Popular Article

COMMON BACTERIAL DISEASES OF GOAT IN INDIA AND ITS PREVENTION

Sonika Verma,[1*] Mukesh Srivastava[1] and Jitendra Tiwari[2]

[1]Department of Veterinary Medicine, [2]Department of Veterinary Parasitology, College of Veterinary Science and Animal Husbandry, Deen-dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go- anusandhan Sansthan (DUVASU), Mathura, U.P., 281001

**Corresponding author email: vetsonika@gmail.com*

ABSTRACT

Goat husbandry is considered as efficient and rapid way of improving income of lower-middle class as well as landless farmers. The goat rearing requires minimal investment and its rearing is cheaper as compared to other livestock. However, Improper management and diseases caused by bacteria, fungi, parasites, protozoa, rickettsia, and viruses can lead farmers to suffer large financial losses. Poor management practices can lead to metabolic problems, lower productivity, and death, resulting in losses. Goats are primarily raised for their meat, milk, dung, wool, and income. In developing nations, goats are owned by households, farmers, and migrant workers. Effective management practices are essential for ensuring optimal animal health in goat production. However, the prevalence of viral diseases and inadequate management practices negatively impact goat productivity. This article aims to identify prevalent bacterial diseases of goats and propose treatment and preventive approaches to control these diseases. It also highlights the importance of understanding the socioeconomic status of farmers and their use of professional measures to avoid goat infections.

Keywords: Bacterial disease, Goat rearing, managemental practices, prevention, ruminants

I. INTRODUCTION

Goat rearing is one of the most popular animal husbandry practices in India specially within middle-lower income group farmers. Minimal area requirement for housing and easy transport as well as increased demand for chevon and goat milk makes it popular. India houses 148.88 million goat population as per 20th livestock senses. Goat illnesses can result in significant financial losses for farmers due to the prevalence of goat husbandry with inadequate management measures. Common factors influencing livestock output in many nations include the prevalence of illnesses, inadequate management practices, and the absence of effective breeding regulations. Disease is a pathological state that detrimentally impacts the physiology of the animal body. Goat diseases can be caused by a variety of organisms such as bacteria, fungi, parasites, protozoa, rickettsia, and viruses. Metabolic problems can occur owing to lower grade feed and poor management practices, which can lead to lower productivity and death, resulting in losses. Diseases have significant implications for farmers and can impact the productivity of small livestock in multiple ways. The rise in the expense of production leads to a reduction in the production pace, which impacts either directly or indirectly both the quantity and the quality of animal products, resulting in significant financial losses for the farmer.

Goats are often susceptible to diseases and adverse situations since farmers neglectfully allow their animals to roam openly on sidewalks without sufficient supervision. In some cases, the goats are forced to extreme malnutrition without much consideration for their well-being. Various

issues such as an excessively large herd size, inadequate ventilation, and a poorly managed system might increase the likelihood of sickness. Inanimate objects including drinking and feeding troughs, and even bedding, can serve as fomites and transmit diseases temporarily, but they do not retain their infectiousness for extended durations. Goats are a crucial component of animal production in both rural and urban areas. Their economic benefit is mainly attributed to their ease of handling, which is advantageous for small-scale investments due to minimal potential for mortality and high reproductive efficiency.

Goats are primarily raised for their meat, milk, dung, wool, and as a direct means of generating cash. The ownership of small ruminants in many developing nations is diverse, ranging from households and farmers engaged in mixed farming operations to landless agricultural migrant workers. Implementing effective management practices is essential for ensuring optimal animal health in goat production. There are certain health concerns for humans that are directly linked to handling infected animals, however several diseases that affect goats do not pose any zoonotic danger to human health. Small ruminants, such as sheep and goats, are the primary livestock kept by impoverished individuals in many developing nations.

These animals are often referred to as 'mobile banks' since they provide as a valuable source of milk, meat, and revenue for families. The income generated from these animals may be readily used to cover household expenses. The endeavour to enhance the efficiency of goats has been impeded by a multitude of reasons, including the prevalence of viral diseases that lead to a significant number of animal fatalities. It is essential for practitioners in goat production to possess a fundamental understanding of illnesses and management practices. The productiveness of goats is negatively impacted by the rising occurrence of illnesses and inadequate management measures. This article aims to identify prevalent bacterial diseases of goats and propose treatment and preventive approaches to control these diseases. Considering this, the socioeconomic status of farmers, their ability to identify frequent diseases, and their use of professional measures to avoid goat infections have been established. Additionally, it is thought to be beneficial for investigators, extension service providers, veterinarians, and para-veterinarians in developing suitable preventative strategies to reduce the likelihood of diseases in goat production.

II. BRUCELLOSIS

Cause, transmission and clinical manifestation

Brucellosis is a bacterial infection that can impact goats, as well as other animals like sheep and cows, and feral ruminants including deer, elk, and bison. Brucellosis results in the termination of pregnancy or the birth of dead offspring in animals. Brucellosis, a zoonotic disease, is highly prevalent and can be transmitted from animals to humans. In locations where it is common, human brucellosis poses significant public health risks. The aetiology of brucellosis in goats is primarily attributed to the *Brucella melitensis*. However, *Brucella abortus* can also lead to clinical brucellosis in goats. *Brucella melitensis* is the primary origin of the disease in sheep and goats. Possible consequences include abortion, retained placenta, and testicular oedema. Abortion typically takes place in the later stages of pregnancy in sheep and goats. Brucellosis can be transmitted from one person to another. Bacteria can be found

in milk, placenta, foetal fluids, foetus, vaginal discharges, semen, and urine. Ruminants and other animals have the ability to continuously or permanently release germs.

Treatment

Treatment of brucellosis is not specific and lacks efficacy. However, using long-term antibiotics can effectively remove *B. melitensis* infections in valued goats. It is important to understand that this treatment may result in low reproductive performance.

Prevention

It is highly suggested to promptly vaccinate cattle, sheep, and goats, particularly in areas where the disease is prevalent regions. Adhering to good sanitary practices, such as milk pasteurisation, proper meat preparation, and correct handling of food, Utilising stillbirths and animal carcasses is a crucial approach for preventing brucellosis in goats.

III. CONTAGIOUS CAPRINE PLEURO-PNEUMONIA (CCPP)

It is a highly transmissible respiratory disease affecting goats. Contagious caprine pleuro-pneumonia (CCPP) is a severely contagious and rapidly spreading disease caused by mycoplasma bacteria. It affects a large number of goats and is characterised by severe respiratory distress, including sero-mucoid nasal discharge, difficulty breathing, coughing, high body temperature, and overall feeling of illness.

Transmission

The primary mode of transmission is by the inhalation of aerosols contaminated with the virus. Airborne transmission can lead to the widespread dissemination of pathogens across long distances. Spreading by personal interaction is also documented. The transmission role of infected objects, vectors, fomites, and animal products has not yet been determined.

Cause

Contagious caprine pleuro-pneumonia is an extremely lethal disease in Asia, due to *Mycoplasma capricolum*. The morbidity rate is typically 100% and the mortality rate can reach up to 80%.

Clinical manifestations

The disease is distinguished by symptoms such as loss of appetite, lack of energy, low mood, weakness and fatigue, elevated body temperature, loss of weight, and reduced productivity. In addition, the patient exhibits respiratory symptoms such as discharge from both nostrils, difficulty breathing, rapid breathing, and coughing. At times, the sole indication observed is abrupt mortality.

Treatment

Broad spectrum antibiotics. Goat owner should consult a veterinary doctor for treatment.

IV. MASTITIS

The incidence of mastitis is a swelling of udder and teat which is generally observed owing physical damage, infectious conditions and production stress. It can manifest as either clinical or subclinical. Clinically, it is characterised by the presence of clots or serum development in the milk, along with a swollen udder that is hot and painful to the touch.

Transmission

Both horizontal as well as vertical transmissions are probable in goats. However, vertical gearbox is quite rare. The occurrence of mastitis is primarily influenced by variables that contribute to the horizontal spread of pathogens. Milk, faeces, urine, and oronasal secretions can serve as vehicles for the elimination of microorganisms. The milker's hands, milking equipment, vectors, and fomites are all common sources of contamination. The most common method of entrance through teat. Every animal is vulnerable, with the likelihood of being affected mostly influenced by age and the number of times they have given birth.

Aetiology

The disease has various causes, however Staphylococcus aureus as well as Staphylococcus agalactiae are the most commonly found bacteria in instances of mastitis in goats. Additional bacteria that have been reported comprise Corynebacterium

pyogenes, Klebsiella species, Mycobacterium species, and Brucella species.

Clinical signs

Acute mastitis is characterised by several symptoms, including swelling, pyrexia exceeding 105 F, increased pulse rate, loss of appetite, depression, inaction, difficulty breathing, redness and inflammation of the mammary, swelling of the retro-mammary lymph nodes, and sluggish movement. Chronic mastitis often presents with agalactia, which is the absence of milk production, and the presence of hard lumps. However, in cases with subclinical mastitis, there are no observable clinical symptoms, but changes in the composition of milk can occur and there may be a positive response to tests.

Prophylaxis

Implementing appropriate milking protocols, maintaining high standards of hygiene for milking equipment, and removing animals that consistently carry the infection will effectively decrease the occurrence of the disease. To prevent the proliferation of dangerous microorganisms, it is necessary to disinfect kidding enclosures and bedding on a daily basis. Regularly performing abscess drainage and applying appropriate wound dressings is recommended. The hygienic-sanitary management for preventing mastitis comprises several elements, such as selecting an appropriate antibiotic, considering the susceptibility of microorganisms, determining the duration and dosage of therapy, and assessing the animal's immunological condition.

V. CONCLUSION

Goat rearing in present scenario is lot more different than it was in previous decades. Goat rearing in recent times have achieved paradigm shift from nomadic type of rearing to semi-intensive farming type. Therefore, this article aimed to identify prevalent bacterial diseases of goats and propose treatment and preventive approaches to control these diseases. It also highlights the importance of understanding the socioeconomic status of farmers and their use of professional measures to avoid disease spread in goat. There are several other diseases of bacterial origin yet the above-mentioned diseases are most prevalent in Indian sub-continent and causes economic loss to livestock owners. Scientific goat rearing and general awareness can lead to sustained as well as growing economic condition to the farmers opting for goat rearing

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