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Determination of the Effectiveness of Antgelmintics Against Trematodoses of Cattle in the Fergana Region

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Abstract: This article examines the effectiveness of a specific type of antihelminthic medication called FLUCONIX-340, which is produced in the Netherlands and has a hydrometer concentration of -10%. The medication is used to treat trematodoses, a type of parasitic infection, in naturally infected cattle. The treatment is carried out in a joint venture between Uzbekistan, the United Kingdom, and Russia, specifically through the Ozbiocombinate LLC company.

Keywords: Fasciola hepatica, Fasciola gigantica, L.auricularia, L.bactriana, trematode, helminth, macrogelminthoscopy.

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Introduction

Significance of the subject matter. Trematodes, with over 5,000 species, are the most extensive class of flatworms that have fully transitioned into a parasitic lifestyle. 50% of these species are classified as fish parasites, whereas the remaining species are parasites of other vertebrates. Approximately 5,000 species of trematodes infect birds, mammals (including agricultural animals), and cause various trematodose diseases in them. Over 30 species of these organisms inhabit the human body. Both humans and farm animals are susceptible to some trematodes.

Several studies have been conducted in our country to battle and prevent helminthoses, including trematodoses. Numerous anthelmintic medications have been utilized for this purpose. Due to the rapid growth of veterinary pharmacy worldwide in recent years, our country has also started production of various forms of anthelmintic medications. There have been no comparison studies conducted to examine the use of these medications against cow trematodoses. The suggested quantities and forms of these drugs vary in their composition and active ingredients, making it difficult to compare their effectiveness. Consequently, we have employed anthelmintic medications in our research, which are manufactured by various methods and formulations.

When combating and preventing trematode infections in cattle, it is important to consider the territorial epizootiological characteristics and the intensity of disease invasion. It is recommended to enhance the prevention and treatment of the disease based on the medications' mode of action, application techniques, and cost.

Various preparations, including four-chlorine carbon, hexachloroethane, hexachloroparaxylol, hexichol, bitional, sulfene, diamphenetide, zanil, phasinex, dovenix, rafoxanide, and dertil, have long been utilized for the treatment of fasciolosis caused by trematodes. Nevertheless, there has been an increase in the introduction of novel pharmaceutical drugs from foreign countries into our nation in recent years, leading to the emergence of private veterinary pharmacies. Consequently, there was a shift in the pharmaceuticals employed to treat fasciolosis, with newer medications replacing the previous anthelmintics. Some examples of these novel chemical preparations include albendazole (sold under several brand names such as Alben, albendazole, albenol, Albazen, albendex, mesalben, brovalzen, bendaz, etc.), as well as other chemical preparations like rolenol, brontel, clozantel, kombitrem, and fascoside.

Methods of inspection. The experiments were conducted using partial pathologoanatomic methodologies, including epizootological, clinical, macrogelmintoscopic, and gelmintoovoscopic techniques (namely, the Foulleborn and sequential washing procedures). Prior to helminthization of all calves in the tests, the level of harm caused by trematodoses was assessed to evaluate the efficacy of the antgelmintics being examined. He analyzed samples of rats weighing around 5 grams, which were collected from cattle, using the gelmintoovoscopic examination method. The examination was conducted utilizing a sequential washing approach. Furthermore, these examinations were conducted on the 14th and 21st day, as well as the 45th day, following the administration of the medications. During these investigations, the release of trematode eggs in the muck samples of cattle was noticed. For our experimental study on liver trematodoses, specifically fasciolysis, we selected a total of 40 cattle. These cattle were then divided into 3 groups, with 10 animals in each group. The study was conducted under natural conditions.

During the antihelminthic testing method, the potential harm of liver trematode infections in cattle was investigated before to providing the drug. Antihelminthic drugs were then administered according to a specific guideline, and the subsequent results were obtained: Furthermore, during our research, on the 45th day after administering helminthicization, we conducted an examination of 5 samples from cattle in both groups where the drug was administered. It was observed that in their samples, there was a partial release of small amounts of Fasciola and dicrocelium eggs. The medications studied were shown to be ineffective in treating the acute course of fasciolosis.

Subject and scope of research. The studies were conducted on cattle of the golishtin breed, which naturally suffered from damage, at the "Sururi" farm in Shabboda, located in the Fergana region of Uzbekistan. The qaromols that were extracted were categorized into four classes according to analog principles. The first group of naturally infected cattle received an injection of 1.0 ml per 10 kg of body weight of Antgelminthig of helminthol (a suspension containing 75 mg albendazole and 50 mg oxyclozanide) produced by a joint venture between Uzbekistan, the United Kingdom, and Russia (biveco). The second experimental group received an injection of 1.0 ml per 10 kg of body weight of Antgelminthig of dewormer -10% produced in Iordonia (containing 10% fenbendazole) at a dosage of 3.75 ml per weight. Cattle in the third group received an injection of 1.5 ml of the Dutch-manufactured drug FLUCONIX-340, which contained 340 mg of nitroxinyl in a 1 ml suspension, per 50 kg of live weight. Fourteen days after administering antihelminthic drugs, samples of feces were collected from the experimental cattle. These samples were then examined using helminthocoprological examination methods, specifically sequential washing and Foulleborn methods.

Findings of the research. Table 1 displays the findings of the experiment.

Table 1.

Effectiveness of the action of drugs on cattle trematodoses on a farm specialized in breeding, livestock" shabboda sururi " in Furqat District of Fergana region

Groups	Livestok number	Name of drug	Doze	Effect of the drug on helminths	Effectiveness, %
1	10	Gelmintol	10 kg per body weight 1 ml	8 trematodes eggs were not found in the head coramole	80
2	10	DEVORMER - 10% ,	20kg per body weight 1 ml	9 trematodes eggs were not found in the head coramole	90
3	10	FLUCONIX-340	10 kg per body weight 1 ml	trematodes eggs were not found	100

When samples were collected from the initial group of cattle 14 days after helminthicization and analyzed using a sequential washing approach, the efficacy of helminthol antgelminthyge was shown to be 80% in cases where trematode eggs were not detected in 8 specific individuals. In the second trial group, where cattle were administered antihelminthic medication called DEVORMER -10%, trematode eggs were not detected in 9 out of the total number of cattle. In one head of cattle, the presence of Fasciola eggs was eliminated. The drug demonstrated an efficacy rate of 90 percent. No trematode eggs were detected in the animals who received the third experimental treatment, the ANTGELMINTIGI FLUCONIX-340. The efficiency reached a perfect score of 100 percent.

During our research, we conducted coprological tests on cattle in the experiment. We specifically focused on the maturation of trematode larvae to assess the effectiveness of these new treatments against the acute, or tissue flow, juvenile form of liver trematodoses. In order to accomplish this, we performed a re-gelmintovoscopic examination 21 days following the administration of the medication to the calves in both the experimental and control groups. After 21 days, the muck samples of 8 Heads of cattle that were administered Gelmintol and DEVORMER -10% suspension showed the existence of 2-3 copies of Fasciola and 1 Copy of dicrocellium eggs. No trematode eggs were detected in the cattle that received the anthelmintic Fluconix-340.

Conclusion. Ozbiocombinate LLC was discovered to create 80% of helminthol in the Uzbekistan - UK - Russia joint venture (biveco) among antihelminthic medications. In Iordonia, it yielded 90% of fiose and 10% of Devormer. Additionally, when the Dutch-made drug FLUCONIX-340 was employed against trematodose triggers, it achieved 100% effectiveness in treating cattle.

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