

Screening as part of BVD Herd Health

In a closed herd or a semi-closed herd (with a proper quarantine in place), there should be only one major phase of testing to detect the presence/absence of specific diseases. Thereafter a lesser level of testing is required to ensure that the herd status remains unchanged.

The majority of the effort will then be keeping animal identification accurate and in biosecurity, both of which are management issues and largely under your control.

It is a waste of your time and your money, attempting a herd health programme without having addressed animal identification and biosecurity. Dealing with these aspects has to be the initial steps. Talk to your vet about the issues involved.

Today, many vets use handheld devices to record ear tag numbers when tuberculosis testing. Talk to your vet about using their handheld (Husky, Psion, etc) to get you much better reports – with screening results for BVD and IBR based on age, sex, group, etc. Patterns are often apparent which may help track down the original source and the extent of spread of the virus and most importantly, prevent it entering by that route again.

Screening for BVD

With BVD virus is very widespread in Irish cattle and most animals have been exposed to the virus during their lives, there is a lot of antibody to BVD in the national cattle herd. Therefore, if you test adult animals in almost any herd, you will turn up a high proportion of animals with antibody to BVD. This is normal.

It makes much more sense at this stage to concentrate on the virus itself. Remove the persistently infected (PI) animals and you will remove the major source of virus from the herd.

Action is best taken before the start of your breeding season. Aim to remove PIs prior to when they can do most harm to your breeding herd.



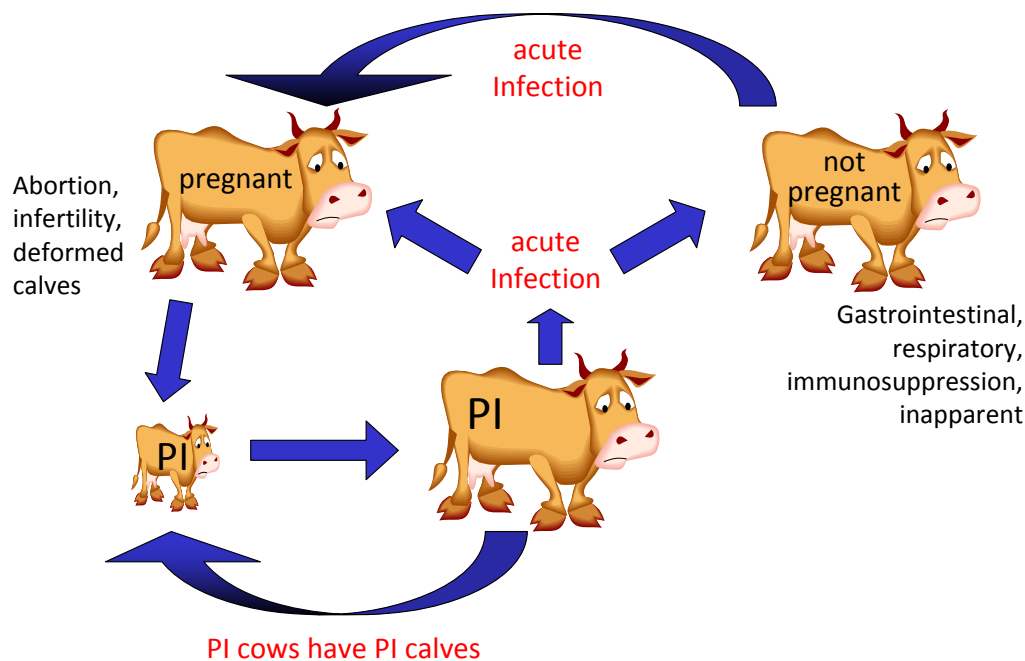
Is BVD present ?

Unvaccinated calves, born in your herd, between 9 and 12 months old are the most useful group for checking the BVD herd status. In these animals, maternal antibody should have declined to an undetectable level. If they do have antibody – they have been exposed to the virus this calendar year - therefore it can be taken that BVD virus is currently circulating in the herd.

Depending on your particular farm management (out-farms, shed lay-out, pen sizes, length of calving season, no. staff, etc), BVD virus may be circulating locally among some groups of cattle and not in others. You must include cattle from each group, ideally of the type discussed above, for a herd screen to be of any value.

A single clotted sample from 10-12 of these calves (from each group) should be tested using the BVD antibody ELISA. Any positive results in this age group may be significant and should be discussed with your vet.

If there are less than 10 animals in a group, test them all.



Schematic showing central role of PI animal in BVD virus transmission.



Hunting down that BVD source

Once you have established that BVD is circulating in your herd, it is sound and valid veterinary advice to identify and remove all PIs.

The recommended approach is

- 1) Test everything for BVD virus. Everything should be tested individually or as part of a bulk sample.
- 2) Remove all PIs identified
- 3) Implement biosecurity / quarantine / vaccination
- 4) Isolate & retest anything not tested in the first round.

The belt and braces approach is a blood test of the entire herd – this is probably best and simplest tactic for smaller herds.

A single clotted sample from each animal should be tested using the BVD antibody ELISA.

All antibody negative results will automatically be tested for BVD virus by the lab – remember PI animals do not produce antibodies to BVD.

All virus positive results are significant – indicating either a persistent infection or an acute BVD infection and should be discussed with your vet.

Test each virus positive animal three weeks later to rule out any acute BVD infections

Special categories of cattle.

Exclude calves less than 6 months of age from the first round of testing.

Calves between 0 and 6 months, usually have large amounts of colostral antibody, which can block the BVD virus ELISA.

If there are a small number of young calves, the BVD PCR can be used immediately but this is a more expensive test.

If there is a larger number, wait until the calves are all over 7 months and test them all together using the BVD virus ELISA.

Transferring an embryo into a PI recipient will lead to either a PI calf or an abortion. Always send samples from any proposed recipients to check their BVD status, before using them.

Always test the bull(s).

Replacement heifers are a very important group – rule out any potential PIs in this group.

Quarantine and test all bought-in cattle.



Tips

Everything has to be directly or indirectly tested – either by individual blood testing or by bulk sample testing.

PI dams have PI calves. So by testing this seasons calves, you are indirectly testing their dams. This can drastically reduce the amount of testing necessary.

If you find a PI calf, always test the dam - she could be the original source of the virus. You must be very, very sure of your records if using this method. Otherwise you will miss PIs and the whole screen will fail. If in doubt, don't use it.

Remember PI calves often die early in the year so any dams without calves in the screen must be tested themselves, individually.

A sample from the bulk milk tank can be used to rule out PIs in the milking herd. Remember if the bulk milk tank results are positive you must then test each cow individually. Bulk milk samples should be used alongside individual blood samples

Any female, which is pregnant on the day of the test, should be clearly marked. If she tests positive for BVD antibody, her calf should be tested for virus at birth and only introduced to the main herd when found to be negative for BVD virus. A sensible approach would be to do the BVD herd screen at a time when no or a minimum number of cows are pregnant – so removing this potential problem.



Step 3 – Keeping BVD out

For the current BVD situation in Ireland, it would be extremely foolhardy to establish a BVD naïve herd. To protect from inadvertent entry of the virus, [vaccination](#) has to be recommended alongside the other guidelines above (biosecurity, quarantine, etc). Talk to your vet for the best vaccination programme for your herd.

Once again, testing 10-12 calves aged between 9-12 months annually can check the BVD status of the herd.

Once again, keep in mind your farm management (out-farms, shed lay-out, pen sizes, length of calving season, no. staff, etc), as BVD virus may be circulating locally among some groups of cattle and not in others.

Monitor the BVD status of the herd using bulk milk antibody at six monthly intervals AND following outbreak of any reproductive or respiratory disease.

Any dam with a history of embryo loss, abortion, or stillborn calves should be tested for BVD.

Any animal, with a history of clinical disease consistent with BVD infection, should be tested for BVD. Talk to your vet about the signs to look out for.

Any animal, which dies with a history of clinical disease consistent with BVD infection, should have samples tested for BVD. Talk to your vet about the signs to look out for.

Keep all testing records and results from year to year.

It is generally regarded that herds complying with the above criteria will achieve freedom from BVD virus.

These herds represent a much lower risk of BVD infection for themselves and for those farmers buying from them.

