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TOXOPLASMOSIS OF SHEEP IN UKRAINE

The article contains the results of investigations on the detection of antibodies to the Toxoplasma gondii agent of sheep blood serum. The obtained data shows us the spreading of Toxoplasmosis among different animal age groups in different regions of Ukraine and AR Crimea, and also dependence of invasion from the animal's gender.

Toxoplasmosis is a widespread parasitic disease of various species of animals and also humans [5, 6]. In most cases the disease is chronic but in sheep and goats it is a major cause of abortions and stillbirths which cause great economic damages [3].

Agent *Toxoplasma gondii* is registered among animals in different countries of the world. The prevalence of the disease it caused in Europe varies from 16 till 92 % [7]. The highest prevalence of the agent was reported on the territory of France (till 92 %). It was also found that with the age increase the number of positively reacting animals [1, 2, 4].

MATERIALS AND METHODS

The study was conducted during 2013 at the farms of different ownership of Kyiv, Lviv, Cherkasy, Zhytomyr, Poltava, Odessa regions and Autonomous Republic Crimea. Totally in all experiments we used samples of blood serum from 217 sheep of various breeds and ages groups. Detection of antibodies to the *T. gondii* agent in blood serum was carried out using reagents for ELISA detection of total antibodies to *Toxoplasma gondii* «VectoToxo-antibodies» (manufacturer Closed Joint-Stock Company «Vector-Best», Russian Federation) according to manufacturer's instruction for screening investigations.

RESULTS AND THEIR DISCUSSION

At the first time in Ukraine was revealed presence of the antibodies to *T. gondii* among investigated blood serum of sheep during the research work. There was 68 samples of animals or 31,34 % which was positive to agent *T. gondii* and 149 samples or 68,66 % showed a negative result.

Among the investigated 117 samples blood serum of sheep positive was 41 (35,04 %), and negative – 76 (64,96 %). Meanwhile among the investigated 73 samples of blood serum of sheep

males 23 samples were positive (31,51 %) and 50 – negative (68,49 %). Thus, the significant difference between male and female sheep for detection of antibodies to the Toxoplasmosis agent haven't been identified.

An important feature of animals Toxoplasmosis including sheep is the extensiveness of infection which increase with age. Thus, in the group of animals under one year among investigated 54 sheep reacted positively 19 (35,19 %) and negative – 35 (64,81 %) (see Table). Among the investigated animals from one to two years old from 66 samples of blood serum were positive 27 (40,91 %) and negative – 39 (59,09 %).

According to the results of the blood serum investigation the highest extensity of Toxoplasmosis infection was found among sheep of Zhytomyr region (see Figure). There were 6 or 85,71 % positive and the negative – one (14,29 %) from the 7 investigated blood serums. Somewhat less was extensity of infection of investigated animals Kyiv region. Among 14 serum blood samples positive according to the interpretation ELISA results were 11 (78,57 %). In this case, the negative were only 3 samples or 21,43 %.

At 32,42 % less positive reaction on agent *T. gondii* animals was found in the Odessa region in comparison with the results of investigations Kyiv region. Thus, of the 39 examined blood sera reacted positively 18 (46,15 %), negative – 21, or 53,85 %.

25 % of positive samples of blood serum were detected among the sheep of Cherkasy and Poltava regions. In these regions were investigated 40 and 24 animals respectively.

Among investigated 68 samples of blood serum of sheep AR Crimea farms 13 or 19,12 % were positive and 55 (80,88 %) – negative respectively.

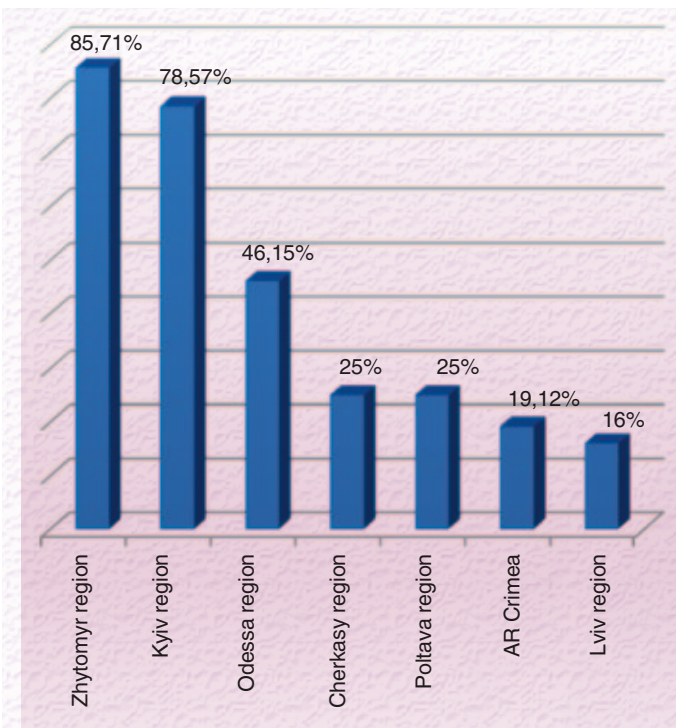
The lowest Toxoplasmosis invasion extensity was detected among 25 investigated animals of Lviv region. Positive were 4 (16 %) and negative – 21 (84 %).

CONCLUSIONS

1. Toxoplasmosis is a wide spread invasion sheep disease in Ukraine.
2. 31,34 % of sheep of farms in 6 regions of Ukraine and AR Crimea infected by agent of Toxoplasmosis. Extensiveness of in-

Таблиця – Prevalence of Toxoplasmosis according to age of sheep (n = 120)

Groups of animals by age	Number of animals in group	Positive reaction on Toxoplasmosis		Negative reaction on Toxoplasmosis	
		number of animals	%	number of animals	%
Under 1 year	54	19	35,19	35	64,81
From 1 to 2 years	66	27	40,91	39	59,09



Distribution of sheep Toxoplasmosis in farms of some regions of Ukraine

vasion is from 16 % (Lviv region) to 85,71 % (Zhytomyr region).

3. There was no significant difference between Toxoplasma infection of males and females. Among males positively reacting to antibodies of agent was 31,51 % and among females – 35,04 %.

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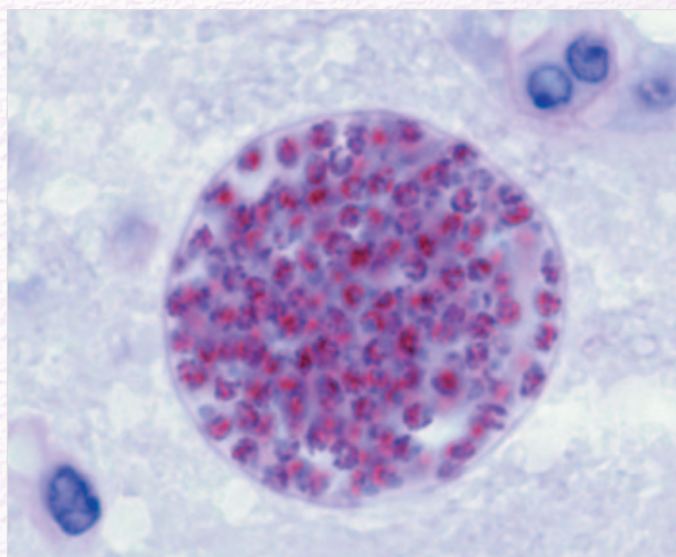
Поширення токсоплазмозу овець в Україні. М.В. Галат

У статті наведено результати досліджень сироваток крові овець з метою виявлення антитіл до збудника *Toxoplasma gondii*. Отримані дані стосуються поширення токсоплазмозу серед різних вікових груп овець у деяких областях України та АР Крим, а також залежності екстенсивності інвазії від статі тварини.

Распространение токсоплазмоза овец в Украине. М.В. Галат

В статье приведены результаты исследований сывороток крови овец с целью обнаружения в них антител к возбудителю *Toxoplasma gondii*. Полученные данные касаются распространения токсоплазмоза среди разных возрастных групп овец в некоторых областях Украины и АР Крым, а также зависимости экстенсивности инвазии от пола животного. ☉

З версією статті українською мовою можна ознайомитися на web-сторінці журналу – <http://vmu.org.ua>



Toxoplasma gondii tissue cyst

