



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

Papers downloaded from AgEcon Search may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Strawberry Footrot in a Blackbelly sheep in the Ecuador Amazonia

A. C. Riofrío¹, J. C. Lopez¹, J. C. Moyano¹, R. Quinteros¹, P. R. Marini^{2,3} & M. L. Fischman⁴

¹Universidad Estatal Amazónica-Centro de Investigación, Posgrado y Conservación Amazónica - Ecuador.

²Facultad de Ciencias Veterinarias-Universidad Nacional de Rosario, Argentina.

³Consejo de Investigaciones (CIUNR), Facultad de Ciencias Veterinarias, Universidad de Buenos Aires, Argentina

⁴Facultad de Ciencias Veterinarias, Universidad de Buenos Aires, Argentina

Correspondence: Andrea C. Riofrio, Universidad Estatal Amazónica-Centro de Investigación, Posgrado y Conservación Amazónica - Ecuador. E-mail: andrearcmsphm@gmail.com

Received: May 30, 2016 Accepted: June 12, 2016 Online Published: September 21, 2016

doi:10.5539/sar.v5n4p56

URL: <http://dx.doi.org/10.5539/sar.v5n4p56>

Abstract

Dermatophilosis is an acute or chronic disease of the epidermis characterized by inflammatory, exudative and bleeding lesions with scabs, caused by the bacterium *Dermatophiluscongolensis*. It affects bovine, ovine, equine, cattle, goats, wild animals and also humans when it is considered a minor zoonosis. This work is about a case caused by *Dermatophiluscongolensis* in a sheep from Ecuadorian Amazonia. The affected sheep presented claudication with non itchy lesions in its right front limb, bleeding and painful at first. An exudate culture was taken to the laboratory. The samples were processed for a bacteriological diagnosis. Based on the clinical symptoms together with the lab results, *Dermatophiluscongolensis* was diagnosed. It was treated with BenzathinePenicilin 100,000 UI, each dose of 10,000 UI / kg PV, every 48 hours, in 5 consecutive applications combined with Tolfenamic Acid 8gr. In doses of 2mg / kg, that is to say 1 ml / 40 Kg PV every 48 hours. 10 days after the beginning of the treatment, the claudication and the pain lessened and the animal tried to set its limb on the ground.

Keywords: Dermatophilosis, ovine, clinical symptoms, clinical diagnosis, diagnosis, treatment

1. Introduction

Dermatophilosis is an acute or chronic disease of the epidermis characterized by inflammatory, exudative and bleeding lesions with scabs, caused by the bacterium *Dermatophiluscongolensis* (Stewart, 1972; Hirigoyen y Bermúdez, 1992). It affects bovine, ovine, equine, cattle, goats, wild animals and also humans when it is considered a minor zoonosis. In ovines, it affects the wool covered parts of their bodies such as the lumbar and cervical area, and in the flanks called *Lumpy Wool*, lesions can be observed in the head -mainly in the ears - and in the corners of their mouths. In rams it appears in the scrotum area and in the limbs from the ribs till the tarsian or carpien area called *Strawberry Foot Rot* (Stewart, 1972; Kruze, 1979), the name comes from the bleeding area the scab leaves between the toes after falling off. One study carried out in Ethiopia (Woldemeskel and Ashenafi, 2003) analysing 520 sheep, showed that three per cent had *Dermatophiluscongolensis* and proved that there was no statistically significant association between the skin disease and the age or gender of the sheep. The environmental characteristics of the Amazonian area -with 4,000 mm / year rainfall, 80 % average relative humidity and temperatures between 15 and 25 °C, steep cliffs, and an altitude of between 580 and 990 metres over sea level - make it prone to develop *Dermatophiluscongolensis*. However, the Blackbelly long haired sheep have adapted well to the weather and this pathology is not usually seen. That is why, the objective of this work was to report a clinical case of *strawberry foot rot* in a Blackbelly sheep of the Ecuadorian Amazonia.

2. Materials and Methods

The case appeared in a 28-month-old long haired Blackbelly sheep, 39.9 kgs heavy and 60-day pregnant with no offspring calf, belonging to the fold of the Centre of Investigation, Postgraduate and Conservation of Amazonic Biodiversity (CIPCA). This centre is located in the region Arosemena Tola in the province of Napo (Ecuador), at kilometer 44 in the Puyo-Tena way (coordinates: S 01° 14.325 ; W077° 53.134) and it has 3 hectares of land devoted to ovine milking. Its topography consists of mainly lowlands with no steep slopes, distributed in huge natural plateaus. The altitude varies between 580 and 990 meters over sea level. Even though the soil presents a highly heterogeneous composition, most of it is originated in fluvial sediments which come from the Andes region of the country. The CIPCA has a fold of 12 sheep which are raised under the same environmental,

nutritional and handling conditions. In January 2016, one sheep was observed to present a claudication in its right front limb. An extensive semiological exam was carried out (RC: 80/min, FR:18/min CC: 2,6 Temperature 39,1 °C). Afterwards, the area was sterilized and the tissue surplus of the cornea was taken out for a closer observation and samples were taken from the affected area in order to isolate the causative agent using a sterilized cotton swab; it was then put into an aerobic and anaerobic culture tube and was finally taken to the laboratory. The presumed diagnosis was infectious dermatitis, based on the history of the fold, the epidemiological characteristics and the clinical aspects presented by the affected sheep. There were no reports of previous outbreaks.

3. Results and Discussion

While waiting for the results of the antibiogram, a treatment was started in order to avoid physical deterioration and calm the animal's pain. The treatment consisted in the application of cephalosporine 2gr in a 1ml / kg of liveweightdosis for four consecutive days, combined with Tolfenamic Acid 8 gr in dosis of 2mg / kg liveweight, that is to say 1ml / 40 kg of PV every 48 hours (AINE – non steroid anti inflammatory). The animal presented no improvement. In the colour smears by Gram and Giemsa, there appeared a big quantity of cocosand filaments Grampositive, ramified, with the typical aspect of a *Dermatophiluscongolensis*. In the radiograph, yellow wrinkled colonies with a halo of beta hemolysis were identified. Having the results of the antiobiograma (Table 1) the animal was treated with BenzathinPenicilin 100,000 UI, each doses of 10,000 UI / kg PV, every 48 hours, in 5 consecutive applications combined with Tolfenamic Acid 8gr, in doses of 2mg / kg, that is to say 1 ml / 40 Kg PV every 48 hours (AINE – non steroid anti inflammatory). Ten days after the beginning of the treatment, the claudication lessened and pain relief was observed taking as a parameter the animal setting its limb on the ground. As a complement of the second treatment, an environmental treatment was also carried out; it consisted in the improvement of the indoor fold ground, disinfecting it, taking the humid material out and using dry material. After the treatment was started, the patient recovered favorably. Based on the clinical symptoms, the lesions and the laboratory findings, the diagnosis reached was *Dermatophiluscongolensis*. The lesions the affected animal presented coincided with the ones described in the bibliography. On the other side, the heavy rains of the region are an underlying factor for the disease to occur(Stewart,1972). In bovines, the dermatophilosis appears at all ages, but it is more common in young animals.

Table 1.

| Diagram | Measures | Sensitivity | Interval | Resistance |
|--------------------------|----------|-------------|----------|------------|
| Halo diameterfor: | | | | |
| Penicilin | 3.5 cm | x | | |
| Amikacine | 2.8 cm | | x | |
| Eritromicine | 1.5 cm | | | x |
| Gentamicine | 3.5 cm | x | | |
| Nitrofurantoin | 2 cm | | x | |
| Ampicilin | 2 cm | | | x |

4. Conclusion

Being this the first case of Strawberry Foot Rot en el CIPCA, the appropriate treatment and the handling measures succeeded in controlling the disease and avoiding the death of the sheep. It is important to highlight that the medical treatment had to be accompanied with the appropriate environmental handling in order to accelerate the recovery process.

The results encourage to use this drug against future cases that may appear in herds in the Ecuadorian Amazon.

References

Hirigoyen, D., & Bermúdez, J. (1992). Dermatofilosis: Aislamiento del agente de lesiones de Strawberry Foot Rot y Dermatitis de escroto en carneros. V Congreso Nacional de Veterinaria. Noviembre. Montevideo. Uruguay.

Kruze, J. (1979). Infección por *Dermatophiluscongolensis* en carneros Corriedale en el Sur de Chile. 8º Congreso Latinoamericano de Microbiología. Valparaíso. Chile.

Stewart, G. H. (1972). Dermatophilosis: A skin Disease of Animal and Man. Part. I. *Vet. Rec.* 91, 537-544. <http://dx.doi.org/10.1136/vr.91.22.537>

Woldemeskel, M., & Ashenafi, H. (2003). Study on skin diseases in sheep from northern Ethiopia. *Dtsch Tierarztl Wochenschr*, 110(1), 2-20.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).