. Ceared whey was kept in a refrigerator for temperatures +2...+4 °C to conducting of researches.

For researches of wheys of blood of goats utilized followings test-systemes: set of reagents of D1764 for the imunofermentic exposure of total antibodies to *Toxoplasma gondii* «VectoToxo-antibodies» (a producer is joint-stock COMPANY «Vector-best», Novosibirsk, Russian Federation) and antigen (Antigen of suspension, producer - «Medicago», Sweden), coal suspension (Carbon of suspension, india ink, producer - «Medicago») and three different control wheys of blood, in particular, positive and negative.

For establishment of dynamics of staggered of goats by an exciter *T. gondii* depending on their age 3 groups of animals were formed: sapling to one year, from three to five and from five to six years.

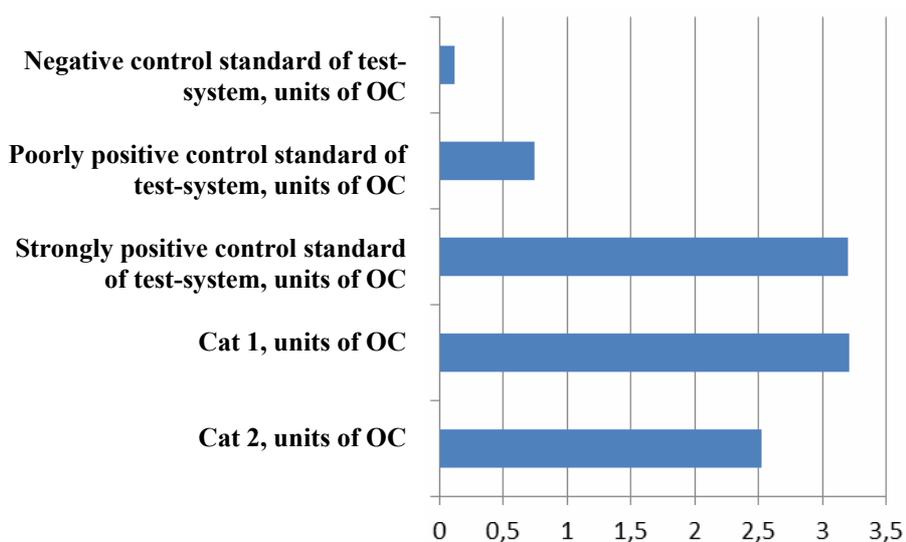
Results of researches. From 76 probed on a farm the «Gold goat» of animals positively reacted in the process of raising of reaction of imunofermentic analysis in the presence of titles of antibodies to the

exciter of toksoplasmosis 33, that is 43,42 %, doubtfully - 2 animals (2,63 %). The last pre-production models (53,95 %) appeared negative.

Toksoplasmosis of goats, from data of literary sources, belongs to the invasions, that does not have the expressly expressed seasonality. However, conducting research we fixed other results: it is set that extensiveness of invasion among animals in winter was 20 %, in spring - 60,87 %, in summer - 85,71 %, and in autumn - 37,49 % [3].

The results of researches of animals of economy testify to the different indexes of extensiveness of invasion during a year. For this reason by us serological research of wheys of blood of two cats, which were on territory of farm and, probably, could be the source of invasion for goats, was conducted.

It is set as a result of the conducted work, that the level of titles of antibodies of one of cats made 2,518 units of optical closeness, and other - 3,205 units of OC. Besides the control standards of test-system reacted as follows: strongly positive a control standard is 3,201 units of OC; poorly positive - 0,742 units of OG; negative - 0,121 units of OC (pic. 1).



Pic. 1. Comparison of units of optical closeness of whey of blood two cats and control standards of test-system

The results of the conducted serological researches of wheys of blood of cats testify to the presence of high titles of antibodies to the exciter *T. gondii*. It, obviously coincides with the sharp flow of illness and with the selection of oocistes in an environment. The last can come forward the source of invasion for animals and man.

The results of researches testify to the increase of extensiveness of toksoplasmosic invasion with age of animals. Yes, infection sapling of goats to one year was 10 of %, in that time as for animals in age from five to six years already 30 %, that on 20 % anymore. It, from our point of view, is related to that than senior animal, the greater is probability of infection its exciter *T. gondii*.

In addition, by us the levels of titles of antibodies were set on groups depending on age of animals: the level of titles of antibodies in the sapling of goats made 0,794 units of OC, in the second group of animals - 3,159 units of OC and in the third are 1,881 units of OC. Thus, was found out the greatest level for animals in age from three to five years, that can coincide with the period of motion of the sharp stage of invasion. This index diminishes in the group of animals in age from five to six years of, which can be related to passing of the sharp stage of motion of toksoplasmosis to the chronic form.

In the next series of experiments determination of degree of staggered was conducted by the exciter of toksoplasmosis depending on the breed of goats and places, where they were left from.

During researches a tendency was set to the maximal infection of toksoplasmes animals of regional breeds. Yes, among goats, left from Crimea, in 2011 year extensiveness of invasion arrived at 100 %, and the greatest index for the animals of zaanensky breed made only 20 %.

For establishment of dynamics of staggered of goats depending on their floor the analysis of standards of wheys of blood was conducted. It is set as a result of the conducted researches, that extensiveness of invasion among the females of goats was substantially higher (72,2 %) in comparing to males (20 %). Considerably less infected males among the probed animals it is possible to explain them the separated maintenance and improving terms of feeding. At the same time the level of titles of antibodies for males little differed from an analogical index for females. These indexes approached a value strongly of positive control standard (3,201 OC) which testifies to probability of sharp motion of toksoplasmosis for animals during conducting of researches.

Conclusions:

1. During raising of reaction of imunofermentic analysis 43,42 % goats positively react on a presence in their organism of antibodies to the exciter *Toxoplasma gondii*.
2. Toksoplasmosic invasion is registered at any time year. Found out the maximal defeat of toksoplasmes for goats in age from 5 to 6 (30 %), that on 20 % more than for animals under age one year.
3. For vital diagnostics of toksoplasmosis goats by the method of imunofermentic analysis test-system of «VectoToxo-antibodies» of firm «Vektorbest» (Russian Federation) and method of carbon serologichnogo analysis appeared effective, by a producer to the antigen and coal suspenszii of which there is the Swedish firm «Medicago».

Perspective subsequent researches there is a study of questions of distribution in Ukraine of toksoplasmosis among other types of animals that development of measures of fight against this invasion.

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