



Cheesy gland in sheep and goats

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This disease is most commonly called cheesy gland or yolk boils. Its scientific name, *Caseous lymphadenitis* is often shortened to CLA.

Cheesy gland causes abscesses in the lymph glands, lungs and sometimes other organs of sheep and goats. The pus in these abscesses is pale green in the early stages which turns cream as the abscess hardens and becomes 'cheesy' or 'caseous'.

This condition is the most common bacterial disease of sheep in Australia. Almost half the adult cull sheep measured in more than 400 flocks in Western Australia between 1988 and 1991 had cheesy gland. The average prevalence in 1995 was estimated at 20 per cent.

No reliable data are available on the prevalence of this disease in goats, but the disease level is probably smaller than in sheep.

Economic significance

Cheesy gland causes losses to individual sheep producers and to the sheep meat industry. The losses depend on meat and wool prices, but in 1991/92 they amounted to \$30 to \$35 million throughout Australia.

Wool producers incur the greatest losses caused by cheesy gland.

In addition to the 20 per cent of the average flock that develop cheesy gland, about a further 10 per cent of the flock become infected with the bacterium but do not develop abscesses. The wool production of these sheep is also reduced.

On average, sheep lose between 4 and 7 per cent of their clean wool production in the year they are infected. In 1991/92, wool losses amounted to \$15 to \$20 million in Australia.

Losses also occur at the abattoir. About 1 per cent of adult sheep carcasses are condemned because of cheesy gland, which costs about \$1 million annually. Less severely affected carcasses are trimmed and this results in further losses of \$1 to 3 million. The largest cost to the abattoir is the cost of inspecting for this disease. In 1990/91 this was about \$10 million.

Cheesy gland in goats can be fatal and affected goats in milking herds need to be culled.



Figure 1. Sheep carcass condemned because of cheesy gland abscess in hind leg



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Cause

Cheesy gland is caused by the bacterium *Corynebacterium pseudotuberculosis* (sometimes wrongly called *Corynebacterium ovis*). The disease is found in all the world's major sheep production areas. This bacterium causes the abscesses or 'boils' seen in slaughtered sheep.

Signs

In most cases, cheesy gland is only seen by farmers when sheep are killed on the farm. Abscesses are most often noticed in sheep over two years old. The most commonly affected lymph glands are in the shoulder (near the neck) and thigh (near the flank) in sheep, and under the jaw or on the neck in goats. Lungs and other organs can also develop abscesses.

It is difficult to recognise cheesy gland infections in live sheep, but feeling the lymph glands in the shoulder and flank may reveal swelling that is likely to be a cheesy gland abscess. This is not a reliable way of estimating the amount of cheesy gland in a flock.

To estimate the incidence of cheesy gland, send a sample of 50 to 100 culls to an export abattoir. Contact the Australian Quarantine Inspection Service veterinary officer at the abattoir to ask if these sheep could be examined to determine their level of cheesy gland.

Abscesses in goats are usually visible as swollen lumps under the jaw or on the neck.

Spread

Eighty to 90 per cent all cheesy gland infections are spread at shearing, usually at the second and third shearings. Many sheep infected with cheesy gland have abscesses in their lungs. Some of these abscesses discharge into the airways where the bacteria can be coughed up. Cheesy gland commonly spreads when sheep cough bacteria onto skin cuts of other sheep. Bacteria can also penetrate intact skin when sheep are shower or plunge dipped.

In goats, the head is most commonly affected, so the most likely point of entry is through abrasions on the head or in the mouth.

Biosecurity

Livestock, machinery, fodder and people can introduce animal and plant diseases, weed seeds and pests. Develop a biosecurity plan for your farm to reduce the risk of these problems.

For sheep purchases, ask the vendor for an Animal Health Statement which covers OJD, footrot, lice, brucellosis, drenching and vaccination history.

The vast majority of sheep flocks in Western Australia have some sheep with cheesy gland. If a flock is known to be free or have low levels of cheesy gland the owner may choose to seek evidence from another flock that it has a similar cheesy gland status. The most practical way to measure the level of cheesy gland is to get an abattoir to count the number of visibly infected sheep in a line of "cull for age" ewes.

Since cheesy gland cannot be effectively treated, quarantine or treatment of purchased sheep will not be effective.

Prevention

Vaccination is the most effective way to control cheesy gland.

The vaccine against cheesy gland is combined with vaccines for other diseases. Four brands of cheesy gland vaccine are currently available: Glanvac[®], Cydectin Eweguard[®], Guardian[®] and Websters 6-in-1[®]. Most are available as three, or six-in-one vaccines.

In Western Australia only the three-in-one vaccine is necessary.

The additional diseases prevented by six-in-one vaccine are either very rare or not found in this State. It may be worthwhile using a six-in-one vaccine for valuable rams to prevent 'big head' but even this disease is very rare.

Vaccinate lambs twice, four to six weeks apart, preferably at marking and weaning. Yearly boosters to adult sheep are an essential part of a vaccination program. Vaccinate sheep close to, but before, shearing. Boosters at shearing are much less effective.

When starting a vaccination program, give two vaccinations to lambs and to other sheep only shorn once. Starting a vaccination program against cheesy gland in sheep after their second shearing is of questionable value.

A study in 1996 showed that, on average, the prevalence of cheesy gland in unvaccinated flocks in Western Australia was 24 per cent. However, the prevalence in flocks using cheesy gland vaccine without giving two doses to lambs and yearly boosters every year was 22 per cent, an insignificant difference. The prevalence in flocks using the recommended vaccination program was 1 per cent.

Similar vaccination programs should give effective control of cheesy gland in goats.

The spread of cheesy gland may be decreased by reducing the opportunity for the disease to spread at shearing and dipping.

Minimise the time shorn sheep are kept under cover after shearing and avoid shower dipping if lice have not been detected.