



ORF Disease: A Zoonotic View

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Introduction

Orf is a notifiable and farmyard pox, a type of zoonosis. Orf is a skin disease of sheep and goats caused by a virus. It can spread to humans who are in close contact with infected animals. It causes localised lesions on the skin and is not a serious threat to humans however it causes severe economic loss in small ruminants.

Aetiology

It is caused by *Orf virus* which comes under genus *Parapoxvirus* of subfamily *Chordopoxvirinae* of family *Poxviridae*.

How do Animals Become Infected?

- ❖ Any direct contact between animals either muzzle to muzzle or skin to skin can result in transmission of the virus between animals.
- ❖ The virus can be transmitted to other animals through cuts or abrasions in the skin.
- ❖ The infection spreads to lambs during suckling
- ❖ Pastures, bedding, feed and feed troughs, and buildings may become contaminated with orf virus from released scab or lesion material making it difficult to completely eliminate orf virus from the immediate environment once an infected animal is present.
- ❖ The disease is more severe during stress like poor hygiene, overcrowding, stress due to transportation, change of diet, lambing, and environmental conditions.

What are the Clinical Signs and Symptoms of an *Orf Virus* Infection in Animal?

The *ORF virus* primarily affects the mouth, Foot, commissure of lips, muzzle, tongue, gums, and associated tissues.

The usual clinical manifestations are:



- ❖ Initially, small papules and pustules appear around the mouth.
- ❖ The pustules break and cause severe itching.
- ❖ Later, lesions spread to nostrils, eyes, ears, vulva, udder, coronet, hooves and tail.
- ❖ Redness and swelling of the skin of the mouth, muzzle, lips, and nostrils.
- ❖ Profuse salivation, lachrymation along with nasal discharge.
- ❖ Loss appetite.
- ❖ Progressive weakness.
- ❖ The infection spread to other organs like the udder, vulva, foot, and hooves.
- ❖ Excessive lesion on the foot lead to lameness.
- ❖ Affected ewes may not allow lambs to suckle resulting in lamb losses and reduced weight gain and affected lambs may find it difficult to feed or suckle normally.
- ❖ Mastitis may also be a problem in a proportion of ewes.

How do People Become Infected with *Orf Virus*?

Orf virus infections in humans typically occur when broken skin comes into contact with the virus from infected animals or contaminated equipment.

Activities that may put you at risk for infection include:

- ❖ Bottle feeding, tube feeding, or shearing sheep or goats
- ❖ Petting or having casual contact with infected animals
- ❖ Handling infected equipment such as a harness
- ❖ Being bitten by an infected animal.
- ❖ Handling or holding raw meat of infected animals
- ❖ *Orf virus* is not transmitted from one infected person to another.

What are the Clinical Signs of an *Orf Virus* Infection in Humans?

- ❖ Infection with *Orf virus* is usually confined to the epidermis (top layer) of the skin.
- ❖ Lesions (one to a few) or nodules will often occur on the fingers, hands, or the forearms. Lesions begin as small papules that will become ulcerative in nature.
- ❖ *Orf virus* lesions typically progress through six stages each lasting approximately one week. Other symptoms may include a mild fever, malaise (fatigue), or local swelling of lymph nodes.
- ❖ Lesions generally range in size from 2-3 cm but can be as large as 5 cm.
- ❖ They can be painful but usually resolve on their own without scarring.



Diagnosis

- Based on history of exposure of infected animals.
- Based on clinical signs and symptoms.
- Isolation and identification of causative virus by ELISA, CFT, AGID test.
- PCR of the virus.

Treatment

There is no specific treatment for a viral disease like ORF or sore mouth in sheep and goat. The treatment will mainly reduce viral load and control secondary bacterial infection. The treatment procedures are:

- ❖ Administration of a broad-spectrum antibiotic.
- ❖ Antihistamines.
- ❖ Wash the mouth and affected organs with 2% boric acid solution.
- ❖ Wash the feet, udder, vulva, and sheep house with 0.1% potassium permanganate solution.

Is There a Vaccine Available?

- ❖ There are commercially available preparations of live virus marketed as vaccines.
- ❖ Producers considering using an orf vaccine product in their flock should consult a veterinarian.
- ❖ Vaccination practices vary depending on breed and geographic location.
- ❖ Because the orf vaccine is a live virus preparation, its use is only suggested for flocks that have previously experienced orf virus infection or in which vaccine has previously been used.

Prevention and Control

Viral disease prevention is more important than treatment. The disease can be prevented by taking the following measures:

- ❖ Improve hygiene and sanitation of the sheep house.
- ❖ Reduce the stress in the sheep herd.
- ❖ Vaccinate against *ORF virus* or *Goat pox virus*.
- ❖ Isolation of affected animals from the healthy herd.
- ❖ Daily cleaning of the sheep house.
- ❖ Because of the zoonotic nature of the disease, farmers and veterinarians should wear protective gloves and facemasks when dealing with sick animals, as well as during vaccination





Fig.1 Sheep showing scabby lesion in the mouth.



Fig.2 Goat showing scabby lesion un the mouth.



Fig 3. A thumb with two denuded orf lesions, following a bite by a sheep



Fig.4 The affected area of skin is small and may look a reddish-blue colour. It may be itchy or tender.

