

Flock Biosecurity for Sheep

Summary

- Effective biosecurity is paramount for infectious disease control – it helps to prevent disease entering or leaving a farm.
- Boundaries, quarantine, cleanliness and mindful management are vital features of biosecurity.
- Following a flock health plan implemented with the help of your vet enhances biosecurity and facilitates control of disease.

Introduction

Ever-tightening margins within farming make it essential to improve the efficiency of production through the control and prevention of the introduction of infectious disease.

- Flock biosecurity is the cornerstone of infectious disease control. A proper risk assessment followed by the application of a few basic flock biosecurity rules can improve animal health and lead to improved productivity.
- Flock biosecurity and certification of freedom from specific diseases are desirable for those selling breeding sheep to provide assurance to clients. Attention to detail and vigilance at all times are vital for success. A written flock health and biosecurity plan for the farm drawn up with the farm's veterinary surgeon can facilitate this.

Closed flock systems where purchased animals are kept to the absolute minimum will reduce disease risk to the lowest level, but for those flocks where the addition of a significant number of breeding stock is required then a well thought through purchase policy and accurate animal identification and movement records are vital biosecurity elements.



Biosecurity: protection of a farm/holding from the entry and spread of disease; allows maximisation of the health, welfare and productivity of livestock.

What is biosecurity?

Flock biosecurity is a barrier erected to prevent infection or reinfection of the flock. Where particular diseases are present in the flock they can then be eradicated within this barrier. If flock biosecurity measures are not applied then disease control can only be attempted by vaccination, culling or treatment strategies that may be expensive, and usually incur an annual cost.

Why is biosecurity important?

Good biosecurity reduces the incidence of disease, resulting in an overall improvement in health, welfare and productivity of animals. It can play a part in national disease control and is important for international trade.

Outbreaks of disease often relate to a breach in biosecurity, increasing the rate of spread between farms and potentially across the country.

Many diseases may not initially be recognised as a major cost to the sheep enterprise but left unchecked they will significantly reduce the gross margin of the farm enterprise.

How can I implement biosecurity?

A flock health plan should include biosecurity measures specific to your farm. It should be reviewed annually with your vet and kept up-to-date.

A list of general biosecurity measures follows. These may not all be applicable to your farm, but the more you can do the better.

In Great Britain the Premium Sheep and Goat Health Scheme provides Flock Biosecurity Rules and a testing and monitoring programme which can lead to certification of specific disease-free status; this is available for EAE, MV and scrapie. Many pedigree flocks and those selling breeding replacements are members of these schemes and some commercial flocks can cost-effectively use the schemes to eradicate disease.



General Biosecurity Measures

These are practices relevant to several diseases. It is advisable to take heed of as many of the points as possible, many of them can be adapted to make them suit your situation.

- Operate as a closed flock, or as near to it as possible – breed own replacements to minimise buying-in. Cautiously source bought-in stock – purchase privately from a few reliable sources – ideally buy accredited animals privately. Where possible, avoid buying through a market.
- Do not hire tups – disease can quickly spread through several flocks. If you choose to share a tup, do so only between flocks of similar proven health status, with effective biosecurity in place on both units.
- Quarantine incoming stock upon arrival for 28 days, no matter the health status of the flock they have come from. Footbath and drench for worms and fluke upon arrival and keep off pasture for at least the next 24 hours. Check animals daily for signs of disease. Whilst in quarantine animals can undergo laboratory testing and treatment for targeted diseases according to your Flock Health and Biosecurity Plan.
- Isolation facilities are essential for quarantine of incoming animals. They should prevent any direct or indirect contact with other stock. A building separate from any other can be used, as can a separate paddock. No air space, drainage or dung storage should be shared with other animals. Sheep in the isolation facility should be tended last, using dedicated protective clothing for the facility, or preferably tended by someone who has no contact with other sheep. The facility should contain a cleansing and disinfection point. Quarantine should also be available for sick or diseased animals to ensure that they can be separated from other stock.
- Embryos/semen should be from donors certified free from infectious disease, in particular scrapie, Border Disease and MV.
- Effective boundaries – fences must be stock-proof to prevent straying; marches should ideally be double-fenced to prevent contact with neighbouring stock; electric fence over gateways and be mindful of potential contact with other stock when moving sheep via roads.
- Rented grazing – be aware of the risk if this land is used for other stock – ideally rent ground that does not carry other stock throughout the year.
- Slurry/dung management – avoid spreading dung from cattle onto sheep-grazed pasture.
- Avoid contact with sheep of unknown health status – if contact has occurred (e.g. with a neighbour's stock) quarantine implicated animals and test for disease prior to releasing back into the flock.
- Shows or sales – Taking sheep to shows or sales and returning them to a flock is a high-risk action and is best avoided. Keep showing to a minimum; retain show teams in isolation when they return to the farm and throughout the show season – they should undergo quarantine and testing prior to reintroduction to the flock. Animals that have not been sold at a sale should return to isolation and be retained there until they are sent to another sale or they have completed the quarantine procedure.
- Feed and bedding suppliers – Use only reputable suppliers for purchased feed and bedding to reduce the risk of introducing infections such as toxoplasmosis and salmonellosis. Do not use mouldy forage or straw as this increases the risk of listeriosis.
- Water supply- use piped mains water rather than rely on streams or rivers that may have run through other farms – disease can be carried in watercourses and infect animals downstream.

- Prevent access of vermin, wildlife and other farm animals, including dogs and cats, to feed and bedding stores and to the sheep whenever possible. Concentrates should be stored in bird- and rodent-proof hoppers. Ensure that farm dogs and cats are adequately controlled and regularly wormed. Control vermin and keep the farm tidy to discourage them.
- Hygiene – have a set of work clothes only for use on your own farm and a separate set for market/other farm visits. Do not leave the farm in your 'own farm wellies'. Hygiene is especially important when handling animals, checking and treating feet or eyes and after lambing ewes.
- Visitors – ensure that clean protective clothing is available for all visitors who work with your stock. Parking should be away from stock areas.
- Disinfection point – for use by visitors. Should be away from stock areas and close to parking area.
- Contractors/shared machinery and equipment – Disease can be carried on equipment – thoroughly clean and disinfect before and after use and ensure thorough disinfection on and off of farm.
- Vehicles/hauliers should have no access to stock areas. Designated delivery and pick-up areas should be at a site isolated from other sheep, preferably on the margin of the farm boundary. The site should have a concrete surface to allow effective cleaning and disinfection. Vehicles must be cleaned and disinfected with an appropriate disinfectant before they are used for moving stock. Do not allow your animals to be transported in vehicles that are not spotless. There should be a separate pick-up area for collection of fallen stock.
- Other species – can harbour diseases that affect sheep, e.g. MV and EAE in goats and Johne's disease in goats and cattle. Therefore, avoid co-grazing and co-housing. There should be a minimum interval of 2 months between grazing by different species.
- Traceability and identification – can make disease eradication easier as some diseases will likely have been passed on from dam to lamb so it may be desirable not to retain stock from infected dams.



Disease	Disease Summary	Flock Biosecurity procedures
Maedi Visna (MV)	Viral disease of sheep, causes wasting, respiratory signs, lameness, mastitis Spreading rapidly to new flocks throughout the country although slowly within flocks Accurate blood test available but an animal cannot be declared free until a negative blood test 6 months after arrival to a new flock because antibody production can take 6 months after exposure to the virus	<ol style="list-style-type: none"> 1. Purchase MV-free sheep from PSGHS-accredited flocks 2. Quarantine and test immediately 3. Repeat test in 6 months before release from quarantine or introduction to the flock
Enzootic Abortion of Ewes (EAE)	The most common cause of abortion in sheep Detected by blood test from a female sheep only after she has lambed or aborted – ewes can pick up infection as young lambs	<ol style="list-style-type: none"> 1. Purchase from EAE-free PSGHS-accredited flocks 2. Avoid buying pregnant or maiden ewes 3. Avoid buying-in lambs to twin-on Quarantine and blood test bought-in sheep
Sheep scab	Notifiable parasitic disease – highly contagious, causes severe itching and wasting Infection easily picked up over-the-fence, at markets, during transportation with other sheep or if cleaning between loads is inadequate. Treatment must kill all the parasites present as survivors could infest the entire flock.	<ol style="list-style-type: none"> 1. Obtain accurate diagnosis and treatment plan in conjunction with vet 2. Notifiable disease in Scotland 3. Treat and quarantine for 14 days 4. Observe flock for signs
Border Disease	Viral infection which causes abortion, infertility and ill thrift. Diagnosed by blood test	<ol style="list-style-type: none"> 1. Blood test in quarantine – do not keep virus positives
CLA	A blood-borne bacterial infection which causes skin lumps, abscesses and wasting in sheep.	<ol style="list-style-type: none"> 1. Check for skin lumps – have a vet examine lumps. 2. Ensure shearing equipment has been thoroughly cleaned and disinfected
Contagious ovine digital dermatitis (CODD)	A major cause of lameness in some flocks. Usually starts as an ulcer above the hoof and penetrates down behind the horn to cause severe lameness and loss of the hoof. Difficult to control and is best kept out of your flock.	<ol style="list-style-type: none"> 1. Quarantine and observe - check feet after 7 and 14 days 2. Vet examine unusual foot disease/not responding 3. Ensure transport vehicles are adequately cleaned and disinfected
Ovine Pulmonary Adenocarcinoma (OPA)/Jaasiekte	A viral disease of sheep which affects the lungs – causes tumours and respiratory signs. Affect all ages and there is currently no laboratory test to confirm diagnosis in the live animal	<ol style="list-style-type: none"> 1. Ensure vendor's flock is free from disease 2. Vet can ultrasound scan lungs of bought-in animals
Johne's Disease	A wasting disease of sheep. Infected animals test negative on blood tests and examination of faeces in the early stages of infection Cattle and sheep can infect each other so avoid co-grazing.	<ol style="list-style-type: none"> 1. Ensure vendor's flock is free from disease 2. Blood test any suspect and review purchase policy
Scrapie	A transmissible spongiform encephalopathy (similar to BSE in cattle). The PrP genotype of the animal will determine how resistant any sheep is to the disease.	<p>Buy in from scrapie free flocks only (SMS)</p> <p>Blood test bought-in sheep for PrP genotype and only purchase the most resistant animals (ARR/ARR genotype)</p>
Orf	Highly contagious viral skin infection Zoonotic	<p>Examine lamb faces, mouths, feet; ewe udders, inner thighs; tups' poll</p> <p>Have your vet examine any suspects and maintain in isolation until all affected areas have healed</p>
Footrot	Bacterial infection, the most common cause of lameness Can be bought-in, picked up from inadequately disinfected transportation or acquired via straying animals	<ol style="list-style-type: none"> 1. Quarantine and observe 2. Check feet after 7 and 14 days 3. Ensure your flock health plan addresses the risk of footrot.
Anthelmintic/Flukicide resistance	Resistance to one or more anthelmintic (wormer) families is present in many of UK sheep flocks and can be introduced to a farm with sheep (or goats) carrying resistant worms or fluke.	<ol style="list-style-type: none"> 1. Quarantine dose bought-in stock using a product recommended by your vet 2. Do not allow access to pasture for at least 24 hours

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