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### Reference and Treatment Guide for Club Lamb Fungus

### **Background and Scope of the Problem**

Dermatophyte infections in sheep historically have been considered as rare. However, in the late '80s a highly infectious dermatophyte emerged in the southwestern U.S. in show lambs. This dermatophyte spread rapidly and by the mid-1990s was a major problem throughout the western and midwestern U.S. Due to its predominance in show market lambs the term "club lamb fungus" was used. However, this dermatophyte can infect any sheep. The practice of frequent washing, grooming and "slick shearing" enhances the ability of the dermatophyte to spread. Because this disease is highly contagious and zoonotic, club lamb fungus is considered a high priority for regulatory veterinarians in several states in the US. Major campaigns have been developed to educate veterinarians on the significant zoonotic (animal to human) potential of club lamb fungus. Veterinarians are often consulted and producers haphazardly attempt to treat club lamb fungus. Many questionable, unorthodox products are used in an attempt to control this disease. Very little scientific information is available on the treatment of club lamb fungus.

### **Etiology**

Trichophyton varrucosum, rubrum, mentagrophytes, terrestre, Microsporum gypseum, canis have all been reported to infect sheep. The exact etiological agent (cause) for club lamb fungus has yet to be completely characterized, but is thought to belong to the genus Trichophyton.

#### **Clinical Presentation**

May range from light flaky scabs to thick crusty lesions. Typically they are round in shape and although the lesions can be found on any skin surface, they are more

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commonly found on the haired regions of the animal such as the face and ears. It is reported that the fungal infection first begins as spots that expand to full size in 4-8 weeks, and that infection usually requires 8-16 weeks for spontaneous recovery. Secondary bacterial infections are common.



#### **Transmission**

Trichophyton spores are extremely hardy and believed to persist in the environment for several years. The disease can easily be transmitted though direct and indirect contact. It has been reported that after 10 days of a systemic anti-fungal, Trichophyton was still able to be isolated.

#### **Recommended Treatment Methods**

There is not enough data available to currently recommend a particular treatment. Effective systemic anti-fungals have been reported to decrease the length of the disease from 8-16 weeks down to 3 weeks.

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#### **Other Treatment Methods**

Fulvicin (griseofulvin,) in lambs is thought to be effective in treating CLF. No efficacy trials have ever been conducted, however, anecdotal reports have been positive.

Please note!!! AMDUCA regulations require a safe and reasonable withdrawal time be established before a drug can be prescribed extra-label. Currently no pharmacokinetic data in sheep is available, so a withdrawal time cannot be established. Pharmacokinetic data in other species vary greatly; consequently extrapolation of pharmacokinetic curves to sheep is not possible.

Thiabendizole (TBZ) has been used. A veterinary-labeled product is no longer available, however a human product is still available.

- 1 lb. of petrolatum jelly
- 20 grams of Thiabendizole
- 15 ml isopropyl alcohol
- Liquefy the Vaseline, stir in powder, and add the alcohol. Makes approx. 4% ointment.

Over the counter human topical products such as 1% Chlortromazole, Tinactin, may be effective. Again, WDT must be established.

The efficacy of various fungicidal shampoos is questionable due to the short exposure time on the skin.

Iodine compounds have not shown to be very effective against other dermatophytes. However these compounds may reduce the infectivity of the lesions.

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#### **Environmental control**

Captan, (available at garden centers) One pound in 15-20 gallons of water to spray down the premises and soak clippers, brushes, cards, etchas been recommended. Veterinarians must be careful in recommending the use of this product anyway other than the label. There is no leeway for extra-label use in products controlled by the EPA. (AMDUCA does not apply)

Bleach, and other agents with anti-fungal activity may be used.

#### **Prevention**

Practicing strict biosecurity is critical. Advising clients not to share show equipment, stalls, water and feed buckets are important as well as disinfecting shearing equipment between sheep. The spores in the environment seem to be extremely long-lived (years). Exhibitors must be conscience of the risk of transmission to the farm flock. Lambs that are exhibited should be housed separately from the farm flock and infected animals should be isolated, with the isolation area considered contaminated for several years.

Providing animals access to sunlight, prevention of crowded, humid, or dark conditions is also important. Avoid areas that housed infected animals in the past. Finally, lanolin and wool provide excellent natural protection against fungal infections, therefore advise show clients to clip and wash animals as little or as late as possible.

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