SIR Publishers
CENTER FOR INTERNATIONAL SCIENTIFIC PUBLICATIONS
JOURNAL OF VETERINARY SCIENCE
ISSN(Online): 2984-7966
SJIF Impact Factor |(2024): 6.559|
Volume-7, Issue-2, Published |20-02-2024|

METHODS OF DIAGNOSIS OF HELMINTHIASIS IN VETERINARY MEDICINE (ACCORDING TO LITERATURE ANALYSIS)

https://doi.org/10.5281/zenodo.10681952

Rakhimberganov B.Sh
"Organization of veterinary work and veterinary sanitary expertise" department assistant
Ashirov.H.B
"Tashkent branch of the Samarkand State University of Veterinary Medicine, Animal Husbandry and Biotechnology" student:;
Ibodullayev D.R
"Tashkent branch of the Samarkand State University of Veterinary Medicine, Animal Husbandry and Biotechnology" student:
Musurmonov M.B
"Tashkent branch of the Samarkand State University of Veterinary Medicine, Animal Husbandry and Biotechnology" student:

ANNOTATION

The article describes the methods of correct diagnosis of helminthic diseases of agricultural animals while alive and after death based on literature analysis.

Keywords

Helmintocaprological, qualitative helmintocaprological, fluatasia, fulliborne method, calantaryan method, sherbovich method, darling method, berman-orlov method, vayda method.

Enter. Nowadays, invasive diseases are common among farm animals in veterinary practice, In many cases, as a result of timely implementation of veterinary measures aimed at preventing invasive diseases of agricultural animals, morbidity and economic losses among agricultural animals are increasing.

It is known that not only in the field of veterinary medicine, but also in the field of medicine, it is very important to correctly identify (diagnostic) the disease, to make an accurate diagnosis (diagnosis). Before establishing preventive and treatment measures against various infectious, invasive and non-infectious diseases of livestock, including helminthiasis, it is necessary to make a correct diagnosis of the disease, determine the degree of spread of the disease, and the characteristics of its course. Only when the correct diagnosis is made, the drugs prescribed and used against the disease, the implemented measures can give good results. Diagnosis of helminthiasis is carried out by several methods. These methods are divided into

SIR Publishers
CENTER FOR INTERNATIONAL SCIENTIFIC PUBLICATIONS
JOURNAL OF VETERINARY SCIENCE
ISSN(Online): 2984-7966
SJIF Impact Factor |(2024): 6.559|
Volume-7, Issue-2, Published |20-02-2024|

two types depending on the time of application: methods for making a diagnosis while the animal is alive and methods for making a diagnosis after the animal has died or been slaughtered. These methods also consist of several types depending on the object and methods of verification. [4]

There are 2 different ways to detect helminthiasis in animals

1. Detection of helminthic diseases in animals during life
2. Methods of detecting diseases after death of animals.

In the detection of helminthic diseases during the life of animals, we focus on the following:

1. Clinical signs of the disease
2. To special laboratory test
3. To the results of immunobiological reactions

The clinical symptoms of the disease include the clinical symptoms characteristic of helminthiasis, i.e., central nervous system failure in senurosis, blood dripping from the skin in parafilariasis, keratitis and conjunctivitis in the eye in theliaziosis, which are very rare is typical.

In many helminthic diseases, clinical signs are of a general nature, and therefore it is not possible to diagnose the disease based on them.

A special laboratory examination is conducted to identify the disease. Adult parasites parasitizing in the animal body can lay eggs during their development and reproduction, and some of them can give birth to live larvae.

Depending on the location of the parasite, eggs and larvae of parasites can be released from the body of the host with various excreta and secretions, or they can accumulate in the body.

The main purpose of the special laboratory examination is to check the excreta and secretions from the body, as well as the tissues and cells by various methods, and establish the presence of parasite eggs and larvae in them.

However, most of the helminths parasitizing the body parasitize the digestive organs or related organs. For this reason, a helmintocaprological examination is carried out in the laboratory examination.

Helmintocaprology is a test for the presence of helminth eggs, larvae and larvae in the feces of animals.

This check is carried out in 2 different ways:

1. Qualitative helmintocaprological examination
2. Amount helmintocaprological examination

The purpose of the qualitative helmintocaprological examination is to confirm the diagnosis by examining the animal droppings and finding the eggs, larvae or joints of the parasites in it.[1;2]

SIR Publishers
CENTER FOR INTERNATIONAL SCIENTIFIC PUBLICATIONS
JOURNAL OF VETERINARY SCIENCE
ISSN(Online): 2984-7966
SJIF Impact Factor |(2024): 6.559|
Volume-7, Issue-2, Published |20-02-2024|

The purpose of the quantitative helmintocaprological examination is to examine animal feces, find eggs, larvae and even the parasite itself, determine its quantity or determine the intensity of infestation.

Qualitative helmintocaprological examination methods include:

1. Macrogelmintoskopiya
2. Helminthoovoscopy
3. Helmintolarvoscopy.

Macrohelminthoscopy is a method of finding the parasite itself or its joint in feces.

The method of helmintoovoscopy is a method of finding parasite eggs by examining feces

- The method of removing excrement from around the anus (oxyurosis).
- The method of preparing a simple ointment (a less effective method).
- The method of Fluatation of helminth eggs (by hatching).[4]

Fulliborne method - We use a saturated solution of NaCl salt to check with the Fulliborne method. 350-400 g of NaCI is added to each liter of water. The specific gravity of a saturated solution is 1.18.

To carry out this method, take a special glass, put 5-10 g of dung in it, and put a little saturated solution of NaCI on it and mix well. Then a saturated solution of NaCl salt is added, that is, it should be in a ratio of 1:20. Mix again, then strain through a wire mesh or cheesecloth into a clean glass. The filtered sample is left in a place where it does not move for 30-40 minutes. After 30-40 minutes, a wire loop is removed, a few drops of liquid are taken from the surface of the solution, transferred to the glass of the object, the coverslip is covered with glass, and examined under a microscope.

Kalantarian method Instead of a saturated solution of NaCl salt, sodium nitrate salt (NaNO3) is used. To prepare a saturated solution, add 1 kg of sodium nitrate to 1 liter of water. The relative weight is 1.4. The Kalantarian method is checked in the same way as the Fulliborn method.

Sherbovich method - with this method, we use a saturated solution of magnesium sulfate salt to check feces. 920.0 magnesium sulfate is added to 1 liter of boiling water. This method is similar to the Fulliborn method.

Darling method - First, we lower the eggs to the sediment and then float them a second time. 5-10 g of dung is taken into a glass to be tested by the Darling method. Clean water is poured over it, then mixed thoroughly, the mixture is filtered through a wire mesh into a clean container, and the mixture is placed in centrifuge tubes. The test tube is placed in a centrifuge and spun at a speed of 1000 revolutions for 5 minutes.

SIR Publishers
CENTER FOR INTERNATIONAL SCIENTIFIC PUBLICATIONS
JOURNAL OF VETERINARY SCIENCE
ISSN(Online): 2984-7966
SJIF Impact Factor |(2024): 6.559|
Volume-7, Issue-2, Published |20-02-2024|

After that, the test tube is removed and the liquid part is poured, and Darling's liquid is poured over the sediment (Darling's liquid composition: a mixture of a saturated solution of table salt and glycerin solution in equal amounts). Then put the mixture in a centrifuge and spin it for 5 minutes at a speed of 1000 revolutions. After that, the centrifuge tubes are slowly placed on the stand, a few drops are taken with a wire hook, transferred to the glass slide, and the coverslip is covered with glass and examined under a microscope.

The method of helmintolarvoscopy is to check the dung of animals and find the larvae of parasites in it, to confirm the diagnosis.

Berman-Orolov method - Berman's method was recommended to find the larvae of soil nematopods, and then Orlov's method was recommended to find the larvae of pathogens in diseases of dictyokaulosis, prostrongylosis.

The Berman-Orlov method is implemented as follows:

A funnel with a length of 10-15 cm is taken on the upper side, a 10-15 cm long hose is passed to the lower end, and the end is clamped with a Mor clamp. A wire mesh or gauze is placed inside the funnel and 10-15 grams of dung is dropped into a container filled with warm water at a temperature of 30-40C. Then Mor's clamp is slightly loosened, we collect the liquid flowing into centrifuge tubes and centrifuge for 2-3 minutes. Then the liquid part is removed, and the solid part is placed in a glass slide or Petri dish and examined under a microscope. We see that there are mobile larvae in it. The longer we keep the dung in water, the more the number of larvae will increase, but sheep dung should not be kept for more than 6 hours, and cattle dung should not be kept for more than 11 hours. Because the eggs of other strongylate larvae can hatch during this period.

Vayda method - Used to check spherical dung. The method of performing this method: put 4-5 freshly separated dung balls in a Petri dish and pour a little warm water over them. After 40 minutes, the stool is removed and the liquid is examined under a microscope. The efficiency of the method is low, so it is used only for the detection of dictiocaulosis. It is not used to determine prostrongylatosis.

Simplified method of larvoscopy - We wrap 5-10 g of freshly separated manure in cheesecloth and put it in a 30-50 ml glass. We pour 37-400C warm water over it. After 6 hours, we can remove the gauze wrapped in sheep and goat dung, and the gauze wrapped in cattle dung after 12 hours. Leave the remaining liquid in a quiet place for 10-15 minutes, then drain the liquid and put the dark part on a glass slide (size 7x10 cm) and examine it under a microscope.

Methods of helminthoscopy are based on differences in the specific gravity of the liquid mixed with the examined feces samples and the specific gravity of the helminth eggs. According to the ratio between the specific weights of these two

JOURNAL OF VETERINARY SCIENCE
ISSN(Online): 2984-7966
SJIF Impact Factor |(2024): 6.559|
Volume-7, Issue-2, Published |20-02-2024|

components, there will be flatation (floating on the surface of the liquid) and sedimentation (sediment) methods.[7]

Methods of flatting of helminth eggs

Fulliborne method - a saturated solution of table salt (specific gravity equal to 1.18) is used to float helminth eggs to the liquid surface. It is prepared in the following way: dissolve 380 grams of table salt in 1 liter of boiling water and filter it through two or three layers of cheesecloth. For testing, take 5-10 g of dung and put it in a glass, first mix it with a slightly saturated solution of table salt, then add 20 parts of saturated solution of table salt to 1 part of dung. The resulting mixture is mixed with a glass rod and filtered through a wire mesh or cheesecloth. This mixture is left to rest for 40 min. . Then, the surface helminth eggs were removed from the sample using a wire hook, transferred to a glass slide, and each drop was covered with a separate cover glass and examined under a microscope. The sample can dry out quickly, especially at hot temperatures, so it is important to check the sample as soon as it is prepared. To prevent the sample from drying out, water is dripped under the cover glass with a pipette.

5-10.0 dung is taken into a glass for testing by the Darling method. Clean water is poured over it, then mixed thoroughly, the mixture is filtered through a wire mesh into a clean container, and the mixture is placed in centrifuge tubes. The test tube is placed in a centrifuge and spun at a speed of 1000 revolutions for 5 minutes. [3:4] After that, the test tube is removed and the liquid part is poured, and Darling's liquid is poured over the precipitate (the composition of Darling's liquid: a mixture of equal amounts of a saturated solution of NaCl salt and a solution of glycerin). Then put the mixture in a centrifuge and spin it for 5 minutes at a speed of 1000 revolutions. After that, the centrifuge tubes are slowly placed on the stand, a few drops are taken with a wire loop, transferred to the glass, and the blood vessel is covered with a glass and examined under a microscope.

The standardized Fulliborn method is designed to determine the level of helminth infection of an animal, i.e., the intensity of infestation, and it is used to compare the amount of helminths in the body of different animals and to get an estimate of their number. With this method, it is possible to determine the effectiveness of deworming and compare the effectiveness of one or another anthelmintic. The procedure of the standardized fulliborin method is the same as that of the simple fulliborin method, in which the average number of eggs in 3 drops taken from faecal samples before and after deworming, or the number of drops found in all 3 drops, is determined and the intensity of infestation is concluded. Using this method, it is possible to obtain information about the intensity of deworming (IS) using the following formula.

JOURNAL OF VETERINARY SCIENCE
ISSN(Online): 2984-7966
SJIF Impact Factor |(2024): 6.559|
Volume-7, Issue-2, Published |20-02-2024|

In this: $IS=100 - \frac{N \times n}{N1 \quad n1} \times 100$

Here, after N-deworming (Experimental group), the number of helminth eggs found in animal feces;

N1 - number of helminth eggs found in animal dung before deworming (control group);

n- number of infected animals after deworming (Experimental group);

n1 is the number of infected animals before deworming (control group).

In the standardized method of helminthovoscopy, it is required that the same amount (8-10 g) of feces samples, the same size cups, one wire should be used, and the same number of drops taken from the sample should be the same (3 or 4-5). [6]

LIST OF USED LITERATURE:

1. Xaqberdiyev P.S., Qurbonov Sh.X.. Parazitologiya fanidan amaliy va labaratoriya mashg‘lotlari. O‘quv qo‘llanma.
2. Dadayev S., Abdurahmonov G.. Umumiy parazitologiya. Darslik.Guluston-2015.
3. Isakova D.T., Shakarboyev E.B.. Veterinariya Parazitologiyasi Kasb-hunar kollejlari uchun o‘quv qo‘llanma. Toshkent«noshir»2017.
4. Oripov A.O. v.f.d ; G‘ofurov A.G‘.v.f.d.; Yo‘ldoshov N.E. v.f.n.; Jabborov Sh.A, Davlatov R.B., G‘oyipova M E .. Qishlok xo‘jalik hayvonlarining parazitologiya va invazion kasalliklari. Darslik. Toshkent – 2023.
5. Yuldoshev N.E. Gelmintozlarning oldini olishning yangi uslib va vositalari. // Veterinariya tibbiyoti. Toshkent-2018. №3
6. Raximberganov B.Sh “Echkilar strangilyatozlarini tarqalishi va oldini olish tadbirlari” magistirlik dissertatsiya Samarqand-2023
7. Абуладзе К.И., Демидов Н.В., Непоклонов А.А., НикольскийЭ С.Н. Павлова Н.В., Степанов А.В.. Паразитология и инвазионные болезни сельскохозяйственных животных Москва во “Агропромиздат” 1990г