

# Contagious Ecthyma (Orf/Sore Mouth) in Sheep and Goats

## Introduction

Contagious ecthyma, also known as orf or sore mouth, is a *zoonotic* disease, which means that it is easily transmitted from animals to humans. It induces acute pustular lesions in the skin of goats, sheep, and wild ruminants worldwide. Young animals are the most susceptible to contracting the disease. Kids and lambs can contract sore mouth after a few weeks of birth. However, sore mouth outbreaks in young animals are most frequent during postweaning.

Sore mouth is caused by a poxvirus related to the pseudocowpox and bovine papular stomatitis virus family. The virus is epitheliotropic, which means that it has an affinity for the skin; infection occurs by direct contact. The period of incubation is relatively short. Susceptible animals usually develop the first signs of the disease 4 to 7 days after exposure that persists for 1 to 2 weeks or for longer periods. The disease affects sheep and goats; it is marked by an increase in incidence and severity if not controlled among small ruminant herds.

Sore mouth outbreaks occur more frequently during periods of extreme temperatures such as late summer and winter. The disease initially presents itself as papules (elevation of the skin)



that progresses to blisters (fluid-filled pouches) or pustules before encrusting. These lesions are found in the skin of the lips. They can spread around the outside and inside of the mouth, face, lips, ears, vulva, lets, scrotum, teats, and feet, usually in the interdigital region. Extensive lesions on the feet can lead to lameness in adults and young animals. The infection is spread by direct and indirect contact from infected animals or by contact with infected tissue or saliva containing the virus.

During the course of the disease, blisters eventually break down to release more of the virus and later develop into wet pus-like (suppurative) scabs. These lesions can persist for 3 weeks and can become a site for the development of secondary bacterial infections. Scab tissues are extremely painful, to the point of preventing sick animals from eating. Because infected kids present lesions on their gums and lips, does and ewes can acquire lesions on their udder. The lesions on the udder are due to direct contamination during nursing that causes mastitis (inflammation of the mammary gland) in does and ewes. Severe to moderate enlargement of the lymph nodes, arthritis, and pneumonia resulting from sore mouth has been reported. Most animals acquire immunity after contracting the disease; however, subsequent outbreaks in herds are common with a less severe form of the disease.

## Diagnosis

Diagnosis is based on the characteristics and location of the lesions, as well as a herd history of previous outbreaks. A definitive diagnosis is based on viral isolation and an immunologic test.

## Treatment

Lesions can be treated with a single application of 3 percent iodine solution. Animals are cured spontaneously in most cases. In severe cases of secondary bacterial infection, the usage of a systemic antibiotic is recommended.

It is important to treat the lesions on the teats (nipples) of the does to prevent the development of mastitis. For infected kids, be sure they are fed artificially.

### **Prevention and Control**

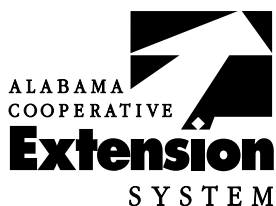
- Minimize transportation stress.
- Always quarantine new animals before introducing them to the rest of the herd.
- In case of an outbreak, separate sick animals in a pen for treatment.
- Always feed and treat sick animals after feeding the herd.
- Incinerate gloves and all tissues that come in contact with lesions extracted from sick animals. The virus can persist in animal tissue for a long period of time, becoming a source of contamination.
- Always wear gloves when handling sick animals and vaccines as humans can contract the disease.
- Avoid the consumption of milk from does that present lesions on the teats and udder.
- A systematic vaccination of the entire herd is recommended only during outbreaks. There are two vaccines available for use in sheep. The vaccines are modified versions of live viruses and are administered topically. A small dose of the vaccine is brushed over light scarifications of the skin on the inside of the thigh. These vaccines will induce a mild form of the disease. In sheep flocks where there is a prevalence of the disease, lambs should be vaccinated at the age of 1 month with a booster 2 to 3 months later. There is currently no recommended vaccination protocol for goats since the sheep vaccine is not FDA-approved for use in goats.



### **References**

- Merck Veterinary Manual*. (2006). *Contagious ecthyma (orf, contagious pustular dermatitis, sore mouth)*. Whitehouse Station, NJ: Merck & Co., Inc.
- de la Concha-Bermejillo, A., Guo, J., Zhang, Z., and Waldron D. (September 2003). Severe persistent orf in young goats. *Journal of Veterinary Diagnostic Investigation*, 15(5), 423-31.
- Haig, D. M., and Mercer, A. A. (1998). Ovine diseases. Orf. *Veterinary Research*, 29(3-4), 311-326.
- Haig, D. M., McInnes, C. J. (2002). Immunity and counter-immunity during infection with the parapoxvirus orf virus. *Virus Research*, 88(1-2), 3-16.
- Key, S. J., et al. (2007). Unusual presentation of human giant orf (Ecthyma Contagiosum). *The Journal of Craniofacial Surgery*, 18(5), 1076-1078.
- Zamri-Saad, M., Roshidah, I., al-Ajeeli, K. S., Ismail, M. S., and Kamarzaman, A. (1993). A severe complications induced by experimental bacterial superinfection of orf lesions. *Tropical Animal Health and Production*, 25(2), 85-88.

**Consult your local veterinarian for disease treatment and prevention.**



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