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LINSEED IN THE FEEDING OF HORSES OF THE MILITARY POLICE OF SANTA CATARINA AND ITS RELATIONSHIP WITH THE EXPELITION OF ENTEROLITHS

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Abstract: Enteroliths or intestinal stones are mineralized concretions found in the large intestine of horses[1]. They are important causes of digestive system problems in horses. Formed in the large intestine, the presence of this mass can cause serious intestinal obstruction, leading to cases of colic and even death. Flaxseed, in turn, is an oily seed with a large volume of vegetable fat. The appropriate use has shown benefits to horses. This report aims to demonstrate how the use of flaxseed has helped the horses of the Santa Catarina Military Police (RPMMon) cavalry to reduce cases of colic, as well as report a specific case of spontaneous excretion of enterolith in one of the battalion's horses.
Keywords: enterolith; flaxseed; horse.

INTRODUCTION

Equine colic is a serious condition that can severely affect the life of the animal. If intervention is not carried out in the first few moments, the horse can die within minutes. Digestive diseases, such as colic and diarrhea, account for 50% of the medical problems that lead to the death of an adult horse[2]. Most of the time, equine colic depends on more than one risk factor. Often, a set of factors act on the animal for colic to set in. These factors, which can act alone or simultaneously, trigger changes in physiology, leading to the development of colic[3].

Enteroliths are concretions formed in the large intestine of horses, formed by ammonium and magnesium phosphate salts, deposited around a nucleus, which can be a foreign body (such as wood, metal, stone, plastic, rubber, among others) [4]. Clinical signs vary according to the shape and location of the enterolith, and diagnosis is usually made by exploratory laparotomy or necropsy. Rectal palpation is an important indicator of the disease, and treatment is usually surgical resolution.

Enteroliths can form in a few months or over several years. When small, enteroliths are excreted naturally through the animal's excrement. Large enteroliths can cause severe obstruction, stimulating the intestinal wall and distending it, causing a spasm of the loop and altering natural motility. Pressure on the intestinal wall causes hyperemia and congestion of the segment. More severe cases can result in damage to the intestinal wall due to ischemia, inflammation, edema or necrosis. If local pressure persists, rupture of the intestinal loop may occur, causing infectious peritonitis[5].

Laypeople may assume that colic resulting from these concretions occurs only in marginalized and poorly treated animals. However, the factors that promote the appearance of enteroliths can be very diverse: such as excessive consumption of alfalfa, intestinal pH, breed and heredity[4]. Therefore, even if less prevalent, this disease also affects animals that are treated with excellence, such as the horses of the Cavalry Regiment of the Military Police of Santa Catarina.

CASE REPORT AND DISCUSSION

Mounted police are an important ground force in public safety. After the infantry, they are the oldest patrol method for policing.

Nowadays, the use of horses in combat has been practically discontinued in much of the world. However, general patrolling, as well as the use of horses in public events, is still widely used and appreciated in modern life. Horses allow access to places with large crowds of people, in addition to providing the patrol officer with a wide view of the monitored area.

The Military Police of Santa Catarina (PMSC) has spent the last decade promoting innovations and modernizations in several sectors. And the PMSC cavalry did not stop at these updates. Food and health management was one of the items improved, especially after a

partnership signed in 2018 with ``*Universidade Federal de Santa Catarina*``, in the person of Professor Dr. Denise Pereira Leme, veterinarian, professor of the Department of Animal Science and Rural Development, of the Center of Agricultural Sciences/UFSC. All the established modifications have been the result of studies carried out between the veterinarian, collaborators of the Equine Welfare Center-NEBEQ and Captain PM Fernando Jahn Bessa, Chief of the Technical Section of the Mounted Military Police Regiment and Commander of the PM Stud Farm[6].

In feeding management, it is observed that a diet rich in concentrate negatively influences the behavior and well-being of animals. This occurs because, if there is a lack of bulk in the diet, satiety indicators are activated, and horses remain motivated to look for food. This may be related to oral stereotypies, such as: biting the wall, eating the bed, licking the trough; in addition to the emergence of health problems, such as colic and gastric ulcers[7]. A diet with a higher percentage of roughage increases the time taken to eat. A study showed that the average time spent by horses in the RPMMon of the PMSC to eat was 133.6 minutes. The greatest amount of time spent eating was for roughage. This slow ingestion allows horses to express eating behaviors that are closer to those of horses that live in the wild.[8].

In order to improve the digestibility and motility of the intestinal tract, from 2020 onwards, flaxseed began to be supplied to all horses in the regiment as follows: 56 grams per animal, previously left to rest in a percentage of 80% water to 20% flaxseed (Figure 1). The animals began to receive this grain twice a week.

Figure 1: Moistened flaxseed for administration

Flaxseed is considered a rich source of essential fatty acids such as omega 3 and 6, fiber and phenolic compounds that act as antioxidant agents[9]. An experiment demonstrated that the addition of 10% flaxseed to the diet of horses was positive when related to the digestibility of fiber in the diet[10].

However, there is an important factor that must be carefully observed when using flaxseed. When in grain form, it only has an effective action if administered moistly, since the shell of the grain is extremely hard and hinders its laxative action. The problem is that when the flaxseed grain is moistened, it releases prussic acid (hydrocyanic acid) which is highly toxic to the horse if administered in large quantities. Prussic acid prevents the absorption of oxygen by the body, leading to sudden death.[11]. Thus, it is clear that the administration of flaxseed, although effective, must be carried out with care and closely monitored.

Considering the aspects of well-being and proper management, flaxseed has been an important source of prevention of serious colic problems in horses, especially those related to the presence of enteroliths.

A peculiar case was observed in which a mare, from the battalion in the city of Joinville, suffered from frequent colic. In this city, the animals are also treated with the

same care in feeding, but the flaxseed offered in this location is dry. The animal was then sent to the RPMMon battalion in São José, where it began to be administered flaxseed moistened in water, as previously described. Surprisingly, this animal naturally expelled the enterolith, thus avoiding the need for surgical intervention. By continuing with the management care, the mare did not present subsequent cases of colic.

Currently, due to bidding difficulties, flaxseed has been acquired in smaller quantities by the regiment. Thus, the administration of the grain has been reduced, from twice to once a week. To date, no serious cases of colic have been observed in the Battalion's animals. However, the Sergeant reports that, as soon as these bureaucratic obstacles are resolved, flaxseed will once again be offered twice a week, as it has proven to be effective.

FINAL CONSIDERATIONS

Despite having negative effects if administered in excess, flaxseed has proven to be an important factor in helping to treat cases of colic in RPMMon animals. Since gastrointestinal problems are relevant causes of death in horses, the use of this grain must not be neglected by those responsible for the feeding management of these animals.

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