



SHEEP VETERINARY SOCIETY

Division of the British Veterinary Association

Sheep scab: update on diagnosis and investigating suspected lack of efficacy of Macrocytic Lactones (MLs)

Sheep scab is the most important ectoparasitic disease of sheep in the UK, representing a significant threat to both animal welfare and farm economics. Sheep scab is currently endemic in the UK and a notifiable disease in Scotland, while for England and Wales, it is a criminal offence to fail to treat sheep visibly affected by scab or to move them off the holding, other than direct to slaughter.

Diagnosis of sheep scab

The main differential for sheep scab is lice infestation, usually caused by the biting louse, *Bovicola ovis*. Sheep may be infested with both *Psoroptes ovis* and *Bovicola ovis* at the same time, so it is always important to consider that both parasites may be present. A farm visit is the best way to investigate pruritic or alopecic sheep, as it allows you to inspect a group of animals and to select the most appropriate ones for sampling (e.g. those that are rubbing or biting at themselves).

The gold standard for the diagnosis of sheep scab or lice is to identify the parasites. However, the **Psoroptes ovis ELISA test** can detect antibodies to scab mites in serum from 2 weeks after infestation, so can be useful to indicate exposure before the development of clinical signs or in other situations where mite numbers are low.

Depending on how longstanding the infestation is, you may be presented with animals where there is no obvious wool loss. If there are any areas of fleece that are discoloured due to rubbing or wet from the animal biting, these are the best areas to sample. Part the wool to see if there are any areas of scurf on the surface of the skin and take samples from this area.

Skin scrapings are taken using a scalpel blade drawn at a right angle across the skin surface. The mites will normally be located around the moist edge of the lesion with the greatest numbers found at the leading edge which is usually the lowest point down the flanks (furthest from the head). Remove excess fleece with curved scissors and place this separately into a small bag. Expose the edge of the lesion and take the skin scraping using a scalpel blade held at around 45°. Examine the sample microscopically under low magnification (x100). Samples can also be sent to a diagnostic laboratory.

Where there are no skin lesions or no parasites are detected in skin scrapes, the **Psoroptes ovis ELISA test** can be a useful tool to investigate whether sheep scab is present. More information on applications of the ELISA test may be found at:

www.biobest.co.uk/assets/.../Sheep%20scab%20FAQs_website_version1_June18.pdf

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Investigating suspected lack of efficacy of MLs

1. **If live scab mites are found** on sheep after treatment with MLs. Check on the administration of treatment (date, dose given, product used, product storage, weight of sheep, methodology) to determine whether the product was given according to data sheet recommendations. Treat by plunge dipping in OP.
2. **If lice are found**, treatment options are plunge dipping in OP or applying a pour-on synthetic pyrethroid. Pour-on will only have limited efficacy against lice in full fleeced sheep.
3. **If dead mites are found** but the sheep are still itchy, consider sampling more animals to try to find live mites or sample again in 2 weeks.
4. **If no mites or lice are found**, consider sampling more animals and/or sampling again in 2 weeks. The ELISA test may be used to confirm whether or not scab was the cause of the pruritus.

All cases of suspected lack of efficacy should be reported to the Marketing Authorisation Holder (MAH) or VMD at www.gov.uk/report-veterinary-medicine-problem.

Use of the Sheep scab ELISA when investigating suspected lack of efficacy of MLs

Antibody titres can remain positive for a few months after effective treatment so sampling at one point in time is of limited value when investigating lack of treatment efficacy. However, titres start to decline from 2 weeks after effective treatment, whilst where treatment has not been effective titres will not decline and may continue to rise. However, the use of paired serology to confirm lack of efficacy has not yet been fully validated in terms of the magnitude of the decline in titre or number of animals to test.

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