

NADIS Health Bulletin



Knowledge transfer to farmers

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Health Quiz

High Involuntary Culling Rates in Adult Sheep

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Economic importance

High culling rates of young ewes before the end of the productive lives (involuntary culls) are a major financial loss to farmers. The cost differential between a replacement gimmer and ewe culled after only one to two crops of lambs could be as high as £50-£60 especially if the latter sheep is in an emaciated state.

Cause

Voluntary culls are those sheep which are sold at the end of their productive lives in the flock, typically after four to six crops of lambs depending upon breed and management policy. Involuntary culls are those sheep sold before the end of their productive lives in the flock for reasons such as poor condition/weight loss, prior vaginal prolapse, chronic mastitis, and chronic lameness. Ideally, the target should be for no involuntary culls but this can rarely be achieved in most flocks.

There are several important causes of weight loss in adult sheep necessitating thorough investigation in order to prevent/control them.

Clinical signs

Farm records will identify those sheep that have had a vaginal prolapse (Fig 4) necessitating culling. Unlike vaginal prolapse, uterine prolapse rarely occurs in the same sheep during a subsequent pregnancy and these need not be culled. Chronic mastitis (Fig 5) will be identified by handling the udder of all sheep immediately prior to the breeding season. The normal udder will have completely involuted by two to three months after weaning; chronic mastitis is identified by a hard swollen udder which may contain several softer golf ball-sized abscesses which may discharge pus. Lamé sheep that have not responded to treatment must be culled noting that such sheep will rarely be fit for transport to market or slaughterhouse.

Determining the reason(s) for poor condition (Fig 2, 3) in the proportion of the flock culled prematurely necessitates thorough veterinary examination. There are numerous reasons for weight loss in



Fig 1: Can the number of sheep culled before the end of their productive lives be reduced in your flock thereby increasing your income?



Fig 2: Emaciation of the young ewe on the right necessitating premature culling. Compare with the healthy flock mate on the left.

individual adult sheep which your vet will investigate including:

- Poor dentition including broken mouth and molar (cheek) teeth problems
- Chronic diseases such as pneumonia and sheep pulmonary adenomatosis
- Johne's disease (paratuberculosis)
- Various tumour conditions
- Poor nutrition, parasitic gastroenteritis and fasciolosis (liver fluke), and sheep scab typically present as a whole group/herd problem.

Welfare implications

Debility is a major welfare concern.

Brief outline diagnosis and treatment

[Parasitic gastroenteritis](#) and [chronic fasciolosis](#) are diagnosed by demonstration of eggs in faecal samples. While these parasitic diseases typically present as group problems it is possible that some sheep were not drenched correctly or evaded gathering and treatment.

Broken mouth is readily identified by examination of the incisor dentition. It is often surprising how many sheep with either an undershot or overshot jaw evade the breeding selection process and are presented as lean adult sheep. Abnormal molar dentition (Fig 6) can be much more difficult to recognise because not all sheep have difficulty masticating food and quidding is not always present. A mouth gag and pen torch are often necessary to fully examine the cheek teeth.

Chronic diseases such as pneumonia and sheep pulmonary adenomatosis (Fig 7) require careful veterinary examination. Confirmation of sheep pulmonary adenomatosis is very important in order to implement disease control measures.

Johne's disease (paratuberculosis) (Fig 8) is common in sheep in some areas of the UK and may cause premature culling/death of up to 5 per cent of all adult sheep. It is important to appreciate that, unlike cattle, sheep affected with Johne's disease rarely have watery diarrhoea. Blood and/or faecal samples, in conjunction with postmortem examination, are important to establish a definitive diagnosis.

Management/Prevention/Control measures

Parasitic gastroenteritis and chronic fasciolosis are controlled by strategic management policies developed in conjunction with the farmer's own veterinary surgeon who has local knowledge of the disease risks. Broad guidelines are contained in the disease-specific links on the NADIS website to which the reader is directed.

There are no specific prevention measures for broken mouth but such sheep often lead productive lives when there is abundant grazing and adequate supplementary feeding during periods of high metabolic demand such as late gestation and early



Fig 3: Involuntary cull ewes are rarely presented for veterinary examination. However, an accurate diagnosis is essential to implement control measures and reduce the farmer's financial losses.



Fig 4: Farm records will identify those sheep that have had a vaginal prolapse and necessitating culling.



Fig 5: Chronic mastitis is identified by a hard swollen udder two to three months after weaning



Fig 6: Pouching of food material and displacement of molar teeth affecting this ewe's right cheek.



Fig 7: Chronic diseases such as sheep pulmonary adenomatosis require careful veterinary examination.

lactation. There is no treatment for molar dentition problems.

Chronic pneumonia caused by bacteria may respond to a course of antibiotics prescribed by a veterinary surgeon.

The prevalence of sheep pulmonary adenomatosis can be reduced by a number of management practices including:

- Purchasing breeding replacements only from known disease-free flocks
- Confining/housing sheep for the minimum period necessary
- Confining/housing sheep based upon age and not keel mark (expected lambing date)
- Improving ventilation of sheep buildings
- Prompt culling of sheep with exercise intolerance.

Johne's disease (paratuberculosis) can be greatly reduced by vaccination. Such vaccination is expensive and a benefit:cost may only be realised if premature culling/deaths exceed 3 per cent of all adult sheep per annum. It is therefore essential that such a programme is fully discussed with the farmer's veterinary surgeon.



Fig 8: Unlike cattle, sheep affected with Johne's disease rarely have watery diarrhoea. Note the emaciated condition and poor fleece.

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NADIS Health Bulletins are designed to improve farm income, animal health and welfare by promoting disease control and prevention.

Discuss how health planning can improve the profitability of your farm with your veterinary surgeon.

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