Manual

On harmful pesticides of domestic animals and the usage of medicines against them, which are produced in our country



MINISTRY OF AGRICULTURE AND ENVIRONMENAL PROTECTION OF TURKMENISTAN

TURKMEN AGRICULTURAL UNIVERSITY NAMED AFTER S.A.NIYAZOV

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Manual

On harmful pesticides of domestic animals and the usage of medicines against them, which are produced in our country

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The quality of agricultural products is declining because the household animals carry contagious, skin and blood-parasite diseases due to the impact of harmful insects and chiggers.

This manual gives information about the harmful insects and skinburrowing animals, i.e. chiggers, which economically damage the cattle breeding industry preventive fighting measures against them and medical remedies for curing the infected animals againt the harmful diseases, which are caused by those insects. Manual under consideration provides its readers with a broad insight on preparing medical remedies from the local raw materials for healing the infected domestic animals, moreover it precisely explains how to use those medical remedies.

This manual is intended for the people who work in the industry of cattle breeding, for the students and teachers of the higher educational establishments faculties' which are specialized for cattle breeding and animal veterinary.

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INTRODUCTION

In the era of the Revival of a new epoch of a powerful Independent state, thanks to the wise leadership of our esteemed President national educational system is thoroughly improving and the works are carried out for implementing the latest scientific achievements and technical innovations into agriculture and cattle breeding industry of our country.

Our respected President pays great attention to the development of the agricultural branch of the national economy since the food prosperity of our nation depends on this particular field. All the conditions and possibilities for herdsmen are created in order to increase the numbers of cattle, and increase the food products, which are manufactured in order to satisfy the needs of nation for meat and dairy products.

The most important agricultural tasks are to create the food prosperity among the nation, to meet the needs of the nation for meat and dairy products, to increase the numbers of cattle, to increase the production of products and to improve the quality of them. In order to complete these tasks, cattle-breeders must fight with the economically damaging insects for agricultural industry and use the latest scientific achievements in production effectively. The followings are the most harmful infectious insects for domestic animals: parasites with two wings, jumpers, bloodsuckers and wolfarto flies, parasitoform and akariform chiggers. According to our climatic conditions, scientists are working on to create preventive measures for fighting against the pesticides, which live all over the country and harm the cattle breeding industry. Such preventive measures must be scientifically approved and implemented continuously not only for the sake of keeping the numbers of cattle safe and sound, but also raising the productiveness of those domestic animals. Because some or another type of pesticides, sometimes many types of pesticides at the same time (in a season) attack as a group to the domestic animals and disturb them, consequently, the productiveness of domestic animals is halted and their health is greatly deteriorated.

For that reason, it is important to implement the effective methods enhanced with technological innovations for creating preventive measures and for fighting against the harmful insects and chiggers, which economically damage the cattlebreeding industry of agriculture.

I. PESTS OF DOMESTIC ANIMALS AND DISEASES THEY CAUSE

In the climatic conditions of Turkmenistan, several species of chiggers and insects harm domestic animals. These include acariform and parasitoform flies, wasps, wound maggots and other flies, lice and fleas. These pests cause great damage to livestock since most of them are carriers of infectious and parasitic diseases, cause serious diseases in livestock because of mass destruction, and cause enormous economic damage to livestock.

II. SKIN DISEASES CAUSED BY ACARIFORM CHIGGERS

Acariformes type chiggers are the most widespread and major pests of livestock. Acariform mites are very small, being 0.1-0.2 mm in size, and are rarely visible to the naked eye.

Acariform fleas are free-living fleas; many of them suck fluids from the animal's body and release a poisonous saliva that causes swelling and all kinds of skin diseases. Among the acariform chiggers, species that cause different types of scabies in cattle are widespread. Among them, ticks that cause skin diseases of agricultural animals and scabies are considered. They include the families Sarcoptidae, Psoroptidae, Chorioptidae and Epidermoptidae. Small, eyeless, white chiggers cause scabies. Their development period consists of egg creating, stage of protonymph, stage of telenymph and pupal stage. The entire development period of these chiggers takes place on the host's skin.

Skin diseases of black cattle. Psoroptosis, sarcoptosis and chorioptosis forms of rabies are found in black cattle. Psoroptes, Horioptes and Sarcoptes chiggers in black cattle cause these diseases. Psoroptes chiggers frequently attack the domestic animals, while Sarcoptes and Horioptes ones attack them less frequently.

Psoroptosis disease mainly affects young animals. Psoroptes chiggers tend to be slightly larger than the other chiggers. These chiggers are found only in black cattle and do not harm other domestic animals. In autumn, the disease spreads rapidly and widely. Picture number I shows the appearance of an animal with psoroptosis.



Picture 1. Black cattle with psoroptosis rabies

Symptoms of the disease. This disease first spreads from the top of the neck in black cattle, from the side, at the base of the horn, at the base of the trunk in black cattle, and from there through the girdle to the back. A bubbly glue-like liquid oozes from the site of the blisters, ruffling the fur of the animal's skin. Then blisters appear, and the oozing glue-like fluid dries up and thickens, causing crusts to form. Then the hairs in those areas fall out, and a bare area is formed on the skin. The locusts move incessantly where they are located, that is, by moving from one place to another, they cause strong irritation in the skin, and when animals rub those places with their teeth to relieve themselves, favorable conditions are created for the wound to intensify and the locusts to spread widely. Animals with such diseases are very weak, have low blood pressure, lethargy, even they walk with difficulty, and cows stop giving milk.

Chorioptes spathiferis bovis Chorioptosis scabies caused by chiggers. They are small, being 0.2-0.3 mm in size. These chiggers are similar to Psoroptes chiggers. Their mass damage to livestock depends on the weather conditions of the year, that is, they attack domestic animals more frequently in winter, and less frequently in spring and summer.

Symptoms of the disease. This type of disease first starts from the hollows on both sides of the trunk of black cattle and at the base of the trunk, and over time, a dry scaly crust is formed on those places. As the cattle scratch their itching areas, the scabies spreads to the entire skin of the animal. Then it hardens and turns into thick crusts. The hair from the areas occupied by the locusts is shed, and the locusts spread around the trunk, gradually reaching the back and neck of the animal. In some animals, it first starts at the base of the ankle, then gradually spreads to the top of the leg and all over the body. Picture 2 shows the appearance of an animal with chorioptosis.



Picture 2. Chorioptoz gotur keselli sygyr

Sarcoptes scabies is a disease caused by Sarsoptes scabiei bovis ticks. These caterpillars of black cattle are small, white, 0.2-0.3 mm long. These locusts attack more en masse, mainly in autumn and winter.

Symptoms of the disease. The primary location of sarsoptes lice and where the itchiness begins is the upper lids of the eye. The warts then spread to the neck and other parts of the body.

Over time, the hair in the areas where the moles are located falls out and hard layers of skin appear. The thickness of the thick layers is up to 1 cm, and the height of the skin of the neck is up to 3-5 cm. If not prevented during this disease, scabies covers the entire skin of the animal. Because of the mass invasion of the skin of the calves by scabies, their bodies deteriorate gradually and they eventually die.

In order to diagnose Sarcoptic mange in black cattle, it is necessary to pay attention to the season of occurrence of the disease, clinical signs, and the intensity of itching and the spread of the disease in the body. Picture 3 shows a bull with rabies.



Picture 3. An ox that suffers from sarsoptez scabiei bovis rabies

Skin diseases of sheep. There are four types of scabies in sheep: psoroptosis, sarcoptosis, chorioptosis, and psorergatosis. The most common of them is Psoroptes longirostris ovis (Pic. 4).

Psoroptosis scabies of sheep. This disease is mainly found in sheep which have thin wool. The disease is transmitted to healthy sheep through contact with sick sheep, through sheep equipment, shepherds' work clothes, woolen coats, wool, etc. Chiggers move quickly, especially when sheep stay in narrow, narrow beds during the winter.

In winter, the high durability of sheep's skin and wool has a strong influence on the growth of fleas that cause scabies. In dry weather, especially in the spring, the skin of the sheep decreases rapidly. After molting, the mites burrow into the skin folds, moving to the eyelids, ear lobes, and the folds under the base of the tail. In mid-autumn, as the sheep's wool grows and becomes more durable, chigger begin to multiply rapidly. Psoroptosis spreads rapidly among sheep, and if left untreated, rabies can soon engulf the entire flock. Psoroptes grasshoppers cannot survive more than 2-3 weeks outside the sheep's body. The disease is mostly severe in young, weak and thin-bred sheep.

Symptoms of the disease. Psoroptosis occurs in acute, subacute, continuous and indistinct states. Acute and subacute forms occur when sheep are not kept in satisfactory conditions.



Picture 4. Scabies, Psoroptez longirostris ovis, occupying most of the sheep's skin.

In the acute form of the disease, scabies can cover the entire body of the sheep and it may die after 2-2.5 months in winter and 3-4 months in severe cases. In its continuous form, it can last for many months, with the arrival of winter, the occurrence of the disease intensifies, and in the spring and summer months, it does not indicate whether the sheep has scabies or not.

Sarcoptic mange of sheep. The disease produces small, egg-laying mites 0.2-0.3 mm in size. Their permanent hosts are sheep, and optional hosts are goats, pigs and humans. This rabies disease is usually found only in large-haired sheep. Compared to sheep, lambs are more affected by this disease.

Symptoms of the disease. Scabies is most common on the head of sheep, but also on the upper lip, mouth cavity, around the nostrils, front of the muzzle, ears, eyes and eyelids. Pimples appear on the skin affected by scabies, which then turn into sores. Over time, the sores harden, scabs and cuts form, and the pus oozes with blood, and the disease progresses day by day.

Skin diseases of goats. In goats, psoroptosis, sarcoptosis, and chorioptosis are common forms of rabies.

Sarcoptic mange in goats. A more severe form of mange is sarcoptic mange. Although sarcoptic mange is a rare disease, it causes significant economic damage to the people who raises goats and earns their living. Sarsoptes ssabiei saprae forms goat sarcoptic mange. Their size is 2-3 mm, and their main host is a goat, i.e. they mostly live in goats. The temporary carriers are cattle, horses, pigs and humans.

Symptoms of the disease. These chiggers first spread to the goat's head, around the nose and mouth, the front of the muzzle, and then to the legs and body. In those places, button-shaped blisters appear, and the surface is covered with a viscous liquid. Then it gradually dries up and becomes crusty and gray crusts form, the hair falls out, the skin becomes dry and itchy, and the lips and feet become swollen. Goats are severely abused and emaciated, their fatness drops below the minimum level by 40-50% and if not treated in time, 50% of goats die. Picture 5 shows areas of sarcoptes fungus damage around the goat's mouth and nose.



Picture 5. Sarcoptes scurvy, a goat with sarcoptic mange

Psoroptosis rabies of goats. Psoroptosis of goats is caused by the grasshopper species Psoroptes longirostris. Their size is 4-6 mm, and they differ slightly from other ticks that cause scabies in goats.

Symptoms of the disease. Their transmission is similar to that of the Sarsoptes vultures, ie they are mostly in the ear. The auditory canal of the inner surface of the eardrum is completely covered by a thick brown shell. Both ears of the goat are blocked and he cannot hear. The sick goat is stopped from eating grass, it becomes dirty, the inner and joint part of the ear swells, and the goat dies as a result of the aggravation of the disease. When Psoroptes grasshoppers gather in a mass hoof, the hairs fall off, the entire area is covered with hard layers, i.e. scabies, the goat limps, and it becomes difficult to walk. Determining the presence of psoroptes ticks in goats is carried out by acariological tests.

Chorioptosis rabies of goats. Chorioptosis scabies of goats is transmitted by the grasshopper Chorioptes spathiferus saprae.

Symptoms of the disease. This type of fungus causes scabies. The disease first starts on both sides of the cattle's neck, then spreads to the back and tail. In the stomach, it moves to the side, under the abdomen and to the chest. On the skin of goats, where Chorioptes mites are located, the skin first sheds, then thick, yellowish crusts form in those areas. The skin becomes irritated, dry, and cracked. The disease progresses slowly. The white blood cells of the diseased animal are enlarged. Goats are more susceptible to acariform ticks than sheep. When fighting, first of all, attention should be paid to the condition of the animals, their care and feeding.

Equine Skin Diseases. There are three types of scabies in horses: psoroptosis, sarcoptosis, and chorioptosis.

Psoroptosis scabies of horses. It is one of the most common diseases. The causative agent of psoroptosis is the species of grasshopper, Psoroptes langirostris. The length of the male is 0.4-0.5 mm, the width is 0.3 mm, the length of the male is 0.6-0.8 mm, the width is 0.4 mm.

Symptoms of the disease. The disease begins in autumn (October-November). It reaches its peak during the winter months (December-February). The disease is primarily transmitted to horses when they contact with infected horses, by horse carriers, and by various equine equipment. In the summer months, the disease is latent. Usually, the duration of the disease is 5-12 days during the cold season. The disease first appears in the horse's groin, at the base of the tail, and in the groin, then from those places, except for the lower part of the legs, it spreads to all other parts of the body and begins to progress. After the horses have run away from their roosting grounds, they start to squirm. The area of the diseased area is initially two to three times the size of a penny, and is limited by the surrounding healthy skin. A large amount of pus-like liquid is released from the top of such a furnace, which mixes with the horse's hair and turns into a large, large, pus-like lump. After the hair is shed from the affected area, thick crusts form on the affected area. When the disease is allowed to develop without care, the horse becomes emaciated, weak, less able to work, and more susceptible to colds and other illnesses. In most cases, the disease worsens, and purulent rashes appear on the skin. If not treated early in the course of the disease, it can last for several months.

Equine sarcoptic mange. Sarcoptic mange in horses causing great economic damage. Horses suffer from this disease and become completely unfit for work. Sarsoptes ssabiei is the causative agent of this disease. The body length of males is 0.27 mm, the width is 0.13 mm, the length of the chest is 0.45 mm, the width is 0.35 mm. Contact between healthy horses and sick horses can occur through horses that have previously been infected with the disease, or through equipment used in horse riding.

Symptoms of the disease. The typical infectious period of the disease lasts 6-10 days. In sick horses, it starts on the side, on the withers, or on the border of the hoof, and in riding horses, on the back, and from there it spreads over the whole body.

After Sarsoptes ticks settle on the body, severe itching occurs, especially at night, and button-shaped blisters form in those places. They soon fall off or become

a hard crust. The first scab is shaped like a small grain, and then it gradually expands in size. The disease is characterized by dry and scaly skin. If left untreated, the horse becomes emaciated, feels weak, and eats without appetite. The disease progresses over time, and the horse dies from inflammation of the lungs, kidneys, or purulent skin, as well as from the poisoning of the whole body by disease-spreading germs in the blood.

In March and May, the disease is exacerbated by the mass invasion of Sarsoptes beetles. In summer, the disease suddenly decreases, and in winter it increases again.

Equine sarcoptic mange can be transmitted to both livestock and humans. Picture 6 shows an example of sarcoptes ticks occupying about half of the horse's skin.



Picture 6. Chorioptosis in horses with sarcoptic mange. This disease is rare in horses.

The causative agent of this disease is Chorioptes spathiferus. Males of Chorioptes grasshoppers are 0.2-0.3 mm long, 0.1-0.2 mm wide, females are 0.5-0.7 mm long, 0.2-0.3 mm wide. is equal to These blisters are mainly found in the sand dunes above the hoofs of the horses' hind legs. This form of scabies in horses is known as foot scabies.

In general, autumn and winter months appear in names, and spring months are reduced, and do not even indicate their existence. This disease is a slow-spreading disease among horses.

Symptoms of the disease. The disease first appears between the hooves on the side of the hoof, and then gradually spreads to the horse's hock and knee joint, and in horses, to the stomach and scrotum. The top layer of the skin is covered with

sebum, and over time, those areas turn into a thick crust, then the crust thickens and blisters form. The disease initially resembles eczema, followed by severe itching. A horse can't stand the irritation, and when standing, it shifts from one leg to the other, hisses, beats the ground with its foot, and bites the mange with its teeth to relieve itself. A diseased leg is more severe in horses with thick and long hair.

This disease is determined by the presence or absence of ticks as a result of acariological tests, taking a sample of the diseased area of the horse's skin during the season of the disease. Chorioptosis differs from persistent eczema in that eczema flares up in the spring and subsides in the winter.

Preventive and therapeutic measures. Diseased and suspected diseased horses should be removed from stables and their stalls and equipment used for horses should be treated with insecticides. The sick horse should be shaved off the hair of the diseased area and its surroundings and washed with soap in warm water of 50-60oC, then sprinkled with a 0.02% water solution of 10% Cypermethrin drug. It is more convenient to use insectocaricide "Oil", insectocaricide "Black oil", "Sulfur oil - SO" and "Sulfur oil - W". Horses should be bathed every 10-15 days with insecticides and repellents to protect them from acariform chiggers and other blood-sucking pests.

Skin disease of camels. Sarcoptic mange only occurs in camels. This disease is caused by Sarsoptes ssabiei sameli mosquitoes. The length of their males is 0.226-0.288 mm, width is 0.156-0.204 mm, the length of their females is 0.504 mm, the width is 0.360 mm.

Symptoms of the disease. The first symptoms of the disease appear on the upper part of the camel's skin. More specifically, it begins to appear in the groin areas, the knees and the abdomen. It then quickly spreads throughout the body and causes severe irritation. In areas where the disease has spread to the skin, large amounts of crusts form and the skin becomes scaly and scaly. In the cases, oozing sores can also be seen in damaged areas of the skin. A sick camel is so debilitated that one cannot even look at its appearance. A camel with sarcoptic mange is usually irritable and dies after 2-3 months if not treated in time. Figure 7 shows the onset of scabies on the upper side of the camel's neck.



Picture 7. **A camel with rabies**

Preventive and therapeutic measures. Various ointments are recommended for the treatment of rabies in camels. Preventive measures should be taken according to veterinary regulations, that is, cleanliness and regular washing every 8-10 days with insectocaricidal drugs.

Skin diseases of rabbits. Rabbits are infected with Psoroptes and Chorioptes, which cause scabies, and Sarcoptes and Notothres, which cause itchiness. Mostly, psoroptes chiggers dominate. Sarcoptes, Notoetres, and Chorioptes, which cause irritation, are rare.

Psoroptosis skin disease of rabbits. It's a disease of locusts The psoroptosis forms a cuniculi. The length of their men 0.4-0.6 mm wide, 0.3-0.4 mm long, 0.4-0.8 mm long, 0.3-0.5 mm wide. This type of eardrum moves mainly in the outer auditory canal of the ear. They are capable of mass invasions in areas where hygiene standards are not observed. The time of year when this rabies disease occurs in rabbits it depends on the season. That is, in winter and early spring (December-March) is widely distributed. Summer (May-August) months are decreasing. This rabies disease mainly affects rabbits over one year old. The disease is transmitted by rabbits (and mother rabbits) that carry the disease.

Symptoms of the disease. Redness of the damaged areas of the skin and increased excretory activity of the skin cells are the first symptoms of the disease. Then several parts of the epidermis (upper layer) of the skin are damaged, the flesh tissues become soft, the skin fibers become inactive, and inflammation begins in the damaged areas. The rash often spreads to the inner and middle ear and even to the brain. When Psoroptes grasshoppers invade in mass, rabbits feel very hard, grow slowly, and reproduction decreases. When this happens, the rabbits' brains swell, causing them to die.

The illness lasts only 10-18 days. The disease can be mild or severe. When the disease is mild, a small amount of psoroptosis can be seen in the eardrum and external auditory canal. In this case, the ears first have small, brown-colored bumps, then they become crusty and occasionally itchy.

In severe cases, the disease becomes widespread, which affects the base of the earlobe, the sleeve, the back, the front and back legs, and between the paws. The inner part of the eardrum is filled with layers of shells. Thick yellow pus begins to flow from the ear canal. The rabbit is in critical condition with swelling of the base and middle of the ear and the brain. Even more likely is meningitis (inflammation of the meninges), in which rabbits lose balance, sway from side to side when walking, sometimes fall, and roll their heads from side to side through their necks. If not treated in time, the disease ends with the death of the rabbit. Picture 8 shows a rabbit with psoroptosis.



Picture 8. Rabbit with psoroptosis rabies

Chorioptosis rabies in rabbits. This disease is caused by a species of locust, Chorioptes spathiferus sunisuli. The male of this grasshopper is 0.235 mm long and 0.170 mm wide, and the male is 0.345 mm long and 0.205 mm wide. These mites feed mainly on the cells of the epidermis (outer layer) of the ear.

Symptoms of the disease. This disease also occurs in the ear. But compared to scabies, it goes slowly. In the fall, especially in the winter, the disease is widespread, intensifies and reduces the productivity of rabbits, and in the spring and summer they disappear. Rabbits are often infected by contact, as well as through equipment. The disease is more severe in rabbits that suffer from poor nutrition and maintenance.

Itchy rabies in rabbits. Scabies is caused by two types of ticks. The locust species Notoedres sati sanisuli causes notoedosis scabies and Sarsoptes ssabiei sanisuli causes sarcoptic mange. Male Notoedres sati sunisuli 0.149 mm long, 0.120 mm wide, body length 0.225 mm, 0.170 mm wide, male Sarsoptes sabiei sunisuli 0.220 mm long, 0.162 mm wide, body length 0.114 mm, width 0.112 mm.

Symptoms of the disease. Scabies covers the sides of the rabbit's nose, lips, muzzle, between the cheeks, the edges of the face and the base of the ears. Then, the paws and other parts of the front and back legs are covered with thick white or gray scales. There is a strong itching in those places, and rabbits can't stand it, and they scratch the place with their legs and teeth, which allows the diseased area to expand and strengthen. As a result, the rabbits become inactive, emaciated, and die after a few days.

Preventive and therapeutic measures. It is advantageous to use currently widely used insectocaricidal veterinary drugs (mainly pyrethroids) to carry out preventive and therapeutic measures against rabies in rabbits. Also, it is more effective to use insecticides "Fresh oil", "Sulphur oil-W", "Sulphur oil-SO" and

"Black oil", which are cheaper and environmentally friendly, and are prepared from local raw materials in our country. and advantageous.

Skin diseases of chickens. Chicken rabies occurs in their separate areas. More precisely, the scabies disease of Knemidopsotes gallinae and Epidermopteses bilobatus grasshoppers occurs on the feathers and under the wings of chickens. Cnemidocoptes scabies on individual parts of the body is caused by the species Cnemidosoptesgallinae. Their males are 0.17 mm long and 0.25 mm wide, and their thoraxes are 0.28 mm long and 0.33 mm wide. Their hosts are live worm hunters.

These types of grasshoppers attack chickens en masse in the spring. In autumn and winter, they disappear almost entirely, but with the arrival of spring, they appear again. Epidermoptes bilobatus species of locust also causes cnemidocoptosis scabies on individual parts of the body. Their females are 0.20 mm long and 0.12 mm wide, and males are 0.23 mm long and 0.13 mm wide. They settle just under the epidermis (the top layer of skin) between the hairs at the base of chicken wings. This species of locust plays a key role in the transmission of infectious scabies among chickens.

Symptoms of the disease. A sick chicken's scabies starts from the girdle, a thin red rash extends through the thigh to the back, abdomen, and in some cases to the sleeve and head, which is covered by a thin scab. Infected hens shed their feathers, become emaciated, and their egg production is reduced or stopped altogether. When rabies is severe, chickens die. If the causative agent of scabies is Epidermoptes bilobatus, the disease starts on the head, neck and breast of chickens. If Rivoltasia bifursata is a type of hives, it starts on the back, in the groin area, and then spreads to the entire body. If not prevented during this disease, the chicken will quickly degenerate and often die (Figure 9).



Picture 9. Chicken with skin disease

III. SKIN DISEASES CAUSED BY PARASITOFORM FUNCTIONS

Parasitoform mosquitoes are carriers of blood-parasitic (transmissible) diseases. These belong to the Ihodidae, Agrasidae, and Samasoidae families, and Ixod beetles play an important role in causing cattle skin disease.

Locusts, also known as ixod or meadow locusts, are ubiquitous. They feed on the blood of domestic and wild animals and can live on the skin of animals and in the environment.

Ixodes are free-living insects that transmit parasitic and infectious diseases to livestock and humans. They are mainly the causative agents of piroplasmosis (theileriosis, babesiosis, anaplasmosis) in agricultural animals.

They also disturb cattle by biting and sucking their blood, reducing their productivity and causing skin lesions. Cattle bite down on a dormant wound with their teeth, which causes the wound to expand. As a result, the skin dries out, thickens and loses its elasticity, and fine and hard layers appear. Bleeding from wounds attracts live maggots and other bugs. As a result of maggots from infected flies, the wound expands and deepens. The poisonous saliva of grasshoppers Ihodes pilosus, Ihodes holosiolus is so powerful, especially in young calves, lambs, lambs, goats and dogs, that they even reach the point of hypothermia and die. As a result, they cause great economic damage to people and agriculture. Warts can be found on the ears, head, neck, chest, rump, underarms, groin and other hot spots of animals. Ixodes attack cattle from early April to early November, depending on the temperature in temperate regions. The mass attack season is from the beginning of May to the end of September (Picture 10).



Picture 10. Ihod is the locust's blood-sucking moment

Control measures against parasitoid parasites of cattle. In case of detection of infected animals in the household, treatment and preventive measures are carried out according to veterinary regulations. All farm animals are treated with different types of acaricidal drugs (liquid, ash, oil). Medicines and methods of their use are selected depending on the season, the type of livestock and the prevalence of the disease.

Today, several effective drugs against infectious and pathogenic fungi are widely used. They mainly belong to groups of organophosphorus insecticides

(diazinon, sebasil, etc.) and artificial pyrethroids (deltamethrin, neostomazan, cypermethrin).

These drugs are acutely active substances and are used in the form of a solution in accordance with the requirements of special regulations.

Due to the long duration of the hot season in our conditions, locusts attack en masse from the beginning of May to the end of September. During that period, it is considered more effective to regularly wash the cattle's skin by spraying it with insectacaricidal drugs every 8-10 days.

In the cold season, it is more convenient to use our insectacaricide "Oil", "Sulphur oil-W", "Sulfur oil-SO" and insectocaricide "Black oil", insectocaricide "Bentophos" for the control measures.

IV. INSECTS AND THE SKIN DISEASES THEY CAUSE

There are two main species of beetles belonging to the genus Gupoderma, the common sea buckthorn beetle (Gupoderma bovis) and the southern red beetle (Gupoderma lineatum). Insects are not bloodsuckers (they generally live without food) because their oral cavity is not developed. They do not live long, i.e. they live off their food during the larval stage, and the males die 20-25 days after mating and spawning (seeding). When fleas attack, they lay their eggs in the wooly part of the cattle's skin. Worms (maggots) emerge from the eggs and pierce the cattle's skin, causing a chronic skin-hypodermatosis disease under the skin.



Picture 11. It's the time when the caterpillar emerges from the skin

Skin disease (hypodermatosis) of black cattle. The Gupoderma bovis species of beetle is widespread in the northern regions of the Earth, because this species is adapted to live in cold climates. Gupoderma lineatum species are heat-loving beetles. Their flight period in our country is divided into two parts throughout the year: the 1st period lasts from the beginning of April to the end of June, and the 2nd period lasts from the third decade of September to the end of October. In northern countries, they are in flight from June to September. They fly and lay their eggs on the skin of cattle. As a result of mass infestations of cattle, subcutaneous

mites cause distress to cattle and reduce milk production. Their worms make holes in the skin of the animals and damage them and reduce the market value of the products.

In the livestock sector of the country, black cattle are of great importance in providing our population with milk and meat products. All dairy products and 50% of meat products are produced by black cattle. Also, leather products, i.e. leather, are produced from black leather, which is necessary for the production of shoes and outerwear, which the population wants. As a result of the mass invasion of cattle, the skin of black cattle is damaged by holes. This causes the quality of the leather product to decrease and its value to decrease.

Control measures against skin-hypadermatosis disease of black cattle. In the past, several methods of combating the skin bug disease, their damage to the countryside and the public economy, and their subcutaneous worms on the backs of cattle (do not squeeze them out by hand, kill them with a hard object) have been used. At present, preventive measures are carried out against the disease, such as treatment with insectocaricidal detergents in spring, spring, summer (mainly for subcutaneous worms), and vaccination with drugs based on ivermectin and aversect in autumn.

Several drugs are widely used in veterinary medicine for this purpose. These drugs are mainly produced abroad, and some of them (chlorofos, karbofos) are environmentally harmful substances, so their use is restricted in several countries. In our country, to fight skin-hypadermatosis disease of cattle, it is better to use insectocaricidal castor oil drugs (Fresh Castor Oil, Sulfur Castor Oil-W, Sulfur Castor Oil-SO and Black Castor Oil) prepared from local raw materials. It's affordable and affordable.

V. WOLFARTO FLIES CAUSING RABIES (MIAZ) IN CATTLE WOUNDS

Wolffowl (Wohlfahrthia magnifica) are generally warm weather creatures. They are often found in sandy areas, infesting the wounds of domestic animals, and are mostly in flight from early May to late September. During this period, they reproduce 5 times. At one time, 100-200 caterpillars, which are 1.4 millimeters in size, are released into the wounds and skin damage of cattle and other warm-blooded animals.

Wolfartiosis is a disease caused by wolfarto mites on the wounded skin of cattle. These flies are very anxious when they fly and come close to the trees. A single mosquito can disturb several flocks at the same time. Wolfarto mosquitoes are able to locate sheep by smelling wounds and skin damage. They can drop their larvae into wounds several times. Hundreds of caterpillars of various stages can be seen in those wounds (Picture 12).

If injured cattle are left untreated after slaughter, the wound from which the larvae of the wolfarto fly have fallen will expand, fester, and damage the flesh tissue. A sick sheep does not graze well, lags behind the herd, sleeps quickly, and gets tired quickly. Critically ill people die in comas.



Picture 12. This is when the Wolfarto mosquito lays its maggots on a wounded area of the animal's skin

Measures to control lupus. Cattle should be clinically examined frequently during the growing season (mainly the shearing period) to detect the disease in time. Diseased animals should be treated and treated in time. Different types of insecticides (liquid, powder, aerosol, ointment) should be selected depending on the transmission, spread and size of the disease.

Worm-infested wounds of cattle should be treated first with a solution of insecticides, then dry or ointment forms of drugs should be used, and mosquito repellants should be treated.

In cases of slow wound healing, the treatment should be repeated every 5-8 days. In cases of widespread disease, livestock should be treated with insecticide solutions.

In order to prevent Wolfartiosis, it is necessary to follow the rules of hygiene when animals are exposed to water, to cut cows and camels in time before the heat drops and before the flies start to fly, and to mow young animals. During the slaughtering, the body of the animal should not be injured, and the injured animals should be given veterinary assistance immediately. These measures prevent the mass spread of the disease.

VI. SKIN DISEASES CAUSED BY LICE AND FLEAS

Lice. Lice are tiny wingless blood-sucking creatures, 2-5 millimeters long, that live permanently on the body of animals. Lice do not have eyes, but they have multi-jointed antennae for smelling and three pairs of strongly developed clawed legs. They live in the skin of animals for up to two months and outside the skin for up to 10 days.



Picture 13. Stenocephalus sanis damaged the skin of the dog flea.

Depending on the type of animal, the lice they have are also different. Haematopinus asini in horses, Haematopinus eurysternus in cattle, as well as Linognathus vituli and Linognatus sapillatus species are free. Linognatus ovillus in sheep, Linognatus pedalis in goats, Michrothorachius chameli in camels, Linognathus setosus in dogs, and Haemodipsus ventricosus in rabbits. These lice are not found in chickens, ducks and geese.

A disease caused by lice on the skin of cattle is called siphunculatosis. On the skin of infected animals, lice cause itchiness and itching by sucking blood. Animals are annoying, constantly scratching the area where they sleep, leading to damage to the skin. In the case of a mass spread of lice on the skin of animals, they are wasted and productivity is reduced.

Fleas. Fleas are small, temporary external blood-sucking pests that attack animals and humans. The length of fleas ranges from 0.75 to 5-7 millimeters, and when they are fed with blood, they can reach 10 millimeters. They are capable of living outside the skin for long periods of time.

Some species of fleas live from 100-500 days to 5 years. Fleas in dogs Stenocephalides sanis; C. in cats felis S. saprae; Spilopsillus sunisuli in rabbits; Tunga penetranus in pigs; Echidnophaga gallinacea in birds and Vermipsylla alasurt in horses; Pulex irritans species are found in humans.

When fleas completely occupy the hairy skin of cattle and birds, they become very troublesome. Animals scratch the bite with their teeth, and chickens scratch with their claws, resulting in a wound. Fleas can be carriers and transmitters of some infectious diseases (brucellosis, scabies, measles, listeriosis, distemper, and others). Small animals can also be intermediate carriers of helminthiasis (dipilidiosis).

VII. MEDICINES PREPARED FROM LOCAL RAW MATERIALS AGAINST SKIN DISEASES

One of the important problems in animal husbandry veterinary science is the preparation of highly effective medicinal products from local natural raw materials against skin diseases of black cattle, cows, camels, horses, birds and other domestic animals. That's why

Using volumes II, III, IV and VI of the multi-volume scientific encyclopedic books "Medicinal plants of Turkmenistan" of the honorable President, it is affordable, available, environmentally friendly, and local veterinarian for use in our conditions against insects and ticks that damage the skin of cattle. we aimed to develop medicines. As a result of targeted research, several types of veterinary drugs have been developed to combat external pests of pets. These topical agents have been tested in laboratory and industrial settings to ensure that they are safe, effective and affordable for users. Also, regulatory technical documents of drugs were prepared, approved by the relevant organizations, and some of them were put into production.

Currently, various types of insectacaricidal drugs are being developed against livestock pests. They are mainly in liquid form and are sprayed on animals with sprayers, dipped in water in special troughs and washed off. These methods are mainly suitable for use during the rainy season. In the cold season, it is not useful to treat animals by watering them with a solution of drugs, that is, various inflammatory diseases occur due to a decrease in the temperature of the body of animals. Therefore, insecticides should not be used in autumn and winter.

The main difference of our new medicinal product is that most of them are made of local raw materials, and the cost is low, and it can be used at any time of the year regardless of weather conditions.

Insectocaricide "Fresh oil" drug.

This drug is intended for use against external pests of cattle, cattle, horses, camels, birds, rabbits, dogs and cats (psoroptoses, sarcoptoses, fleas, lice, mealybugs and flagellates, grasshoppers, flies). The medicine is prepared from environmentally friendly local raw materials.

Pharmacological properties. 98% of the composition of Insectocaricide "Fresh Oil" is made from local raw materials, i.e. oil waste, cottonseed oil residue (soapstock) and insectocaricides and stabilizers as active ingredients. Due to the well-chosen composition of the drug, it has an acute and long-lasting effect on acariform and ixod ticks, lice, fleas. In addition, the drug has a repellent effect against zoophilic and wolfarto mosquitoes, and has wound-healing and regenerating (tissue, cell regeneration) properties (Pic. 14).



Picture 14. Insectocaricide "Fresh oil" drug

After 24 hours, the drug "Chalgy Yag" was 100% effective against acariform fungi under laboratory conditions. When the toxicity of the drug was studied in animals, no additional changes in the body and skin were detected even when the amount of the drug was increased several times. It was found that the compounds belong to group IV, which is less harmful when applied to the skin of animals. With repeated use, the drug has a weak local irritant effect on the skin.

Application of the medicine. The drug is used only externally for the treatment and prevention of skin diseases in animals.

In black cattle: Ixodes locusts belonging to the genus Ixodes

Hyalomma, Rhipicephalus, Boophilus, Haemophisalis, Dermacentor species; acariform grasshoppers (Psoroptes bovis, Sarcoptes bovis,

Demodex bovis); woolly eaters (Bovicola bovis); lice (Haematopinus eurysternus, Linogathus vituli);

In domestic animals: Ixodes of the genus Haemophisalus Hyalomma, Rhipicephalus, Boophilus species; acariform grasshoppers (Psoroptes ovis, Sarcoptes ovis, Sarcoptes caprae, Chorioptes ovis, Chorioptes caprae); wool eaters (Bovicla ovis, Bovicola caprae); lice (Linognathus ovinus, Linognathus pedalis, Linognathus caprae);

In horses: Hyalomma, Dermacentor genera of Ixodes fungi; to acariform grasshoppers (Psoroptes equi, Sarcoptes equi, Chorioptes equi); wool eaters (Biocola equi); lice (Haemotopinus asini);

In camels: Hyalomma, Rhipicephalus, Boophilus, Haemophisalis, Dermacentor species, acariform ticks (Psoroptes camels, Sarcoptes camels, Demodex camels); wool eaters (Bovicola camels); lice (Haematopinus eurysternus, Linogathus vituli);

In pets (dogs and cats): to acariform fungi (Sarcoptes canis, Notoedrescati, Othodectes cynotis, Demodex canis, Chetletiella jascuri, Chetletiella blakei); fleas (Ctenocephalides canis, Ctenocephalides felis); wool eaters (Trichodectes canis); refers to lice (Linognathus setosus).

The drug should be applied with a brush or a stick with a thick end, including the damaged part of the animal's skin, including the healthy area around it. If lice or

fleas have taken over the skin of the animal, it should be struck behind the ear, from the sleeve to the tip of the tail. To protect animals from ticks, they should treat their blood-sucking areas (the throat of the ears, the bottom of the chest, the inside of the legs, the tail and the bottom of the belly). The amount of the drug to be injected can be from 3 to 30 grams, depending on the type of animal, its age and the size of the diseased area of the skin. If most of the animal's skin is affected by the disease, it should be applied to one-fourth of the body, and the rest of the body should be applied gradually after 10-12 days. Many types of livestock pests attack en masse, especially in autumn and winter. Liquid insecticides should not be used in the cold season. "Chaly yog" medicine can be used throughout the year. This is the main difference between this medicine.

Security measures. When treating animals, it is recommended to wear special protective equipment (rubber gloves, mouth-nose cover, etc.). Wash hands thoroughly with soap and water after work. The drug should be stored in special rooms, in places where there are no foodstuffs, food and water, out of the reach of strangers and children. If the medicine accidentally gets in the eyes or on the skin, remove it with a cotton or cotton swab and wash it in warm water with baking soda or soap.

Insectocaricide "Black oil" drug.

Insectocaricide "Black oil" drug is effective against external pests of cattle and birds - parasitic parasitiform ticks (ixod, argas, gamaz), acariform ticks (psoroptes, sarcoptes, otodectes, chorioptes, demodeces), blood-sucking harmful insects (fleas, lice, against wood lice, silkworms, wool and feather eaters) and against maggots in wounds, as an aqueous solution of the drug for use against twowinged bloodsuckers that damage livestock (bees, flies, ants, maggots, fleas and biting flies) and livestock. It is also intended for desaccharization and disinfection in poultry houses.

Pharmacological properties. Black oil medicine is a completely (100%) local raw material product, and it is a thick oil that is prepared by special artificial method from the balls (shells) of dovars. Due to the favorable relationship of various natural substances in its composition, it has properties such as insecticidal, repellent, wound-healing, cell and tissue regeneration, and long-lasting effect against external pests of animals (pic. 15).



Picture 15. Insectocaricide "Black oil" drug

Black oil medicine is a thick black colored, oily liquid substance with a strong unpleasant odor. A thick emulsion is formed when dissolved in hot water.

The drug is considered the most environmentally safe product, because it is made from natural raw materials and does not contain additional stabilizers and preservatives. The drug "Chalygi oil" does not have properties such as accumulation of toxic substances in the body (cumulative), absorption into the skin (resorptive) and sensitivity to foreign stimuli (sensitizing). According to the level of danger, it belongs to group IV, that is, low-hazardous substances.

Application of the medicine. "Black oil medicine is mixed with water and used as an emulsion in the form of spraying to protect animals from external pests and by rubbing and rubbing against the diseases they cause. Also, the water emulsion of the drug is used for preventive and forced treatment in livestock and poultry farms, for the destruction of equipment, tools, mosquito larvae, decarcinization, disinfection and washing of the skin of animals.

Black oil medicine is used from 5 to 35 grams, depending on the type of animal, its age and the size of the diseased area of the skin. If psoroptosis and sarcoptosis fungi have damaged most of the animal's skin, then it should be cut to a quarter. The remaining areas should be treated gradually after 10-12 days. Second treatment of diseased animals should be carried out after 10-15 days depending on the progression of the disease. The shelf life of the drug is 5 years.

Security measures. When treating animals, it is recommended to wear special protective equipment (rubber gloves, mouth-nose cover, etc.). Wash hands thoroughly with soap and water after work. The drug should be stored in special rooms, in places where there are no foodstuffs, food and water, out of the reach of strangers and children. If the medicine accidentally gets in the eyes or on the skin, remove it with a cotton or cotton swab and wash it in warm water with baking soda or soap.

"Sulphurous oil-W" drug is used to control acariforms (sarcoptes, psoroptes, otodectes), ixod grasshoppers, lice, fleas, wool eaters, wolfarto and other flies, and to prevent and treat diseases caused by them. intended for

Pharmacological properties. "Sulphur oil-W" medicinal composition consists of vaseline, local natural sulfur ash, insectocaricides and stabilizers.

Due to the well-combined and selected ingredients, sulfur-rich castor oil has wound softening and healing, tissue regenerating, anti-inflammatory, and at the same time insectocaricidal effects against external pests of the skin. When applied to the skin of animals, it was found that the level of toxicity of sulfur belongs to weakly toxic compounds, that is, group IV. The shelf life of the drug is 4 years under storage conditions (+250C) (Fig. 16).



Picture 16. Sulfuric acid-W is a medicine

Application of the medicine. The drug is used only by external application against skin diseases caused by acariforms, ixod flies and other insect pests. Before treatment, the damaged area of the skin and the wool of the surrounding area of 20-25 cm3 should be shaved and cleaned. Then, carefully add the healthy area around the damaged area of the body's skin and tap it with a brush or a stick with a needle wound on the tip.

Depending on the type, age, condition, spread of the disease and size of the animal, the drug is used in the range of 3-30 g. If the rabies completely covers the outer skin of the animal, then depending on the condition of the animal (health, fatness, age, type), one third of the body should be treated, and the rest of the body should be treated gradually after 10-12 days. must pass.

The effectiveness of "Sulfurized oil-W" medicinal product was determined in research-experiments conducted in laboratory and industrial conditions. It was determined that the drug was 95-97% effective against external parasites that cause skin diseases, and 100% effective after 8-10 days of second application.

However, it has been proven that it does not have any unpleasant or harmful effects on the body and skin of animals. Compared with chemical insecticides or

injectable drugs imported from abroad for the prevention and treatment of skin diseases, the drug "Sulphur chalgi oil-W" is ten times cheaper than the cost of local raw materials, and it is also environmentally friendly. differs in that it is relatively harmless.

Sulfuric acid-SO drug.

The drug "Sulphurous oil-SO" is intended for the control of acariform and ixod beetles, lice, fleas, silkworms and wool-eating insects, as well as for the prevention and treatment of diseases caused by them.

Pharmacological properties. The composition of "Sulfur Sulfur Oil - SO" medicine consists of natural sulfur ash, petroleum waste, cotton gin residue (soap stock) and stabilizers.

Due to the substances stored in the composition of the drug, sulfur oil has the properties of softening and healing wounds, soothing itching and affecting insects that damage the skin. It was found that the level of toxicity of the drug belongs to weakly toxic compounds, that is, group IV. The shelf life of the drug is 4 years under storage conditions ($+25^{\circ}$ C) (Fig. 17).



Picture 17. "Sulfurized tallow-SO" medicine

Application of the medicine. The drug is used only externally for skin diseases caused by acariforms, ixod flies and other insect pests.

Before using the medicine, clean the affected area of the skin and the wool around it, and apply it with a brush or a stick with a thick end, including the healthy area around the damaged area of the body. The amount of medicine used is between 4 and 40 g, depending on the species, age and size of the diseased area.

If the skin diseases of the animals are more widespread, then depending on the condition of the animal, one third of the body should be treated, and the other parts should be treated gradually after 10-12 days.

In laboratory and industrial tests, the effectiveness of "Sulfurized Castor Oil-SO" was determined to be 90-92% effective for skin diseases after one application, and 98-100% effective after a week's second application. However, it has been proven that it does not have any unpleasant or harmful effects on the body and skin of animals.

"Sulfurized castor oil-SO" medicine differs from foreign veterinary medicines in that its cost is several times lower due to the use of local raw materials for its preparation, and it is harmless to animals.

As a result of the conducted studies, it was proved that the drug "Kukutli chalgy oil-SO" is suitable and effective for wide use in animal husbandry in the control of external pests of animals, in the prevention and treatment of diseases.

Insectocaricide "Bentofos" insecticide.

Insectocaricide ''Bentofos'' powder is intended for use against external pests of cattle and birds, harmful insects in cattle sheds, wool and leather stores, disease-transmitting mosquitoes.

Pharmacological properties. Insectocaricide ash medicine is white in color and consists of the main active ingredient - insectocaricide and bentonite ash, a local raw material, as a bulking and binding additive. It belongs to the group of drugs with moderate toxicity to animals and belongs to group III.

The main part of the composition of the drug consists of bentonite ash, the agent has hydrophilic (absorbs liquid drugs), adsorptive (solvent absorbing) and catalytic (intensifying effect) properties. Due to these characteristics, when cattle and livestock are treated against pests with the drug, it absorbs moisture, expands in size and becomes more elastic, the duration of the effect of the drug increases several times compared to other pesticides. "Bentofos" fungicide is environmentally friendly and is very advantageous to use in the livestock industry.



Picture 18. Insectocaricide Bentophos fungicide

That is, the drug can be used in all seasons (winter, spring, summer and autumn). The drug can be used in the form of dry powder depending on the type of pests and diseases that are affecting the livestock.

Application of the medicine. "Bentofos" insectocaricidal powder is used only externally against harmful insects and ectoparasites of disease-transmitting ticks in cattle, camels, cattle, horses, dogs, cats and poultry, wool and skin warehouses (pic.18).

In livestock: Used against ticks, acariform mites, wool eaters, lice.

In agriculture: It is used against Ixodes mites, acariform mites, wool eaters, lice.

In horses: Used against ixod ticks, acaiiform ticks, wool eaters, lice.

In dogs and cats: used against acariform ticks, fleas, wool eaters, fleas.

In birds: used against acariform flies, flea and chigger eaters.

They treat sick, dead, injured animals and birds by putting the medicine in a special bag, rubbing it on their skin, wool, and spraying it in wet barns.

The amount of drug consumption (depending on the impact of locusts and other pests) is 150-250 g for black cattle, 250-300 g for camels and horses, cows and pigs.

30-50 g is equivalent to 15-20 g for dogs and cats and 2-5 g for birds. Treated animals are monitored around the clock. The drug is used in the amount of 200-250 g per 1 square meter against insects that are harmful to disease-carrying insects in cattle sheds. Prior to treatment, cattle sheds should undergo mechanical cleaning.

Re-treatment of cattle sheds, poultry houses, wool and leather warehouses is carried out for 15-20 days when the need arises. When the drug is used against external pests of birds, it should be mixed in a ratio of 1:2 with dry matter and placed in a corner of the poultry houses so that the birds can get into the drug mixture. The medicinal mixture should be renewed every 20-25 days.

VIII. IMPROVED MEDICINES FOR THE TREATMENT OF BLOOD-PARASITIC DISEASES OF ANIMALS

External pests of agricultural animals (parasitoform flies, two-winged bloodsuckers) cause not only skin diseases, but also seasonal (transmissible) blood-parasitic diseases (piroplasmosis and trypanasomosis). Blood-parasitic diseases are transmitted to cattle and cattle by grasshoppers, and to camels by blood-sucking vultures. As a result of disturbance of these animals, their productivity decreases. If veterinary measures are not taken to prevent disease, animals die. Scientists of the Animal Husbandry and Veterinary Science-Production Center of the Turkmen Agricultural University named after S.A. Niyazov have developed and put into production a number of medicines for the prevention and treatment of blood-parasitic diseases of cattle. The preparation of these medicines in an improved method and the long shelf life (prolonged) nature and availability distinguish it from other similar products imported from abroad.

Medicine Teilrecid-A. This medicinal product is used for preventive and therapeutic measures against theileriosis (Theileria annulata), piroplasmosis (Piroplasma bigeminum), babesiosis (Babesia bovis), which are blood-parasitic diseases of black cattle. Due to the fact that the prolonging supplements in the system, when the vaccine is given against the disease, the duration of effectiveness

lasts for a long time compared to other methods. This is the main feature of the drug (Figure 19).

When using Teilerecid-A for the prevention of blood-parasitic diseases, it should be injected subcutaneously at the dose of 0.05 ml/kg every 25-30 days from April to October. The same amount (0.05 ml/kg) should be injected into the meat tissue of the diseased animal even when the blood-parasitic disease is treated with the drug. The duration of treatment of a sick animal can be from 2-3 to 5-6 months, depending on the severity of the disease.



Picture 19. The drug "Tayloracid-A"

Teilrecid-G is a drug. "Theilereside-G" drug is used to treat blood-parasitic diseases of cattle, piroplasmosis (Piroplasma ovis), babesiosis (Babesia ovis), theileriosis (Theileria recondita, Theileria ovis) is intended for prevention and treatment.

The prevention and treatment of hematoparasitic diseases of cattle with the drug "Teilecid-G" is the same as the use of the drug "Teilecid-A" against blood-parasitic diseases of black cattle. For disease prevention, cattle should be injected subcutaneously at a dose of 0.05 ml/kg every 25-30 days from April to October.

For the treatment of blood-parasitic diseases of cattle, "Teilerecid- The dose of "G" drug used in black cattle is 0.05 ml/kg (1.0 ml per 20 kg live weight) and should be injected subcutaneously. Vaccination is carried out for 1-2 to 4-5 months until the diseased animal recovers (Fig. 20).



Picture 20. The drug "Tayloracid-G".

"Teilerecid-D" drug: "Teilerecid-D" drug is intended for the prevention and treatment of blood-parasitic trypanosomosis (water sickness) of camels.

The difference between hemoparasitic disease of camels is that bloodparasitic disease of camels is transmitted to cattle and cattle by ixod grasshoppers, and to camels in our conditions, 7 species of blood-sucking mosquitoes (Atylotus pulsellus carybenthinus, A. Flavoguttatus, Tabanus leleani leleani, T. autumnalis autumnalis and others)) passes.

The duration of their flight is from the second half of April to the end of the first decade of November. The high flying season is from the beginning of May to the end of September. When used as a preventive measure, the drug is injected subcutaneously into the camel at the rate of 0.06 ml/kg (6.0 ml per 100 kg body weight) every 30 days from the beginning of the disease season until the end of the disease season from April to October.

In the treatment of blood-parasitic trypanosomosis (water sickness) of camels, 0.06 ml/kg is injected into the meat of the affected camel and the camel is kept in a clean cool place. Vaccination is repeated for 4-5 months until the diseased camel is cured (Figure 21).



Picture 21. Teilrecid-D is a drug

Monezide is a drug. "Monezid" drug is used for helminthic diseases of cattle, that is, monesia (Monezia expansa, Monezia benedeni,

It is intended to fight against Monezia autumnalia, Monezia skrjabini, Monezia kuznetsovi, Monezi alba). The most common gastrointestinal helminthic diseases are: moniosis (worm disease), dictyocaulosis (worm disease), trichostrongylosis (worm disease), fascioliasis (liver worm disease), echinococcosis and others. Of these, the most common among lambs and causing great economic damage to the farm is moneziosis, a disease caused by a roundworm.



Figure 22. Packaged tablets of the drug Monezide

The main sources of monesiosis are fishes and small oribatid (Acariformes: Oribatidai) mosquitoes that carry the eggs of the disease-causing moneas in damp, grassy, wet areas. When lambs are fed, they ingest grass and grasshoppers and become ill. The drug "Monozide" is a blue yellow substance, the majority of its composition is local agents (Fig. 22).

For the treatment of cattle with intestinal worms, the drug is given at the rate of 0.5 g to lambs with mild disease and 1 g to lambs and sheep with severe disease. In early spring, to prevent cattle moniosis, 25-30 days after the cattle are taken out to pasture, they should be dewormed with the drug "Monezid". Also, preventive treatment should be carried out every 2-2.5 months.

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TURKMEN AGRICULTURAL UNIVERSITY NAMED AFTER S.A.NIYAZOV

ANIMAL HUSBANDRY AND VETERINARY SCIENTIFIC-MANUFACTURING CENTER

Manual

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