

Ovine Pulmonary Adenocarcinoma (OPA)

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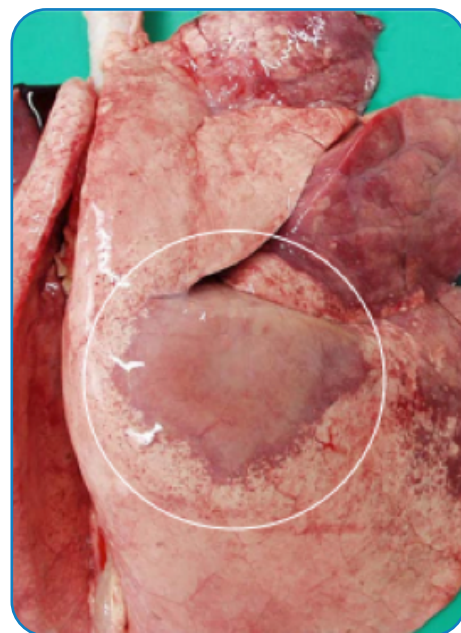


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Ovine Pulmonary Adenocarcinoma (OPA) is also often referred to as “Jaagsiekte”. This disease was first described in the UK by Dykes and McFadyean in 1888 although it was not fully understood at this time.

OPA is caused by a retrovirus, which is referred to as Jaagsiekte Sheep Retrovirus or “JSRV” for short. This virus infects cells within the lungs of sheep, causing tumours to develop and fluid to accumulate within the airways. JSRV present within both the tumours and the fluid is a source of infection to other sheep.

Symptoms of OPA include respiratory signs and ill thrift. Infected animals may also display lethargy and exercise intolerance during gatherings or whilst being handled. The sudden death of sheep in good body condition can be due to secondary infection with pasteurilla bacteria which cause pneumonia. It should be noted that several of these clinical signs are very similar to that of other iceberg diseases - especially MV.



Analysis of SRUC Veterinary Services data found that OPA is most typically diagnosed in ewes at around 4 years and tups at around 2 years of age. The disease has a lengthy incubation period (ranging from three months to six years), meaning that it is rarely diagnosed in young animals. It is common for animals with OPA to be unsuccessfully treated with antibiotics for suspected pneumonia on one or more occasion in the days and weeks before they die.

There are several methods by which OPA can be transmitted throughout a flock. Direct contact with infected animals is the primary method of transmission, with discharges from the respiratory tract containing large quantities of the JSRV virus. OPA can also be transmitted through colostrum and as a result, it is recommended that offspring from infected animals are not retained as breeding stock, as they are highly likely to succumb to the virus following high levels of exposure. It is unclear exactly how long the JSRV virus is capable of surviving within the environment, however during Iceland's OPA eradication programme, both fields and buildings were given a rest period of two months between housing "infected" and "non-infected" sheep – which proved to be adequate.

An abattoir survey examined the lungs from 3385 cull ewes and found an OPA prevalence of 0.9%; whilst a fallen stock survey of 140 sheep found a prevalence of 5.6%. A lack of awareness and failure to investigate the cause of death in old or thin animals means that the presence of OPA in a flock can go undiagnosed.

As with all the iceberg diseases the main method of introducing OPA onto farm is through the purchase of infected stock. These animals (despite appearing healthy and free of clinical signs) will be highly infectious. Research estimates that the losses associated with introducing OPA onto farm can be as high as 20-25% initially, reducing to 1-5% in endemic flocks.

At present, there is no commercially available test or vaccine for OPA. Ultrasound scanning is therefore the main method of disease detection in healthy live animals. False negative results can occur in the early stages of disease when tumours are too small to detect. False positives may occur as a result of lungworm, abscesses and other lung pathology. Ultrasound scanning involves scanning both sides of the animal's chest (so as to view both lungs) and as a result is fairly labour intensive. Scanning does, however, allow animals to be diagnosed before their condition deteriorates, meaning that they should still be of some value to be sold as culls.

Where OPA is suspected in a sick sheep a wheelbarrow test can be carried out by raising the hindquarters of the animal into the air. In this position fluid will be discharged from the nostrils confirming the diagnosis of OPA. The amount of fluid can vary from 10 to 400ml - with none in some cases. For welfare reasons sheep should be humanely euthanised immediately following a positive result.

Post-mortem examination of adult sheep that die of pneumonia, thin ewes/tups and cases of sudden death is a good way to establish whether or not OPA is present in a flock.

Following a diagnosis of OPA, and particularly where it is causing significant issues, farmers should consider implementing lung scanning as a method of disease control. It is important that both tups and ewes are scanned to ensure that an overall picture of flock health is obtained. As a minimum, scanning should be undertaken every 6 – 12 months, with frequency ultimately depending on factors such as prevalence and cost. Once diagnosed, infected animals should be separated from the main flock and culled immediately.

In a small number of flocks, concurrent MV and OPA infections have been found, further emphasising the need to monitor and maintain flock's health status.

SRUC Veterinary Services operates the Premium Sheep and Goat Health Scheme (PSGHS) which, despite not directly covering OPA, monitors several other Iceberg Diseases (MV & Johnes disease). Involvement in this scheme involves undertaking regular disease screening, helping to ensure the health status of your flock is regularly monitored. More information on SRUC's Premium Sheep and Goat Health Schemes (PSGHS) can be found at https://www.sruc.ac.uk/info/120113/premium_sheep_and_goat_health_schemes.