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CONTAGIOUS OPHTHALMIA (PINKEYE) OF SHEEP

By C. R. TOOP, Chief Veterinary Surgeon

CONTAGIOUS OPHTHALMIA, better known to the sheep owner as "pinkeye", is a common disease of sheep particularly during the summer months. It is known to occur in most countries where sheep are kept and is prevalent in Australia throughout the sheep-raising areas.

Cause

The disease is caused by the organism Rickettsia (Colesiota) conjunctivae, which is found in the eyes of affected sheep and it may be transmitted experimentally by the transfer of eye discharges from affected to healthy animals.

The disease is highly contagious and often spreads rapidly when sheep are brought into close contact with one another during droving, prolonged yarding or on long rail journeys. Flies are believed to play an important part in the transmission of the infection, and the fact that the disease is more prevalent during the spring and summer months than in winter and that it may spread from sheep to sheep in the absence of direct contact, lends support to this view.

The infective agent does not survive for very long away from the sheep—it does not persist in the eye discharges after drying—and so the risk of infection from contact with trucks or yards previously occupied by affected sheep must be regarded as remote.

Contagious ophthalmia is a highly specific disease, and it cannot be transmitted from sheep to other animals. Infectious keratitis or "pinkeye" of cattle in which the symptoms are similar is caused by an entirely different organism. The belief commonly held by sheep men that the disease is caused by dust or foreign bodies such as grass seeds is entirely without foundation.

Symptoms

Sheep of all ages and breeds are subject to the disease. Both eyes invariably become affected but in some cases one eye may show evidence of infection a few days earlier than the other.

In the early stages there is inflammation and reddening of the conjunctivae (the membranes which line the eyelids and cover the front portion of the eyeball) with congestion of the blood vessels and swelling of the eyelids. This is accompanied by a profuse watery discharge from the eyes and discomfort upon exposure to bright light.
After a day or two the cornea (clear front portion of eye) commences to show evidence of opacity which first appears at the margin and may later extend towards the centre. The watery exudate is now replaced by a discharge of pus which gums the eyelashes together and issues from the corner of the eye.

Opacity of the cornea is usually only partial and though the sight may be impaired it is not seriously affected. In some cases, however, the whole of the cornea becomes opaque and has a white milky appearance. The sheep in consequence becomes completely blind and unless given special attention may die from starvation or thirst.

Ulceration of the cornea occurs in some of the more severe cases.

Most sheep are only mildly affected, and the opacity does not extend far beyond the margins of the cornea; these cases recover completely within 10 to 14 days. In severe cases, however, the disease may persist for as long as six weeks and the animal may be blind for a month. But the eye of the sheep has remarkable powers of recovery and even when the cornea has become completely opaque and deeply ulcerated healing will occur leaving little or no blemish.

Carriers

After the symptoms have subsided and recovery has occurred the causative organisms may persist in the eyes for several months. In about half of the sheep which have suffered an attack the organisms are still present in the eyes even after an interval of 100 days. One case has been recorded in which a sheep remained infective for 250 days.

These sheep are carriers of the disease and while showing no symptoms themselves, they are able to transmit infection to other sheep with which they are in contact. The presence of these carriers explains why recurrent outbreaks of pink-eye may take place in a closed or self-contained flock without the introduction of infected sheep from an outside source.

Under such circumstances isolated cases may continue to occur in the flock, passing unnoticed until conditions arise which favour the spread of infection, such as droving or yarding during a period when flies are prevalent, and may precipitate a severe outbreak. This also explains why sheep which are apparently healthy at the time of purchase may subsequently develop the disease.

Immunity

Recovery from pinkeye does not result in the development of a lasting immunity. Recovered animals are resistant to reinfection for a period of about three months, after which the immunity gradually wanes. More than 50 per cent. of recovered sheep, however, remain resistant for a year, but when this resistance is lost the sheep again become susceptible and may suffer further attacks if exposed to infection.

When the relatively short duration of the immunity is considered together with the persistence of carriers in the flock the periodical occurrences of fresh outbreaks will readily be understood. Moreover each fresh drop of lambs will result in the addition of a large number of highly susceptible animals to the flock, thus increasing the likelihood of further outbreaks.

Treatment

Mild cases of the disease recover spontaneously and do not require treatment. This type of case predominates in most outbreaks and the rapidity of recovery is not increased by treatment. Recovery starts on the third or fourth day and is complete about seven days later.
Severe cases showing opacity of the cornea, ulceration and blindness, however, require special attention. Without treatment they may suffer serious loss of condition or death may result from accident, thirst or starvation. Such sheep should be removed from the flock and transferred to a small hospital paddock where there is good shade and easy access to feed and water or, better still, they may be placed in the shearing shed where hand-feeding may be practised.

There are a number of proprietary preparations available which may be recommended for the treatment of affected sheep. These include plastic puff packs containing antibiotics such as terramycin and aureomycin, chloromycetin eye ointment and aerosol sprays containing methyl violet. The available evidence suggests that preparations containing aureomycin are most likely to give the best results.

Wool should be clipped from around the eyes before treatment and any foreign bodies such as grass removed with blunt forceps.

Prevention

There is no effective method of prevention. The practice sometimes adopted by sheep men of treating the whole flock cannot be recommended, since this, by bringing the sheep into closer contact with one another, favours the spread of the infection and is likely to do more harm than good.

It is far better to allow the flock to remain undisturbed and make a daily inspection for the detection of badly-affected or blind animals, which should be transferred to a hospital paddock or shed for treatment.

Precautions should, however, be taken to prevent the introduction of the disease into clean flocks and a careful examination for ophthalmia should always be made whenever new sheep are purchased.

The absence of symptoms does not necessarily mean freedom from infection, since symptomless carriers may be present. Though inspection before purchase does not eliminate the risk of bringing the disease on to a property, it may be expected to reduce it and is always a wise precaution.
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