



DISEASE AND BIOSECURITY

You work hard to make sure your flock is fit and healthy, so it's important to take every measure possible to prevent the introduction of problems which could put your whole business at risk.

QUARANTINE

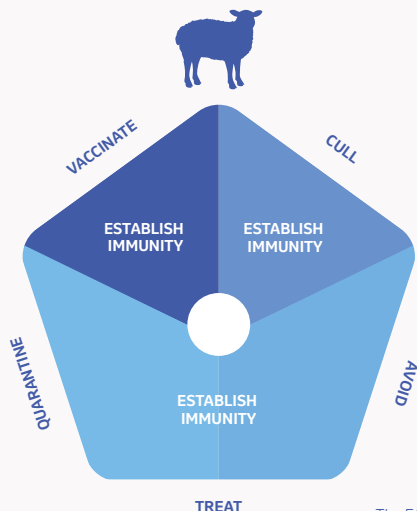
All sheep moving onto the premises should be subject to quarantine protocols, whether they've just been purchased or are your own sheep returning from grazing elsewhere. Your vet will advise you on the most appropriate treatments to administer¹.

- Buy replacements at least 6-8 weeks pre-breeding
- Quarantine for 4 weeks minimum
- Yard for 24-48 hours on arrival, ensuring easy access to feed and water
- Footbath all, and examine and treat any lame sheep
- Treat for parasites
- Blood sample for infectious diseases
- Turn out onto separate pasture previously grazed by healthy adult ewes, and monitor for disease
- Start appropriate vaccination regimes once settled in

WHAT PROBLEMS AND DISEASES CAN YOU BUY IN?

Lameness – the most common infectious causes are footrot and contagious ovine digital dermatitis (CODD)². Footrot is caused by the bacteria *Dichelobacter nodosus* which is very common and carried on the feet of many sheep, even ones which aren't lame. It favours wet conditions and is more likely to spread when sheep are kept more closely together, i.e. housing for lambing. Both CODD and footrot can be managed by following the FAI Farms Five Point Plan³:

1. Vaccinate animals against footrot to stimulate immunity
2. Cull badly or repeatedly affected animals
3. Avoid spreading infection at gathering and handling
4. Treat clinical cases early
5. Quarantine incoming animals



The FAI Five Point Plan³

Five Point Plan booklet guides can be downloaded from the MSD Animal Health Hub website⁴. Spending some time sitting down with your flock health advisor to go through all the points of the plan and identifying your weaker areas to focus on will pay off substantially, with the plan proven to reduce lameness levels to below 1% if followed diligently⁵. It will also benefit the farm by improving sheep welfare, reducing the costs and time associated with catching and treating lame sheep, and reducing your use of antibiotics.

Orf – you can buy in infected animals which may have lesions or may look normal but are sub-clinical 'carriers' of the infection and then go on to infect your flock. The virus can also survive for years in cool, dry buildings and on shared handling or shearing equipment. Orf is also zoonotic so can be passed from animals to humans.

Lambs with Orf lesions were found to weigh significantly less (10% less than unaffected group-mates) and have significantly lower body condition scores in one study⁶. Treatment is mainly symptomatic and so vaccination to prevent the disease is an option if you know Orf is a risk on your farm. Vaccination for Orf is licensed to reduce clinical signs and / or lesions of the disease.

Resistant worms / fluke – see SCOPS website for more information⁷.

Ectoparasites – including ticks (and tick-borne diseases), lice and mites such as sheep scab.

Infectious abortion (EAE, toxoplasmosis) – covered in 'tupping and early pregnancy' factsheet, *Campylobacter*.

Infectious eye disease – such as infectious keratoconjunctivitis (otherwise known as 'pink eye' or 'snow blindness').

ICEBERG DISEASES⁸

- **Border disease (BD)** – also known as hairy shaker disease, is very closely related to bovine viral diarrhoea (BVD) virus, causing infertility, embryonic loss, abortion and poor lamb performance.
- **Caseous lymphadenitis (CLA)** – classed as endemic, and prevalence of infected flocks is expected to continue to rise in the absence of effective control measures.
- **Maedi Visna (MV)** – leads to a progressive loss of condition, reduced flock production and poor economic performance. The disease is incurable: infected sheep become life-long carriers because they're unable to eliminate the virus.
- **Ovine paratuberculosis or ovine Johne's disease (OJD)** – a bacterial disease of the small intestine, causing chronic inflammation, poor absorption of nutrients and reduced metabolic efficiency, leading to reduced fertility and progressive weight loss.
- **Ovine pulmonary adenocarcinoma (OPA)** – also commonly known as jaagsiekte, a disease seen in sheep with a contagious lung tumour caused by infection with a retrovirus.

WHAT OTHER DISEASES ARE A RISK WITH AN OPEN OR CLOSED FLOCK?

Pasteurellosis is one of the biggest causes of death in all ages of sheep caused by *Mannheimia haemolytica* and *Bibersteinia trehalosi*⁹. These bacteria are carried by normal sheep in their tonsils. There are many trigger factors or stressors that initiate clinical cases of pneumonia or septicaemia resulting in death. These stressors include other infections, management changes such as dipping, castration, dosing for worms, diet changes, shearing or housing, and weather changes. Associated production losses and treatment costs can be considerable. Minimising stress is important to try and prevent pasteurellosis, but sheep will still be at risk because there is no way to completely avoid it even with excellent handling and management.

Vaccination is therefore advisable in addition to best practice management. Passive protection is achieved in lambs from vaccinated ewes with good colostrum ingestion. However, protection via colostral antibodies is quite short lived (3-4 weeks), which can leave a gap in immunity if lamb vaccination is delayed. Primary vaccination courses in lambs can be started from 3 weeks of age, with a second dose 4-6 weeks later. Full protection is achieved from 2 weeks after the second dose*. Boosters with a *Pasteurella* vaccine are often needed pre-autumn in store lambs on farms with a history of disease, as management changes such as introduction of concentrates or different forage, regrouping, transport, etc. can precipitate problems.

Clostridial disease is common and the bacteria are found everywhere in the soil and tissues of the body. The spore stage is long-lived and resilient. Clinical signs have a rapid onset and are often fatal. Some of the clostridial diseases tend to affect animals at particular ages. Lamb dysentery can strike within the first 3 weeks, so there's not enough time to vaccinate the lambs themselves against this disease. This means it's essential that the ewes are correctly vaccinated before lambing, with a vaccine that covers lamb dysentery, so that the lambs receive their protection from antibodies in their mother's colostrum*. Pulp kidney is another important cause of death in lambs and can strike between 3 weeks and 6 months of age. Lambs must be vaccinated as early as possible to see them through the risk period. Braxy, Black disease (associated with liver fluke) and struck all tend to affect older lambs, with tetanus and blackleg striking at any age. The best way to tackle clostridial disease is prevention. Try and manage the trigger factors: certain pastures may pose a higher risk because of long-lasting spores in the ground. Avoid sudden changes in diet, especially carbohydrate overload. Always practise good hygiene if castrating and docking to reduce the risk of tetanus. Parasites, such as fluke, should be controlled appropriately. However, even after these precautions, the risk to sheep is still very high because the bacteria are so widespread.

Vaccination is the most effective means of control. There are a variety of vaccines available, protecting against various clostridial diseases (see table). Some vaccines protect against both clostridial disease and pasteurellosis.

Heptavac[®] P Plus contains antigens from 7 clostridial species and antigens from the most important serotypes of *Mannheimia (Pasteurella) haemolytica* and *Bibersteinia (Pasteurella) trehalosi* and is indicated for the active immunisation of sheep against disease associated with infections caused by these bacteria. Legal category **POM-VPS**. Ovivac[®] P Plus contains antigens from 4 clostridial species and antigens from the most important serotypes of *Mannheimia (Pasteurella) haemolytica* and *Bibersteinia (Pasteurella) trehalosi* and is indicated for the active immunisation of sheep against disease associated with infections caused by these bacteria. Legal category **POM-VPS**. Bravoxin[®] 10 contains: *C. perfringens* type A (α) toxoid, *C. perfringens* type B & C (β) toxoid, *C. perfringens* type D (ε) toxoid, *C. chauvoei*, *C. novyi* toxoid, *C. septicum* toxoid, *C. tetani* toxoid, *C. sordellii* toxoid and *C. haemolyticum* toxoid. Legal category: **POM-VPS**. Ovipast[®] Plus contains antigens from *Mannheimia (Pasteurella) haemolytica* and *Bibersteinia (Pasteurella) trehalosi* and is for the active immunisation of sheep as an aid in the control of pasteurellosis caused by *M. haemolytica* and *P. trehalosi*. Legal category: **POM-VPS**. Footvax[®] contains antigens from 10 serotypes of *Dichelobacter nodosus* and is indicated for the active immunisation of sheep as an aid to the prevention of footrot and reduction of lesions of footrot. Legal category **POM-VPS**. Scabivax Forte[®] contains live Orf virus and is indicated for the active immunisation of sheep and lambs against Orf to reduce clinical signs and/or lesions of the disease. Legal category **POM-V**.

* Refer to individual product datasheet for specific information.

Further information is available from the SPC, datasheet or package leaflet. MSD Animal Health UK Limited. Registered office Walton Manor, Walton, Milton Keynes MK7 7AJ, UK. Registered in England & Wales no. 946942.

Advice should be sought from the medicine prescriber. Prescription decisions are for the person issuing the prescription alone.

Use Medicines Responsibly.

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Vaccines against clostridial disease and pasteurellosis for sheep and cattle in UK

	<i>C. perfringens</i> type C: Struck	<i>C. perfringens</i> type D: Pulp kidney	<i>C. septicum</i> : Braxy	<i>C. chauvoei</i> : Blackleg, clostridial meningitis	<i>C. novyi</i> type B: Black disease	<i>C. haemolyticum</i> type D: Bacterial red water	<i>C. tetani</i> : Tetanus	<i>C. perfringens</i> type B: Lamb dysentery	<i>C. sordellii</i> : Malignant oedema	<i>C. perfringens</i> type A: Enterotoxaemia	<i>M. haemolytica</i> + <i>B. trehalosi</i> : Pasteurella
Bravoxin 10 Sheep & cattle	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Heptavac P Plus Sheep	✓	✓	✓	✓	✓		✓	✓			✓
Ovivac P Plus Sheep		✓	✓	✓			✓				✓
Ovipast Plus Sheep											✓

VACCINATION TECHNIQUE

Technique is critical when using vaccines in livestock, in order to get the best from the product, reduce the risk of adverse reactions, and improve operator safety.

Ensure you always:

- **Store the vaccine correctly: most vaccines require to be stored in a working fridge at 2-8°C, but check individual product datasheet**
- **Only vaccinate healthy sheep**
- **Pick a dry day, ensuring sheep are clean and wool is dry**
- **Shake the bottle before use**
- **Take care when handling and administering the product**
- **Use a Sterimatic vaccinator**
- **Check the licence before using other treatments. If in doubt, do not give two different products at the same time**



Visit <https://www.msd-animal-health-hub.co.uk/DNOMF/sheep-masterclass-videos> to watch short refresher videos on handling and administering a variety of vaccinations for disease in sheep, including clostridial, Orf, lameness and many more!

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