BVDCymru

Guidance in carrying out screening on a farm in Wales.

Introduction

The Welsh cattle industry has the ambition to be BVD free and this means that all farms must have a status for BVD applied to them following screening of the herd.The key to eradicate BVD from a farm and ultimately Wales is to identify herds where the virus is circulating and to target the removal of PI animals within those herds This guidance has been prepared by **BVD**Cymru to help you carry out blood screening surveillance for your farmers.

Herds

All herds in Wales will have to be tested – there are no exceptions. For the purposes of this legislation a herd is all bovine animals assigned to the same CPH number.

When to carry out the screening test.

Having a good overview of the entire herd will give the veterinary surgeon greater confidence that they have selected both the correct animals and decided on the correct number of management groups. The most opportune time to do this is likely to be at the annual TB test and it is recommended that the opportunity to do this is taken. However it is recognised that appropriate cohorts for screening may not be present at this time or the TB test may not be at an appropriate time.

The veterinary surgeon will have to rely on their understanding of the herd structure to guide their selection at a more suitable time such as when there is youngstock available to test.

Possibility of transmission

The presence of an infected animal leads to direct transmission of the virus to other animals in the group and to the presence of virus on surfaces which act as fomites eg surface of equipment, clothing. Where this transmission is from a transiently infected animal the R_0 is estimated to be 0.25 whereas the R_0 from a PI animal could approach infinity[1]. This suggests spread on a farm is likely to lead to a high prevalence of antibody positive animals particularly where a PI animal has been present on the farm for some time.

Groups

The average beef herd size in Wales is 23 head of cattle (HCC industry statistics) and the dairy herd is just over 100 (Farming facts and figures 2022 – Welsh government). This

[1] R_0 indicates how contagious a disease is and the number indicates how many animals a single infected animal will pass the disease onto.

suggests that a single management group will be sufficient to determine the status of the herd in most cases. (in the Gwaredu BVD scheme 95% of herds sampled were based on a single management group)

What defines a group?

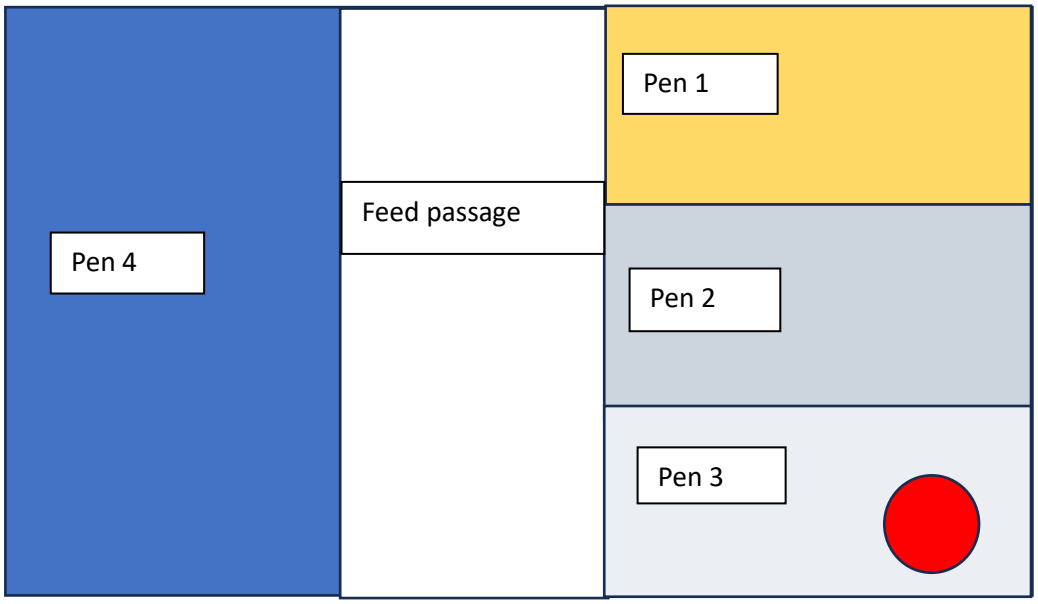
A group for the purposes of BVD detection on farm is a population of animals on a farm where disease is likely to circulate effectively. This could be all in a shed or all on a farm.

BVD spreads through secretions and while the virus is not particularly robust it will survive for long enough (A few hours) on surfaces that are commonly found on the farm to infect other animals. This will allow antibodies to be found in cattle that may not have obvious nose to nose contact.

The following scenario is presented as a shed but could equally be fields.

The red circle represents the PI animal and is in pen 3, the true location is unknown, and it could be in any pen.

The goal of the surveillance is to determine the presence or absence of this PI in this shed. All the animals in the farm are in the pens. If we select all the animals to be blood sampled from pen 3 then we would almost certainly determine this farm as being not-negative. Alternatively, if we sampled 5 animals from pen 4 then we may increase the chances of (mis) classifying this farm as a negative farm. This assumes that animals have not moved from pen to pen, nose to nose contact is minimal to non-existent and ignores fomite transfer as a method of virus moving between pens and fields. All of which will increase the chance of spread within the herd.



Depending on your professional judgement around, nose to nose contact, animal movement, aerosol transfer, fomite transmission and general spacing the above scenario

could be one or 4 groups. As we cannot be certain where any PI is to be found, if in the above scenario it is assessed as a single group then sampling an animal from each pen (and 1 extra) would be a wise course of action.

Selecting the correct individual animals within a management group:

Legislation

- The legislation defines the animals that should be sampled and while it indicates the ideal animals to sample schedule 25 part 2 gives the veterinary surgeon a degree of freedom to select other animals if needed.

BVDCymru recommends that animals are selected from the options in descending order of preference. This should be done to ensure that the correct status for the farm to aid eradication in Wales.

Number of animals to be tested in a group
It should be noted that the number of animals is independent of the size of the group sampled where there are more animals in the group than called for in the sampling instructions below.

Sampling options

Youngstock screen of 5 animals

- Between 9-18months of age
- Homebred
- Unvaccinated for BVD
- Within a sampled management group for at least 2months

This age group will avoid maternally derived antibody (MDA) interference with testing and reflect the most up to date assessment of the status of the herd. If there are no or not enough animals of this type to sample than alternatives should be considered.

Screen of 10 animals under 9 months.

- Homebred
- Unvaccinated for BVD
- Within group for at least 2 months.

It should be noted that the likelihood of getting a positive result is increased due to the presence of MDA.

At least 5 animals can be sampled from animals over 18 months of age.

As these older animals are both more likely to have been vaccinated in the past and/or have residual antibodies to BVD it increases the possibility of being assigned a positive status that reflects either vaccination or historical infection as once an animal has been exposed to BVDV they will remain antibody positive for years.

All animals in the group

Where there are less than 5 animals then all should be sampled for BVD antibodies (also see note below regarding vaccination).

Vaccination.

Vaccinating for BVD will affect the results from the surveillance testing. As best as can be managed unvaccinated animals should be sampled and the vaccination strategy for the farm should be developed with this in mind.
(If an inactivated BVDV vaccine has been used this should not affect the results after 1 month post administration of the last dose (it is advised to check the vaccine data sheet prior to sampling)

Further guidance on vaccination is currently being developed by **BVD**Cymru and will be issued in due course.

Outcome of testing

Most herds will have a result that discloses no antibody positive animals in the herd. These herds require no further action under the legislation until the next sampling deadline (12 months after the first sampling date recorded).

For those that have one or more antibody positive animal(s)on farm then the herd will be given a not negative status (part 5 Article 29). From the 1st of July 2025 the following actions are required by legislation.

a. Test all cattle as soon as practical to identify Persistently Infected animals or as soon as defined in any legislation. These should be culled as soon as possible and in any case are required to be in kept in isolation (Part 6 Article 43)

b. Do not move any cattle (except to slaughter) without having a test that indicate it is BVD virus negative to reduce the risk of spreading the virus to other herds.

However, for many farms will have only a low number of antibody positive animals and the farm history may be inconsistent with the presence of BVD. Where this is the case Part 4 schedule 22 allows the veterinary surgeon to undertake further investigation to support changing the status of the farm.
BVDCymru advises that animals that were previously tested as negative plus an additional fiveanimals(if available) from the same cohort that were previously untested are sampled after 28 days. If these animals are negative at this test this can be used as evidence that the farm is BVD negative.

For herds confirmed as not negative BVDcymru advises that veterinary surgeons work with their clients to determine the presence of PI animals and implement additional control measures for BVD infection prior to the deadline of 1st July 2025 when additional restrictions will come into place in BVD nonnegative herds.

This guidance has been prepared on behalf of BVDCymru by the Technical Advisory Group to help vets sample as accurately as possible under the legislation.