

Eperythrozoonosis in sheep

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Eperythrozoonosis is a disease which occurs sporadically in sheep in New South Wales. It is caused by bacteria called *Mycoplasma ovis* (formerly *Eperythrozoon ovis*) occurring in the bloodstream of infected sheep. It is likely that *Mycoplasma ovis* (*M. ovis*) is present in many flocks causing inapparent infection. On some properties the presence of bacterial infection progresses to disease, characterised by the destruction of red blood cells, leading to anaemia and jaundice. Goats can also be infected.

Deaths may occur in severely affected young sheep, especially if they are stressed by yarding. Losses of up to 30% of the flock have occurred in these circumstances. For this reason it is important to seek advice from your veterinarian if you suspect ill-thrift in a mob of lambs or weaners before you yard or handle them.

Eperythrozoonosis causes further losses in abattoirs when infected carcasses are condemned because of jaundice.



This lamb has pale conjunctiva of the eye due to anaemia. *M. ovis* infection was confirmed on examining blood.

Spread of the disease

Disease is spread mechanically between animals by the transfer of infected red blood cells. Many outbreaks have occurred within 4 to 6 weeks after marking, mulesing or shearing, but cases have been seen before marking. Other outbreaks have not been associated with any handling of the flock.

Possible methods of spread include:

- any stock management procedure that causes bleeding and thus facilitates the transfer of blood between animals, for example ear tagging, mulesing, castration, tail docking, or shearing;
- blood sucking insects, particularly mosquitos;
- flies on wounds, such as caused by marking, mulesing or shearing.

Susceptible sheep

Eperythrozoonosis has been seen in sheep of all ages from 4 weeks upwards. Young sheep, particularly weaners, are most severely affected but older sheep can also be noticeably affected.

The effect of *M. ovis* is more severe if sheep are stressed by other conditions such as internal parasites or malnutrition. Merinos are more commonly affected than other breeds.

Older sheep are usually resistant to the disease due to previous exposure and the development of immunity. They still have the organism in their bloodstream, and if a stress factor lowers their immune system they can be affected by *M. ovis* again.

The disease has a habit of recurring on certain properties year after year in lambs, particularly after mulesing. Owners of such flocks should seek advice on management changes that may reduce the chance of recurring disease.

Signs of disease

Ill thrift

Poor growth performance or 'ill thrift' is a problem in all parts of NSW. More than one factor can be involved, which makes it difficult to pinpoint the



cause. Recognised contributing factors include malnutrition, trace element deficiencies and internal parasites – particularly barber's pole worm (haemonchosis).

Eperythrozoonosis can be an important component of the ill thrift problem. If infected sheep are also suffering from poor nutrition or worm infestation then they are more likely to show reduced growth or 'ill thrift' when infected with *M. ovis*.

Anaemia

Pale gums indicate anaemia. Anaemic animals will be weak and lag behind the flock. They may exhibit respiratory distress or staggering if forced to run.

Jaundice

A yellow discolouration of the gums indicates jaundice.

Death

Severely affected animals may die, especially if stressed by yarding and handling.

Diagnosis

The diagnosis of eperythrozoonosis is based on clinical signs, post mortem examination and the results of the laboratory examination of blood smears and other blood tests.

It may be difficult to detect the presence of the organism in the blood, because by the time clinical signs are apparent, the sheep do not usually show the organism in a blood smear.

A diagnosis of infection is best made early in the course of infection. For this reason it is best to take a number of blood samples from a cross-section of the flock: about fifteen to twenty samples are recommended. It is important to include healthy 'non-affected' animals, as they show much higher numbers of *M. ovis* in the blood than the profoundly anaemic 'affected' animals.

The disease can be confused with other causes of anaemia, such as barber's pole worm infestation or liver fluke, or other causes of jaundice such as chronic copper poisoning or leptospirosis.

It is important to have the cause of anaemia correctly diagnosed before carrying out treatment. For example, treating for barber's pole worm when *M. ovis* is the cause will lead to mortalities, and vice versa.

Treatment

The recommended treatment for eperythrozoonosis is to avoid handling and put the affected mob in a paddock with good feed and water and leave them alone for 4 to 6 weeks. Sheep will usually have recovered from the disease after this interval. Outbreaks may last for a number of weeks.

Antibiotic treatment has traditionally been considered rarely successful, as reinfection occurs and the opportunity for the sheep to develop immunity is lost. The successfulness of antibiotic treatment is being reconsidered. Seek advice from your district veterinarian or veterinary practitioner.

It is important to have the diagnosis confirmed, as eperythrozoonosis may occur in conjunction with other conditions. If other diseases are causing the problem, then the treatment recommended for eperythrozoonosis could be disastrous.

Control

Losses from the disease can be controlled if affected sheep do not need to be yarded after they have been stressed by marking, mulesing or shearing.

- Ensure good hygiene during marking, mulesing or shearing. Keep marking and mulesing instruments clean to avoid the transfer of infected red blood cells between animals. Good hygiene will eliminate the need to yard sheep for treatment for infections following an operation.
- Ensure sheep are in good condition and are on good feed before and after an operation.
- Develop management programs which eliminate the need to yard stock within 6 weeks of marking/mulesing or shearing. This involves, for example, careful consideration of when you time marking/mulesing, shearing and parasite control programs. Careful paddock feed planning is also important to eliminate the need to move lambs within 6 weeks of marking/mulesing.

Careful attention to nutrition, worm control and trace element supplementation (if required) should limit the severity of the disease if it occurs.

Further information

For further information contact your local veterinary officer, district veterinarian or veterinary practitioner.

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