Jurnal Riset Veteriner Indonesia
Journal of the Indonesian Veterinary Research
P-ISSN: 2614-0187, E-ISSN:2615-2835
Nationally Accredited Journal, Decree No. 36/E/KPT/2019.
Volume 9 No. 1 (January 2025), pp. 15-20
journal.unhas.ac.id/index.php/jrvi/

Case Report: The Use of Turmeric in Handling Myiasis in Bali Cattle in North Sinjai District, South Sulawesi

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Abstract

Myasis is a disease that commonly occurs in ruminants with the incidence of myasis increasing from year to year in Indonesia, especially in rural areas, with an incidence rate of 70% and a recurrence rate of up to 40% in cattle, buffalo, horses and goats. This disease is characterized by the presence of wounds and maggots. The presence of secondary infections will make the disease worse. Therefore, it is necessary to handle miasis cases so that they do not cause losses to farmers. A 7 year old of bali cattle in the North Sinjai district experienced miasis on the head. Treatment for myasis includes washing the wound, removing maggots and administering medication. Treatment uses the antibiotic oxytetracycline, anti-inflammatories, and vitamins as well as turmeric powder as a topical treatment. With the handling and treatment given, the cow showed recovery within 2 weeks. There is a need to improve election management so that this miasis incident does not happen again. As well as the need for socialization from related departments regarding livestock diseases and livestock rearing management.

Keywords: *Myiasis, Oxytetracycline, Turmeric, Bali Cattle.*

Introduction

According to the World Organization for Animal Health or Office International des Epizooties, myiasis is included in the category of infectious diseases that have a socio-economic or health impact in a country, as well as a real impact on international trade related to animal-derived products (USDA, 2018). Myiasis begins with a wound on the body of livestock. The wound can be caused by various factors such as insect bites, castration operations, abscesses, wires or metals and fights between livestock so that it becomes a place for larval infestation (Moyo & Masika, 2009; Fahma et al., 2020).

Myiasis is defined as a condition of maggots or maggots originating from certain species of

flies that utilize living, dead, or necrotic tissue from the host as a food source for their growth and development. In Indonesia, there are many bezzeiana flies causes myiasis in local livestock intensively raised on the islands of Java, Madura and Bali. In contrast, local livestock raised semi-extensively or extensively in the areas of West Nusa Tenggara, East Nusa Tenggara, South Sulawesi and North Sulawesi have been widely reported (Wardhana & Muharsini, 2005; Imtiazet al.,2014).

The initial infestation of larvae occurs in the injured skin area, then the larvae move deeper into the muscle tissue, causing the wound area to widen. This condition causes the livestock's body to become weak, appetite decreases, fever and is followed by a decrease in milk production and body weight, and anemia can even occur Myiasis that is treated late will be followed by the emergence of fly larvae that lay eggs in the wound (miasis), Maggots (fly larvae) and germs often cause secondary infections and make the wound worse and suppurate, this condition will further worsen the condition of the sick animal (Sukarsih et al.,1999; Fahma et al., 2020).

Low levels of animal and cage hygiene, resulting in environmental pollution and attracting flies, are the main predispositions for the occurrence of myiasis. According to Pudjiatmoko (2014) the pathogenesis of myiasis in animals and humans is no different. The beginning of myiasis is when livestock experience natural wounds due to fighting, being cut by sharp objects, tick/predator bites and postpartum or a severed umbilical cord. Other wounds are also caused by human intervention, for example in cases of horn cutting (de-horning), castration, tail cutting, shaving and others. The smell of fresh flowing blood will attract female flies.C. bezzianato lay its eggs on the edge of the wound. These eggs have strong adhesive power so that they do not easily fall to the ground by animal movement. In less than 12 hours, the eggs will hatch into larvae and move into the tissue. The activity of larvae in body tissue causes the wound to become larger and tissue damage to become more severe (Fathurrohman et al.,2015).

The decline in livestock production and productivity and the increase in medical costs have caused farmers to experience significant economic losses. And the difficulty of health management and maintenance is a factor causing the decline in the cattle population (Murthofa, 2022). Therefore, it is important to know how to prevent and treat myiasis in livestock in order to maintain livestock production and productivity levels so as not to cause losses for farmers.

Materials and Methods

Anamnesis

On July 17, 2024, a report was received of a 7-year-old Balinese cow belonging to Mr. Halim in North Sinjai District suffering from a head wound with blood continuing to flow.

Clinical Sign

The results of the physical examination showed that the Bali beef cattle had an open wound on their heads with fly larvae, were seen frequently rubbing their heads against the pen, and were still eating and drinking well. The cattle had BCS (body condition score) 3 out of 5.

Figure 1. Myiasis on the dorsal nose of Bali cattle.

Diagnosis

Case identification is usually preceded by a description of the owner's complaints, medical history, and general animal condition. Further diagnosis is made based on clinical examination of the presence of wound bleeding, distinctive odor, and the presence of exudate and maggots in the wound. Based on anamnesis and clinical findings, the cow can be diagnosed with Myiasis with a Fausta prognosis because it is a wound that can be healed within a few days.

Treatment

Administration of Oxytetracycline antibiotics (Medoxy-L®) with a recommended dose of 4-8 ml for cattle weighing 50-100 kg and a dose of 5 ml IM, Oxytetracycline antibiotics (Medoxy-L®). Continued with the administration of anti-inflammatory drugs, namely Dexamethasone (Glucortin-20) with a recommended dose for cattle of 5-15 ml and a dose of 5 ml IM to reduce or suppress the inflammation process in the body (anti-inflammatory). Administration of Vitol which contains vitamins A, D3, and E with a recommended dose for cattle of 10 ml and a dose of 10 ml IM given on the first day and the 7th day.
In addition, the wound is sprinkled with turmeric powder which is an alternative treatment option that is easily available. After cleaning the wound is sprinkled with turmeric powder every day. According to Kurniawan (2021) Turmeric is a herbal plant that is believed to be able to accelerate the wound healing process, scientifically turmeric has been proven to have anti-inflammatory and antibacterial effects.

Results and discussion

Handling of myiasis cases is done periodically and regularly, this is to prevent infection by fly larvae, wounds containing maggots must be cleaned thoroughly using tweezers to remove the maggots where the maggots are removed. After the maggots are removed, they are cleaned until the wound is clean. This is the same as what Jesse et al.,(2016) namely that treatment of myiasis includes washing the wound, removing maggots and administering local and systemic antibiotics.

Figure 2. Condition of the wound on the 5th day. The wound appears to be drying.

Oxytetracycline is one of the oldest tetracycline antibiotics used in animals. The mechanism of action of tetracycline is to bind to the 30S ribosomal subunit and inhibit protein synthesis. Oxytetracycline is usually bacteriostatic. It has a broad spectrum of activity, including gram-positive and gram-negative bacteria, some protozoa, Rickettsia spp., and Ehrlichia spp. (Papich, 2021).

Dexamethasone (Glucortin-20) with a recommended dose for cattle of 5-15 ml and a dose of 5 ml IM to reduce or suppress the inflammation process in the body (anti-inflammatory), this drug works by stabilizing the leukocyte lysosome membrane, so that the release of acid hydrolase that damages leukocytes can be prevented (Chhetri et al. 2010). Giving vitamins is indicated to increase growth, increase immunity to disease, especially in young animals, and help the recovery period from illness (Sutipyo, 2022).
In traditional medicine, turmeric is used as an anti-inflammatory, antiseptic, anti-irritant, anorexia, wound medicine and liver disorders. Turmeric (Curcuma domestica Val) contains curcumin compounds that can accelerate re-epithelialization, cell proliferation, and collagen synthesis (Wientarsih et al, 2012). Turmeric contains curcumin which can accelerate wound healing. Curcumin can increase re-epithelialization, suppress inflammation, increase tissue collagen density and increase fibroblast proliferation. This treatment affects the wound healing process to be better (Budiman, 2017). Another advantage of turmeric is its ability as an anti-inflammatory and blood clotting agent. This is influenced by the formation of ecosanoids, chemicals that can regulate blood clotting, blood pressure and immunity. In addition, curcumin is also antibacterial and anti-inflammatory, inhibits or kills microbes and is efficacious in overcoming the treatment given to the cow showing progress with wounds that began to dry on the 5th day and healed on the 15th day (Zulpadly & Meitasari, 2024).

Prevention is the most appropriate action to minimize the risk of myiasis. Disease prevention can be done by providing counseling to farmers to pay attention to and carefully implement livestock sanitation, pens, the surrounding environment and supervision of livestock traffic between regions (Nururrozi et al.,2017).

Conclusion

Myiasis is defined as a conditionmaggotor maggots originating from certain fly species that utilize living, dead, or necrotic tissue from the host as a food source for their growth and

development. Proper wound care management is essential to achieving a good prognosis. Improving disease prevention efforts Disease prevention can be done by providing counseling to farmers to pay attention to and carefully implement livestock sanitation, cages, and the environment surroundings and traffic control inter-livestock area. Control of flies that cause myiasis includes the use of insecticides and pesticides.

Acknowledgement

The author would like to express his respect and gratitude to the Head of the Livestock and Animal Health Department of Sinjai Regency and related veterinarians who have provided examples and guidance to the author in handling animal cases in the field. As well as to the supervising lecturer who has directed this writing until it is published

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