

# Border Disease (BD)

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**Farm  
Advisory  
Service**

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**Border Disease was initially identified in the UK in 1959 and can infect both sheep and goats. It is estimated that evidence of Border Disease infection can be detected in between 30.4 and 37.4% of UK flocks.**

Often referred to as “hairy shaker disease”, Border Disease is a pestivirus very similar to the one which causes Bovine Viral Diarrhoea (BVD) in cattle. As a result, cross-infection of both these viruses may occur between cattle and sheep.



Clinical signs of BD include the afore mentioned “hairy shaker syndrome”. This occurs in cases where lambs have been infected before birth. Border Disease affects the nervous system of these animals, resulting in a tremor. It also affects the animal’s ability to produce normal wool – resulting in lambs having rough, hairy coats. These lambs may also display an increase in crimp or change in pigmentation of their wool. However, it is possible for flocks to be infected for several years before experiencing a “hairy shaker lamb”. Therefore, poor fertility rates, high abortion levels and lambs with mild neurological defects should all be considered as signs that Border Disease may be present within a flock.



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It has been suggested that infection with BD may be responsible for increasing the proportion of barren ewes within a flock by 2-8% per year due to exposure to the virus during pregnancy. Infected lambs grow on average 20% slower throughout the first six weeks of life in comparison to uninfected lambs. This equates to a 2.5kg variation in liveweight between infected and uninfected animals. It is however possible for some infected lambs to appear clinically "normal" whilst others are weak and fail to thrive. .

**There are several methods by which Border Disease can be transmitted. Firstly by direct contact typically involving nose to nose contact with infected animals. The virus can also cross the placenta to infect the unborn foetus and can be detected in semen. Purchase of a persistently infected (PI) animal is the most likely way for Border Disease to be introduced to a flock. PI animals are created when foetuses are infected with Border Disease in the first half of pregnancy. They shed virus continuously throughout their life acting as a source of infection to other sheep.**

At present there is no vaccine available for Border Disease in the UK. Vaccinations used to prevent BVD in cattle are not recommended as a method of control despite similarities between the two viruses.

Flocks can be tested to establish whether BD is present. This can be carried out using a number of techniques, for example - tissue samples can be taken from aborted or dead lambs and blood samples from suspect live lambs. In the case of infected animals, these samples will contain high levels of the virus, indicating its presence. Dams of any lambs that test positive for Border Disease virus should also be tested for virus in case they are PIs. The test can also be used to screen bought in animals. Any persistently infected animals identified should be culled immediately. Blood samples can also be tested for Border Disease antibodies.

