

# CASE STUDY : AN OUTBREAK OF ECTHYMA CONTAGIOSA ON A SHEEPFARM IN COMMEWIJNE.

(first acknowledged case in Suriname)

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## Summary

In this case study, the author reviews an outbreak of *Ecthyma contagiosa* on a sheep farm in Commewijne. The disease developed within one week and persisted on the farm for less than three weeks. 73,7% of sheep were affected, no sheep died. The clinical feature of the disease was limited to labial lesions, with one sheep showing lesions on both eyelids. No podal, nor genital lesions were seen. In spite of numerous contacts between owner and sheep, human ecthyma, usually characterised by lesions on hands and forehead did not develop.

## Introduction

On Monday, July 18th, 1994, the animal health officer of the veterinary services (eastern regions, Tamanredjo-office) was -while performing the daily ambulatory clinic round- confronted with a disease-outbreak on a sheep-farm in Meerzorg. Several sheep had been displaying pox-like lesions on eyelids and lips, thus decreasing feed-intake. Based on the clinical and epidemiological features of the disease, *Ecthyma contagiosa* was diagnosed; this is the first recognized case in Suriname<sup>2</sup>, although the presence of the disease has been long suspected.

## The course of the outbreak

The disease first became apparent on Monday, July 11th. A few ewes of different age showed red spots on upper and lower lip and in one case (young ewe) on both eyelids as well. Spots quickly became blisters. Six days after the onset of the disease the blisters had been replaced by thick dry crusts, who fell off within two weeks, leaving hardly any scars.

Within five days, 8 out of 11 sheep were affected. Although several animals did lose considerable weight as a result of difficult feed intake, all animals did survive the disease. The last-affected sheep was completely recovered on July 30th. The outbreak thus lasted for less than three weeks.

The one sheep, showing the first symptoms of the disease, was known for breaking out of the premises and grazing on neighbouring pastures; it is very probable that this sheep brought the disease into the herd.

The owner of the sheep, who frequently manipulated the animals, did not develop human Ecthyma-lesions.

**Table 1 : general overview of morbidity and mortality.**

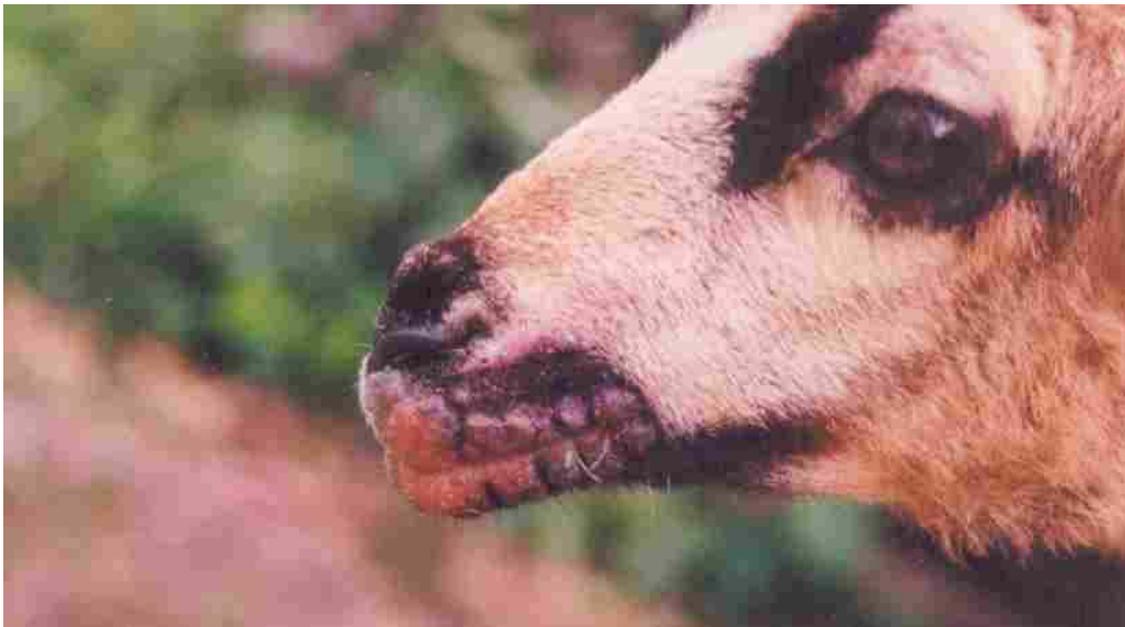
Biharisingh-farm, Meerzorg, Commewijne.	Lambs	Ewes	Rams	Total
Composition of the herd	4	6	1	11
Number of animals affected	2	6	0	8((72,7%)
Number of animals dying	0	0	0	0 (0,0%)

## Features of the disease

*Ecthyma contagiosa*, contagious ecthyma or contagious pustular dermatitis is caused by the Orf virus, belonging to the same family (Poxviridae) as pseudocowpox and bovine papular stomatitis. The virus is pathogenic for sheep and goats, but also for related game as springbucks and steenbucks<sup>4</sup>, dogs and man. It is thus a zoonosis.

The virus is very resistant to external environmental factors, in particular dissection. In crusts exposed to sunlight, it remains infective for 30 to 60 days<sup>4</sup>. Live virus has been recovered from 12-year old crusts<sup>3</sup>. Creoline (5%), chloramine and other Cl-desinfectants are effective in destroying the virus. So is heating at 64°Celsius<sup>4</sup>.

The virus usually invades a herd following the purchase of an affected animal. The virus then quickly disperses within the herd by direct and indirect contact between animals; the latter specifically through crust-infected stables and pastures. In most of the cases observed, ewes contaminate their lambs or vice versa<sup>4</sup>.



**Figure 1 : typical proliferative lesions and crusts on the lips of an affected animal (18-07-94).**

The virus causes infection on those places of skin and mucosae where small lesions occur. Thus, in principle, the infection can occur in all mucosae and all over the skin, e.g. in castration-wounds<sup>5</sup>. However, one has described three distinct predilection sites and three concurrent disease-entities, who can occur exclusively or simultaneously<sup>4</sup>.

- the labial entity, characterised by lesions on lips, mouth-corners, nostrils and rarely on eyelids. The disease leads to decreased feed-intake and loss of condition in especially young lambs.
- the podal entity, characterised by lesions in the interdigital region and around the coronet.
- the genital entity, characterised by lesions on udder and nipples, in rare cases also on genitals. This disease-form is caused by suckling lambs, affected by the labial disease-form.

Lesions develop as papules and progress through vesicular and pustular stages before encrusting. During the course of the disease the crusts drop off, leaving more or less of a wound. The recognition of these clinical features can be quite difficult whenever secondary infections are involved. Secondary bacterial infections occur mostly in the podal and genital (mastitis) disease form, while screw worm myiasis (*Cochlyomma hominivorax*) endangers the healing of all types of *Ecthyma contagiosa* in our region<sup>5</sup>.

Clinical cases who are not complicated by secondary infections, last for one<sup>3</sup> up to three or four<sup>4</sup> weeks. Eventually, recovery takes place without leaving scars. In general, 50%<sup>4</sup> of the herd is being affected clinically (up to 100% of all lambs<sup>5</sup>), death being rare. A lot of animals probably undergo the disease without showing symptoms, thus acting as latent sources of infection (virusreservoirs) for other animals<sup>4</sup>. Ewes in post-parturition for instance could undergo stress-induced relapses<sup>5</sup>. Through this mechanism, disease can maintain itself in a herd or a region for month.

Following recovery, animals are immune to the disease and protected against reinfection. This protection lasts for at least two years<sup>4</sup>. This does not exclude animals undergoing a benign form of ecthyma, characterised by fast-healing lesions<sup>5</sup>. Since immunity is primarily cellular, antibodies are not easily detected in the serum of affected or recovered animals; this obviously makes serologic diagnosis and screening of the disease a difficult one. This means furthermore that lambs are not protected through maternal immunity of the milk<sup>4</sup>. Lambs are therefore often infected shortly after parturition.

Diagnosis is usually easily established on clinical features alone; this is certainly the case for labial ecthyma. When available, electron-microscopic examination of crust-scrapings can reveal virusparticles. Sero-diagnosis is as stated above, usually not undertaken.

Labial ecthyma is in most cases easy to recognise. Lesions sometimes resemble those of scabies, sheep-pox, blue-tongue or foot- and mouth disease (FMD).

The differential diagnosis with a closely related disease, ulcerative dermatosis, is based on the aspect of the lesions. In contagious ecthyma, lesions are proliferative (tubercles), while in ulcerative dermatosis, lesions are ulcerative (craters).

The podal form can occasionally be confused with foot-rot.

Treatment of the disease is not possible, but preventive measures towards secondary infections are certainly usefull (antibiotics, larvicidal drugs). Close monitoring of feed intake by the animals is essential.

Animals can be vaccinated by inoculating virulent virus (from collected scabs) in areas of the skin, such as the armpit, where contagious ecthyma does normally not develop. Immunity is then established within four weeks<sup>4</sup>.

There is also a commercial vaccine available<sup>1</sup> (Ecthybel<sup>®</sup>) for subcutaneous application, which can be used for the annual vaccination of ewes and lambs in areas where contagious ecthyma is endemic. This is certainly not the case in Suriname, which is why generalised vccination of the herd is probably not desirable. Especially since several outbreaks have been observed in vaccinated herds, probably caused by closely related virulent strains of the virus<sup>3</sup>.

For the time being, one should only advise curative vaccination in the occurence of an outbreak. Inoculation will protect not yet affected animals and will speeden the recovery of affected animals.

Finally, one should be well aware that contagious ecthyma is a zoönosis, that is: contagious for man.

Lesions develop mostly on hands and forehead<sup>4</sup>. One should strongly advise the necessary precautions when handling affected animals.

## Literature

1. Ecthybel<sup>®</sup> (live freeze-dried virus with adjuvans), Rhône Mérieux, Lyon, France.
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