



## BIOSECURITY: FOR THE SHEEP SHEARER

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# Biosecurity: For the Sheep Shearer

## Introduction

Biosecurity is defined as preventative management practices that protect the health and wellbeing of both animals and humans from the entry or spread of disease agents. For on-farm biosecurity to be successful, everyone involved with sheep production and product harvest need to make biosecurity a priority to prevent disease spread between animals or to humans (zoonotic diseases are diseases that can be transmitted between animals and humans). It is important for shearers and shearing crews to implement biosecurity practices to minimize and prevent the spread of diseases between sheep, equipment, farms, and humans during the shearing process. Diseases or external parasites can be spread between sheep within a flock during the shearing process. However, sheep diseases can also be brought onto the farm by people and equipment moving from one location to another during the shearing season. According to the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service, over 90% of all sheep operations have sheep sheared at least once per year, and almost 79% of these farms hire individuals or shearing crews from outside of their farm (2003).

Biosecurity for a commercial sheep shearer (or shearing crew) that travel an area shearing flocks of sheep and other fiber animals cannot function like an integrated or closed farming operation. However, the same general considerations and actions can be observed to prevent the spread of diseases within a flock and when moving between flocks and farms. Individuals handling various animals should develop a biosecurity plan that addresses the disease(s) likely to be encountered, their potential for spread, and preventative measures needed when moving between flocks and farms. Shearers, shearing crew bosses and sheep producers, should recognize disease risk and take steps to minimize the risk of disease spread between animals within a flock and between different flocks of sheep. This factsheet has been developed to help individuals involved in the shearing process recognize sheep diseases with increased risk of spreading during

shearing and biosecurity practices to implement to help reduce the risk of disease spread during the shearing process.

## Contagious Sheep Diseases of Concern During the Shearing Process

1) **Caseous Lymphadenitis (CL)** is a contagious bacterial disease of the lymphatic system of sheep and goat caused by the bacterium *Corynebacterium pseudotuberculosis* (Figure 1). The common clinical sign of caseous lymphadenitis is abscessed lymph nodes on the side of the head or beneath the jaw. However, CL abscesses can be found in other locations where lymph nodes are present, like the point of the shoulders or in the back of the lower hind legs. These abscesses are often ruptured or cut during shearing, and the causative organism can be spread on equipment, clothing, or even the shearer's hands to other sheep they have contact with. The bacteria can live for long periods of time on infected equipment, premises, and soil. For this reason, the healthy, young animals should be sheared first, followed by animals of questionable health. If an abscess is ruptured during shearing, the shearer should disinfect shearing equipment exposed to the abscess fluids immediately (American Sheep Industry Assoc., Inc 2015).



Figure 1: Caseous lymphadenitis abscesses. Picture by Sarah M. Smith.



2) **Club Lamb Fungus** (ringworm) (Figure 2) has become a larger concern in recent years as a result of increased prevalence in show flocks and club lambs being exhibited at fairs. Frequent shearing of show sheep and contaminated shearing equipment are the primary reasons for the increased spread of club lamb fungus. This is a fungal disease caused by species in the *Trichophyton* or *Micosporum* genera. The fungi reproduce tiny spores on sheep's skin and can survive long periods of time in the environment, in facilities, and on wool, tools, or equipment. Club lamb fungus is also contagious to humans and often requires a physician's prescription treatment to cure. If sheep have club lamb fungus it is easy to spread to humans or other sheep. Great care must be taken to disinfect equipment, wash clothing, and use care when handling infected animals and wool to prevent transmission between animals and humans (American Sheep Industry Assoc., Inc 2015).



Figure 2: Club lamb fungus. Picture by Rusty Finch.

3) **Contagious foot rot** is an infectious and painful condition caused by the bacterium *Dichelobacter nodosus*. It affects the skin between the toes of sheep and goats and can spread to the hoof structure (Figure 3). This bacterium is highly contagious and can cause significant economic losses to a flock through treatment costs and reduced productivity. Animals with foot rot will become lame and exhibit swollen red skin between the toes or lesions. When trimming the feet of flocks with foot rot, hoof trimming tools should be sanitized between each animal.



Figure 3: Contagious foot rot. Picture by Sarah M. Smith.

Contagious foot rot can also be spread by using infected shearing chutes or infected soil on equipment or footwear. If the shearer or shearing crew is providing portable shearing chutes or ramps, be sure to remove all organic material between flocks; clean and disinfect both chutes or ramps, and footwear, prior to going to the next flock to shear (American Sheep Industry Assoc., Inc 2015).

4) **Soremouth**, or orf, is a viral disease that causes red nodules, blisters, and scabs to form primarily on the lips and around the mouth of sheep and goats (Figure 4). This virus can also be seen around the udder regions of nursing ewes or does. Soremouth is caused by a pox virus that can also affect humans, so caution should be used when handling infected sheep. Wash hands with soap and water after you have contact with sheep because some may be asymptomatic. A physician should be consulted if suspicious lesions appear on your hands or any part of your body (American Sheep Industry Assoc., Inc 2015).



Figure 4: Soremouth, also known as orf. Picture by Chelsea Schilperoort.

5) **External parasites** such as sheep keds (Figure 5), lice, mange mites, and ticks can be transmitted in the wool clip and on shearers' clothing. External parasites are usually a flock problem, so if one animal appears to be infected the rest are likely infected. Shearers and other members of the shearing crew handling wool should wear freshly laundered clothing between flocks and thoroughly clean shearing moccasins or other footwear between flocks (American Sheep Industry Assoc., Inc 2015).



Figure 5: Sheep ked (*Melophagus ovinus*); male, female, and puparium from left to right. A blood-feeding external parasite of sheep. Source wikimedia.org; Author Acarologiste.

6) **Pinkeye** is a contagious bacterial disease of the eyes of sheep, goats, and cattle caused by different infective agents. It can cause serious, permanent eye damage and even blindness. Sheep with pink eye exhibit excessive tearing or yellow crusty discharge that accumulates on the eyelids and hairs around the eye; severe cases will involve the cornea (Figure 6). Use care not to spread the disease between sheep, especially when shearing infected sheep that have wool on their face around the eye area where there is excessive tearing and conjunctivitis. Wash hands and disinfect shearing equipment exposed to fluids immediately (American Sheep Industry Assoc., Inc 2015).

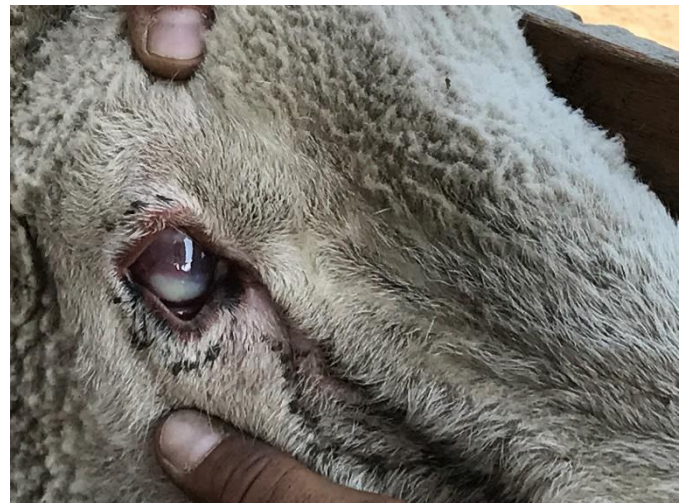


Figure 6: Pinkeye caused by bacteria infection. Picture by Sarah M. Smith.



## Sheep Shearer Biosecurity Management Techniques

1) The most important biosecurity technique that a shearer can incorporate into their business is to properly maintain, clean, and disinfect all equipment and clothing when working between different flocks. Consult the equipment manufacturer to determine the best way to clean and disinfect the shearing equipment, handpiece, combs, and cutters. Some disinfectants are very corrosive and not suitable for use on this type of equipment. An effective and inexpensive disinfectant for general sheep handling equipment is a mixture of two to four ounces of chlorine bleach per gallon of water. Equipment should be cleaned of manure and other organic material prior to disinfecting with the bleach solution to be effective (American Sheep Industry Assoc., Inc 2015). However, bleach can be highly corrosive on metal equipment commonly used for shearing, such as; combs, cutters, and handpieces. Chlorhexidine is a fast acting non-toxic and non-irritating antiseptic and antimicrobial disinfectant that can be used on most shearing equipment. It is available at most farm stores. Shearing equipment should be properly dried, oiled, and stored after disinfecting to prevent metal corrosion. A good resource on disinfection, various disinfectants, and infection control is the [Center for Food Security and Public Health](#).

2) Put on a clean, newly-sharpened comb and cutter when you start shearing a new flock. If you shear a potentially infected sheep, clean and disinfect your equipment prior to shearing other sheep to minimize spread between animals within the flock.

3) Reduce exposure to infected animals within a flock. Shear healthy young sheep first, followed by older sheep. Shear potentially unhealthy or sick sheep last. If sheep have lumps or potential CL, handle them last and try not to cut or rupture the abscess. Tell the owner or manager about the abscess so they can treat and isolate affected animal(s).

4) Know the health status of the animals you will be shearing so you can ensure your biosecurity practices are adequate to prevent the spread of potential infectious agents within the flock.

5) Properly clean clothes and shoes that you wore while shearing. Change into clean clothes/coveralls between flocks, and shower between flocks if possible. Many external parasites (keds, ticks, lice, or mites), bacteria, and viruses can catch a ride with you between flocks if you do not take precautions. Manure and mud on shoes can transfer disease between flocks, so be sure to clean organic material off your shoes before disinfecting them (The University of Maine 2017).

6) Dispose of any excess wool or waste you picked up before starting your next shearing job.

7) Develop and maintain a detailed record keeping system to identify the potential origin or spread of a disease in the case that there is a disease outbreak in area flocks you have sheared. Good record keeping may also aid in disease eradication.

8) No one biosecurity plan is going to work for every shearer or shearing scenario. Use a common-sense approach to prevent the accidental introduction of infectious agents to sheep within a flock or other flocks you shear.

## Summary

It is essential that sheep shearers and shearing crews recognize different sheep diseases and implement preventive practices to protect healthy sheep within a flock, sheep between flocks, and themselves (zoonotic transmission) from the spread of disease. The economic loss from infectious or chronic disease can be devastating to individual flocks or even an entire animal industry. Shearers have a key role in harvesting wool on sheep farms and implementing biosecurity measures to keep the sheep flocks they service healthy and economically productive.

## References

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