

Sheep health and drought feeding

Extensive Industries Development

There are a number of conditions which occur more commonly when drought-feeding, especially when sheep are congregated on small areas for feeding. Some of these conditions are discussed here, together with recommendations regarding prevention and control.

The oral route is important in the transmission of some sheep diseases. Examples include salmonellosis, worms, coccidiosis, and Johnes disease. The risk of spread of such diseases can be minimised by avoiding faecal contamination of feed and by regularly changing the areas in a paddock where sheep are fed.

Affecting all ages

Grain poisoning

Cause: Grains are highly fermentable carbohydrate-rich foods. Following ingestion of excessive quantities there is a sudden change in the microbe population in the rumen, leading to the formation of large amounts of lactic acid which causes this condition. See Primefact 330 *Grain poisoning of cattle and sheep*.

In practice, the condition commonly occurs:

- when sheep are first given access to grain;
- when there is a sudden increase in the amount of grain being fed;
- when too much grain is fed, allowing excessive consumption;
- when there is a change in the type of grain or concentrate being fed or even the same grain type but from differing sources.

Clinical signs: Vary from mild to acute, depending on amount of grain and previous experience with grain. In milder cases, sheep are depressed, anorexic (do not feed) and ataxic (unstable on feet). In severe cases there is scouring, abdominal pain, acute lameness with heat and pain around

coronet (laminitis), apparent blindness, recumbency and death.

Treatment: Based on neutralising the excessive ruminal lactic acid. Treat with 60 g Causmag (magnesium oxide) or 15 g sodium bicarbonate in 1 litre of water as a drench for each sheep. Affected sheep should be given roughage such as hay until recovered. Drafting off the affected cases may be practical in large mobs with small numbers affected. Valuable stock should receive veterinary attention.

Control and prevention: Follow guides for introducing sheep to grain (see Table 1 in Primefact 346 *Full hand feeding of sheep – feeding management*). The first day of a feeding program should be considered to have commenced when sheep start to eat the grain when fed. Do not allow build-up of grain in the paddock.

When changing feeds, there should be a gradual changeover. If changing from wheat to oats or oats to barley, mix the new feed into the old feed over at least four feeds before the old feed cuts out.

Add 2 per cent sodium bentonite to grain rations. This will help reduce the risk of poisoning during grain introduction.

Enterotoxaemia (pulpy kidney)

Cause: Enterotoxaemia is an acute toxemia caused by the proliferation of specific clostridial bacteria in the intestines which produce toxins. These bacteria, normally present in the gut, multiply and produce toxin whenever the movement of food through the gut is slowed. e.g. by grain poisoning.

Clinical signs: Usually sudden death, with rapid decomposition of the carcass, purple discolouration of skin, wool is easily plucked.

Control and prevention: All stock should be given a clostridial booster vaccination before feeding. In cases where sheep have not been vaccinated, a full vaccination program should be implemented immediately.



Worm infestations

Sheep in drought-feeding situations can be more susceptible to internal parasites than those normally grazing pasture. Sheep that are stressed for any reason can also lose their immunity and may show the effects of worm infestation – e.g. stress through lactation.

Cause: The worms commonly involved are brown stomach worm and black scour worm. Where sheep congregate in wet damp areas or after rain, barber's pole worm and *Nematodirus* (thin-necked intestinal worm) may also cause problems.

Clinical signs: One or more of these signs may be present: ill-thrift, anaemia, exercise intolerance, and scouring. Note that if sheep are scouring it may not be worms. It is important to determine the cause of the scouring before reaching for a drench gun. Check using a WormTest.

Treatment: When worms are confirmed, drench the sheep with an effective drench.

Control and prevention: Ensure that the sheep are on an effective worm control program (for example, WormKill, DrenchPlan or [Far] WestWorm). If sheep are not on a program, do a WormTest first, then drench them if necessary with an effective drench before they are put into a feedlot, or before they are put into small yards or paddocks.

Liver fluke

Cause: This is more common in dry times when sheep graze wet fluke-prone areas.

Clinical signs: Chronic fluke results in anaemia and ill-thrift. Severely affected sheep can develop bottle jaw. It can be confused with barber's pole worm. Acute fluke infestations often cause sudden death in sheep. Sheep with liver fluke are more prone to black disease in areas where it occurs but this can be prevented by a clostridial vaccination program using a multi-valent vaccine e.g. '6-in-1'.

Treatment: Sheep affected with fluke should be treated with a triclabendazole drench (e.g. Fasinex[®], Flukare[®]) which will remove both mature and immature fluke.

Control and prevention: Prevent sheep from gaining access to fluke-prone areas in drought times, particularly when they are being hand fed.

For a list of drenches for sheep worms including liver fluke, see Primefact 152 *Registered drenches for sheep worms*.

Sheep lice

Cause: This is more common in a drought feeding situation for several reasons:

- the congregation of sheep assists transmission between sheep;
- there is more movement of sheep between mobs and between paddocks;
- sheep in drought-feeding situations tend to have more tender wool and therefore the clinical effects are more marked when sheep rub or bite.

Treatment: This depends on the length of wool on the sheep and the previous history. Advice should be sought on the most effective treatment.

Plant poisoning

Cause: Hungry sheep gaining access to feed containing toxins – for example, when sheep are changed from a bare paddock to a paddock with some regrowth. Often plants not normally considered toxic may be eaten in excessive amounts and can cause mortalities. Also in drought situations, hungry sheep will eat plants that are not normally eaten.

Clinical signs: This depends on the toxins involved. Nitrate and cyanide poisoning will cause sudden death. Other plants may cause scouring and nervous signs including staggers and ataxia.

Treatment: This depends on the plant species involved. Seek veterinary advice if plant poisoning is suspected.

Control and prevention: Prevent access to toxic plants by hungry stock. Ensure sheep have a full stomach before they are moved out of a bare paddock.

Urea poisoning

Cause: Ingestion of excess amounts of urea in blocks, in mixed feed, or when sheep drink pools of water on the top of urea blocks after rain.

Clinical signs: Abdominal pain, nervous signs including excess salivation, and sudden death.

Treatment: Not usually successful.

Control and prevention: Ensure that urea is mixed thoroughly with feed when used as a supplement. Keep blocks out of the rain in sheltered areas.

Salmonellosis

Cause: Faecal contamination of feed and water supplies with salmonella organisms. It is often associated with stress and with sheep in areas that are wet and muddy following heavy rain or from overflowing water troughs.

Coccidiosis, which may result in scouring and dysentery, can also occur under these conditions.

Clinical signs: Fever, scouring and sudden death.

Treatment: This requires antibiotic treatment and advice should be sought from your veterinarian.

Control and prevention: Prevent faecal contamination of feed and water. Do not keep sheep that are under stress in wet, muddy areas.

Withhold affected sheep from slaughter until outbreak is controlled.

Pink eye

Cause: A bacterial infection of the eye, aggravated by the congregation of sheep in dusty areas, especially if flies are present.

Treatment: Antibiotic ointment in severe cases. Most sheep will recover if left alone but ensure that they have access to feed and water.

Control and prevention: Difficult in drought situations when sheep are being brought into confined areas.

Urinary calculi (bladder stones) in wethers and rams

Cause: The common predisposing cause is a limited water intake. This can occur as a result of faecal contamination of water, stagnant or brackish water, or high salt content in the water.

Losses also occur when sheep are fed on grain rations without a calcium supplement.

Clinical signs: Often sudden death. When sheep are examined there is a grossly enlarged bladder caused by an obstruction.

Treatment: Not practical and rarely successful.

Control and prevention: If problems are occurring, then an increase in the salt content of the ration may assist. The aim is to increase the water intake of sheep. However, this will only work if the water is drinkable.

The disease is best prevented by ensuring that sheep have access to drinkable water supplies at all times.

Grass seed infestation of the gums

Cause: Feeding hay with a lot of mature grass seed.

Clinical signs: Sheep failing to eat, sometimes slobbering at the mouth. Examination of the mouth indicates masses of grass seed around the inside of the gums.

Treatment: Removal of the grass seed.

Control and prevention: Take care when feeding pasture hay heavily contaminated with grass seed.

Affecting mainly young sheep

Enterotoxaemia

This is more common in young stock and the same precautions described under 'Affecting all ages' (above) should be followed.

Pneumonia

Cause: Bacterial infections aggravated by dry, dusty conditions. It is more common where lambs are being fed on dry, dusty feeds in troughs, especially finely hammer milled hay.

Clinical signs: Nasal discharge, coughing, ill-thrift and sudden death.

Treatment: In severe cases antibiotic treatment can be used as advised by a veterinarian.

Control and prevention: Avoid feeding dry, dusty feeds. This may require some damping down of the feed in troughs.

Vitamin A deficiency

Cause: Vitamin A deficiency can occur in lambs born to grain-fed or drought-fed ewes. Grain and most hays are low in vitamin A. Lambs must be completely off green feed for some months before clinical signs will occur.

Clinical signs: Night blindness, eye discharges and ill-thrift.

Treatment: Vitamin A drench.

Control and prevention: Lambs off green feed or lucerne hay for 3–4 months may need a vitamin A supplement. A single drench should give six months protection.

Vitamin E deficiency

Cause: Vitamin E deficiency is often associated with feeding weaners on hay or grain over extended periods, especially young weaners.

Clinical signs: Animals go down. They appear bright and alert but they are reluctant to stand. In other cases there is sudden death. Examination of dead animals reveals pale muscles.

Treatment: When the diagnosis is confirmed, treat with an oral drench of water-soluble vitamin E using a dose rate of 3000 IU per animal.

Control and prevention: There is no preventative treatment. Watch weaners and young sheep for signs suggesting vitamin E deficiency and seek advice. Note that vitamin E deficiency can resemble white muscle disease due to selenium deficiency. However, selenium deficiency is most unlikely in a drought situation.

Nematodirus infection (thin-necked intestinal worm)

Cause: A mass hatch of nematodirus worm eggs after an autumn break when sheep graze on short green pick.

Clinical signs: Scouring, ill-thrift and weaner deaths. Clinical signs may occur before there is an increase in nematodirus egg counts on WormTest

Treatment: Drench with an effective drench.

Control and prevention: Difficult because of the long-term survival of the Nematodirus eggs and the mass hatch following the autumn break or rain after a prolonged dry spell.

Coccidiosis

Cause: Stress and overstocking of lambs and weaners under moist conditions, such as muddy feeding and watering areas. Heavy pasture contamination and stress can lead to a build-up of infestations. The clinical effects are aggravated by concurrent worm infestations.

Clinical signs: Scouring with watery faeces which may contain blood, lack of appetite, dehydration, with anaemia and ill-thrift in some cases.

Treatment: Confirm diagnosis and seek the advice of a veterinarian.

Control and prevention: Avoid placing lambs and weaners in situations where gross faecal contamination of feed will occur.

Teeth abnormalities

Cause: Long-term feeding of weaners on grain without calcium supplementation.

Clinical signs: Dribbling from the mouth and abnormalities of the molar teeth.

Control and prevention: Ensure that young sheep on grain rations receive a calcium supplement of at least 1.5 per cent of their ration in ground limestone.

Affecting adult sheep

Periodontal disease

Cause: Often faulty molar dentition. The incisor teeth are not so important. The effect of molar teeth abnormalities may not become obvious until sheep are stressed in drought feeding situations.

Clinical signs: Ill-thrift, emaciation and sometimes a cud discharge from the mouth.

Treatment: There is no treatment. Remove affected animals from the flock.

Control and prevention: Cull old sheep early in the drought rather than hand feeding them.

Johne's disease

Cause: a chronic bacterial infection of the intestines in sheep, which becomes more obvious when sheep are stressed.

Clinical signs: Wasting and ill-thrift in sheep two years of age and older, which will not respond to drenching or other treatments. Sheep die within 3–4 months of first showing signs of the disease. Diagnosis is on post-mortem.

Treatment: There is no treatment.

Control and prevention: If animals are at risk from the disease, vaccinate with Gudair[®]. This is a once in a lifetime vaccine that provides effective protection against infection. In areas where OJD is a threat, supplementary feeding should be offered in troughs and feeders to avoid ingestion of soil. The disease is notifiable and advice should be sought from your local District Veterinarian.

Affecting pregnant ewes

Pregnancy toxaemia

Cause: Poor nutrition in late pregnancy, especially in twin-bearing ewes. Outbreaks of pregnancy toxaemia are often brought on by stress.

Clinical signs: Affected animals are dull and listless, and may appear blind and wander into objects. Animals eventually become recumbent and very depressed.

Treatment: Products such as Ceton[®], Ketol[®], Vytrate[®] or Lectade[®]. When cases occur, increase feeding levels.

Control and prevention: Ensure an adequate ration, especially for twin-bearing ewes. Note. It is important that pregnancy toxaemia be differentiated from hypocalcaemia and polioencephalomalacia.

Hypocalcaemia

Cause: A sudden fall in blood calcium levels in late pregnancy and early lactation.

Clinical signs: Often sheep are found down or may appear listless. They may show some nervous signs. It commonly occurs shortly after lambing.

Treatment: Intravenous or subcutaneous calcium borogluconate.

Control and prevention: Prevent sudden changes of diet or other forms of stress. Calcium supplementation of diets is only recommended when sheep are being hand fed on grain and concentrate diets over several months. Sheep can also develop hypocalcaemia when grazing short

lush green feed immediately after a drought has broken. Grazing of high oxalate plants such as sorrel, oxalis or portulaca can also cause hypocalcaemia.

Chronic copper poisoning

Cause: Long-term excessive intake of copper in the diet, or as a result of a build-up of copper associated with liver damage caused by grazing on paterson's curse or heliotrope. Clinical disease is brought on by some form of stress – for example, nutritional or lactation stress.

Clinical signs: Animals show severe jaundice.

Treatment: Incorporation of molybdenum in the diet will help to control outbreaks. However, molybdenum should not be added to the rations of normal sheep as it may predispose to copper deficiency.

Control and prevention: The disease can be prevented in susceptible groups of animals by incorporating molybdenum at certain times on the advice of your veterinarian.

Toxoplasma abortion

Cause: Feeding of pregnant ewes on hay or grain contaminated with cat faeces.

Clinical signs: Abortion, dry ewes or the birth of small, weak lambs.

Treatment: There is no economic treatment once the outbreak commences.

Control and prevention: Ensure that pregnant ewes are fed on hay or grain which is not contaminated by cat faeces. That is, reserve silo-stored grain for the pregnant animals.

Campylobacter abortion

Cause: Bacterial infection of sheep picked up by ingestion of the organism. Carrier animals excrete the organism in their faeces. Outbreaks occur when ewes in the last two months of pregnancy are hand fed on the ground under cool, moist conditions when the organism will survive on pasture.

Clinical signs: Abortion in the last two months of pregnancy.

Treatment: There is little value in treatment in most circumstances. Valuable animals might be treated with antibiotics on the advice of a veterinarian.

Control and prevention: Outbreaks occur as a result of faecal contamination of feed. When feeding pregnant ewes, care should be taken to try to reduce the degree of faecal contamination – especially when sheep are being hand fed under cool, moist conditions. This may be shortly after a drought breaks where hand feeding continues until pasture growth is established.

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