



The Scottish
Government

A large, stylized green outline of a sheep's head, facing right, occupies the left side of the cover. The outline is thick and white, with a lighter green fill. The sheep's eye is visible, and its ear is prominent.

VET'S GUIDE TO: Mandatory BVD Screening 2012

Supported by the BVA and the BCVA

The Scottish BVD Eradication Scheme: A Guide to Mandatory Annual Screening for Vets in Practice

January 2012

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INTRODUCTION

This booklet is a practical guide for vets in practice on mandatory annual screening under the Scottish BVD eradication scheme. It outlines how the scheme works, provides advice on the testing methods and explains what to do with samples.

You may wish to keep this booklet to hand for future reference, and use it to help you and your clients.

Most herds in Scotland are free of BVD – we estimate no more than a third of holdings have active BVDV infection in any one year. Removing BVD from those remaining herds would be worth thousands of pounds to most of them each year, and millions of pounds to the Scottish cattle sector.

BVD eradication is achievable in almost all herds in less than two years. The risk of re-infection through contact with infected animals remains, but by eradicating BVD at the national level, everyone benefits through minimising these risks.

Separate guidance for farmers has been sent to all cattle keepers and can be found on the Scottish Government website at www.scotland.gov.uk/bvd. Copies have also been sent to all livestock veterinary practices.

THE SCOTTISH BVD ERADICATION SCHEME

Key features of mandatory annual screening:

- Every keeper of a breeding cattle herd must screen their herd no later than 1 February 2013.
- It is the keeper's responsibility to ensure a screening test is done.
- There is a range of testing methods available, to suit the individual circumstances of each herd.
- Samples must be sent to an approved laboratory, along with any other information they need.
- The laboratory will declare a herd status of **negative** or **not-negative**, depending on the outcome of the test result.
- The laboratory will inform the keeper and the Scottish Government of the herd status.
- Vets may change the herd status of a client where they have conducted follow-up testing, once they have completed a free online course.
- The herd status may have consequences for trade and movement of cattle from December 2012.
- Where a calf is born in a non-breeding herd, it must be tested for BVD virus within 40 days of birth.

Breeding herds:

Keepers of breeding herds of cattle in Scotland must arrange to have their herds screened for BVD.

What is a breeding herd for the purposes of the legislation?

A herd is defined in the BVD Order 2012 as a breeding herd if breeding is planned or allowed to happen. There is no set number of births or cattle that are needed to constitute a breeding herd – one cow used for breeding would be enough.

The first test must be conducted by 1 February 2013. The next test must be conducted within 13 months of the first, and then at up to 13 month intervals as long as the scheme lasts.

How must they be screened?

A range of six minimum testing methods is available, and these are set out in full at Part 3 below. These are minimum requirements; it will often be in your clients' interests to do more than this.

Who can take samples?

	Veterinary surgeon	Veterinary nurse	Milk recorder	Milk collector	Keeper
Blood	✓				
Ear tissue tag	✓	✓			✓
Individual milk	✓	✓	✓		
Bulk milk	✓	✓	✓	✓	

Who can test samples?

To constitute a mandatory screening test, samples must be tested by a laboratory approved by the Scottish Government. Part 5 at p. 18 gives more details. A list of approved laboratories is available at www.scotland.gov.uk/bvd.

Who determines the herd status?

The laboratory will determine the herd status, based on the results of the samples submitted and other information provided.

Can a herd status be changed?

Yes – a veterinary surgeon can change a herd status for a client from not-negative to negative, subject to certain conditions – see Part 7 at p. 22 for more details.

Non-breeding herds:

For any other type of cattle herd, such as a finishing herd, any calves born are required to be tested for BVD virus within 40 days of birth. This can be by blood or ear tissue tag test.

From December 2012

The Scottish Government will consult the proposals below in the Spring of 2012, to come into force on or after 1 December 2012 depending on the responses received.

1. Persistently Infected cattle

It is highly likely that it will be illegal to knowingly sell or move a PI animal from 1 December 2012, other than directly to slaughter. They may not pass through a market or any other holding. The Scottish Government will be informed by the laboratory each time an animal tests positive for BVD virus, and will know through movement records if a virus positive animal is moved to another holding.

2. Herd status declarations

The Scottish Government will propose that, from 1 December 2012, when cattle are being presented for sale the keeper must declare them to be in one of the following three categories:

Category 1: BVD Certified Negative	<p>Either;</p> <ul style="list-style-type: none"> From an accredited BVD-free herd through a CHeCS cattle health scheme <p>or;</p> <ul style="list-style-type: none"> Individually tested BVD virus-free
Category 2: BVD Screened Negative	From a herd with a 'negative' herd status for BVD through mandatory annual screening
Category 3: BVD Status Unknown	All herds not in either of the categories above (including from not-negative herds)

3. Movement restrictions – likely to be later than Dec 2012

At some point movement restrictions will be required to prevent the transmission of BVD around Scotland. The proposal will be that cattle from not-negative herds will only be allowed to move straight to slaughter, unless the cattle to be moved have individually tested negative for BVD virus. It is possible that this will be phased across Scotland according to the BVDV prevalence in each area, beginning with those with the lowest prevalence.

Biosecurity

From a date not earlier than 1 December 2013, and probably some time after, keepers of herds with a continued BVD problem that they do not adequately address will be required to protect their neighbours' cattle. This could include a requirement to house cattle or to double-fence where there are neighbouring cattle herds.

PART 3

MINIMUM TESTING METHODS

This part of the guidance explains which testing methods may be used to screen for BVD.

Rather than only have one testing method available, such as ear tissue tag testing as has been used in BVD eradication schemes in Switzerland, Germany and Ireland, a range of methods has been developed. This reflects Scotland's relatively low disease prevalence; as most herds in Scotland are free of BVD virus at any one time, it is important to allow such herds to demonstrate that as cost-effectively as possible. It also reflects the diversity of farming practices, from crofting to large commercial breeders.

For those with BVDV infections, the priority is that the testing method should help them move towards identifying and removing PI cattle.

You should work with your clients to ensure the most appropriate testing method is chosen for their circumstances.

The methods for screening herds are based on the Cattle Health Certification Standards (CHeCS) (www.checs.co.uk), though they do not precisely reflect them. This means that those in CHeCS schemes will not need to do anything more than fulfil the requirements of their health scheme.

All herds must be tested using one of the following six methods. The first three methods can be used in both dairy and beef herds.

1. Sampling calves – the check-test (Antibody)

Whenever possible for a check test, use Option (a) below. Options (b) or (c) are only for herds that don't have calves aged 9 to 18 months old to test.

For all three such options shown below (1a, b and c) the calves should ideally not have had any vaccine with a BVD component, and certainly not have had a BVD vaccine within the preceding month. If they have been vaccinated, when submitting the samples please ensure that their vaccination dates and vaccine name are provided to the laboratory. The bloods must be tested for BVD antibody. If all the samples are negative for BVD antibody this will constitute a negative result for that year.

Each separately managed group must be identified and surveyed, otherwise the test may fail to detect infection when it is present – please see Part 4 at p. 16 for more advice. You should speak to your client before cattle are selected for sampling to ensure that all separately managed groups have been identified.

Where there is a very small number of calves in a herd or group, and they all test negative for antibodies, you may wish to consider asking the testing laboratory to test one sample for BVD virus as they may all be PI calves.

(a) 9 to 18 months

Take samples of blood from not less than five calves in the age range 9 to 18 months in each separately managed group. If there are fewer than five calves in a group, then test all calves in the group.

(b) 6-9 months

If any of the calves sampled in a group are aged 6 to 9 months, then take a sample of blood from not less than 10 calves in the age range 6 to 18 months in each separately managed group. If there are fewer than 10 calves in a group, then test all the calves in the group.

(c) Over 18 months and on the holding since birth

If there are no calves in either of the above age categories then, but only then, you can choose to use the following method:

Take a sample of blood from not less than five animals aged over 18 months that have been on the holding since birth in each separately managed group. If there are fewer than five animals in a group, then test all the animals in the group.

2. Test all calves (Antigen)

Individually test all calves born in the herd within the preceding year for BVD virus by blood or tissue sample. Calves can be tested as they are born, or all at once later in the year. Testing at birth has the advantage that PI calves can be identified and removed before the breeding season begins.

If all the calves are negative for BVD virus this will constitute a negative result for the year.

3. Test all animals (Antigen)

Individually test all animals in the herd within the year for BVD virus by blood or tissue sample, regardless of age and including bulls. The youngest age at which calves are old enough to be blood tested will be advised by the testing laboratory; this is usually one month. If all the animals are negative for BVD virus this will constitute a negative result for that year.

This testing method is the most expensive option, but it may suit herds where BVDV infection is suspected or herds where no other method is entirely suitable.

Dairy Testing Methods

The remaining testing methods are for dairy herds only.

4. Single bulk tank milk (BTM) and blood tests (Antibody)

Test a single bulk tank milk (BTM) sample plus individual bloods from any cows that did not contribute to the bulk tank that day, including dry cows and in-calf heifers, for BVDV antibody. If the milk goes into more than one tank a separate sample from each tank should be tested. If all the samples are negative for BVDV antibody this will constitute a negative result for that year.

5. Four quarterly bulk milk tests (Antibody)

A representative milk sample from the bulk tank(s) should be tested for BVDV antibody. Four quarterly BTM tests in one year, each not less than 80 days and not more than 100 days apart, are needed.

Four consecutive negative BTM tests are needed to constitute a negative result for that year. Following one positive result, it may be preferable to discontinue quarterly testing and switch to a more focussed testing method, such as a first lactation milk test (detailed below), or testing calves.

Where BTM is monitored quarterly, and the herd is vaccinated but has no animals that have been infected, the sample may be positive, but at a low level. If this does not change over the course of the year, this will also constitute a negative test.

6. First lactation composite milk test (Antibody)

A composite sample made of milk from each of the cows in the herd in their first lactation can be tested for antibody. This is a useful test in herds where the BTM is positive for antibody.

Testing options summary table:

No.	TESTING OPTION	DAIRY/ BEEF	TEST FOR ANTIBODY/ ANTIGEN
1a	5 animals between 9-18 months per separately managed group	Either	Antibody
1b	10 animals between 6-18 months per separately managed group	Either	Antibody
1c	If neither above are possible – 5 animals 18m+ on holding since birth per separately managed group	Either	Antibody
2	All calves	Either	Antigen
3	All animals in the herd	Either	Antigen
4	Bulk milk plus dry	Dairy	Antibody
5	Quarterly bulk milk	Dairy	Antibody
6	First lactation	Dairy	Antibody

TESTS AVAILABLE

Blood serum or plasma and milk are used to test for antibody to BVDV.

Blood is used to test for virus antigen. Tissue samples collected during ear-tagging can also be used. Milk may be tested for virus but only by the polymerase chain reaction (PCR), a test that is best suited to screening BTM for the presence of a PI. Because high levels of maternally derived anti-BVDV antibody in colostrum can block the detection of BVD virus, blood can only be tested for antigen if the calf is over four weeks old. This restriction does not apply to skin samples collected during ear-tagging which can be tested for antigen from calves of any age.

Tests for BVDV antibody

Antibody detection ELISA

Antibody detection ELISAs are accurate and suited to high-throughput testing. They are available in a variety of formats so that results are given in different ways, which can be confusing. Labs will provide interpretation and explanatory notes specific to the test that has been used. Not all serum/milk samples are clearly negative or positive. Those with readings around the negative/positive cut-off value may be classified as inconclusive. The SG scheme has had to accommodate the inconclusive results and has included them with positive results to classify a group as 'not-negative'. A 'negative' group contains only animals with no anti-BVDV antibody.

Low or inconclusive levels of antibody in one or two animals in a group will require careful interpretation. The herd's vet, after consultation with the laboratory, may be justified in changing the herd's status from 'not-negative' to 'negative'. Assistance with interpretation can be found on the BVD CPD course (www.scotland.gov.uk/bvd). Vets who have successfully completed the CPD course can sanction such changes in a herd's BVD status.

Other tests for BVD antibody

Other tests for BVD antibody (eg serum neutralisation test (SNT)) are available and may be used occasionally to resolve unusual ELISA results.

Tests for BVD virus

Virus antigen detection ELISA

Samples will be reported as negative or positive for the presence of BVD virus. Only rarely will a sample be classed as inconclusive necessitating a retest.

A virus positive animal will usually be PI, but it is recommended that to confirm an animal as PI it should be sampled for a second time after at least three weeks. True PI animals will be virus positive in both tests. Any animal undergoing an acute infection at the first test will be virus negative and antibody positive at the second test.

BVD vaccination will not interfere with any test to detect BVD virus. Any PI animal that has been vaccinated against BVD continues to shed high levels of infectious virus and is unlikely to produce enough antibody in response to vaccination to block the detection of the virus in the blood.

Other BVD virus detection tests

Other tests to detect virus are available. The most sensitive of these is the reverse transcriptase polymerase chain reaction (RT-PCR) which detects virus RNA. The test is used to detect virus in bulk milk from up to 300 cows, pooled blood samples and foetal tissues. There is some indication that pooling blood samples is not advisable in the very young calf and the age of calves less than two months of age should always be provided with the samples. It is advisable to consult with your laboratory on the age threshold for pooling before submitting samples.

WHAT CONSTITUTES A MANAGEMENT GROUP?

The effectiveness of check-testing depends on the correct identification of each separately managed group. A separately managed group consists of those animals that can freely achieve nose-to-nose contact with all others within the group.

The point of testing separately managed groups is to show if there is a PI animal within the herd, and where it is. PI animals spread the virus very efficiently when in close contact with other cattle. Nasal discharges and saliva are the most potent sources of infectious virus so that any husbandry system which permits nose-to-nose contact will hasten the spread of virus from PI cattle to susceptible animals. Intensive housing with trough feeding will ensure rapid spread whereas spread will be slower among cattle at grass.

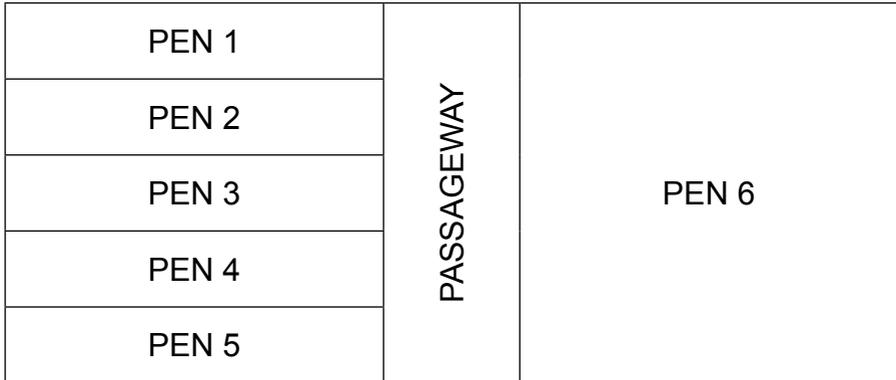
Because of the efficient spread it is not necessary to bleed the whole group. A sample of animals is sufficient providing the following conditions are met:

- All the animals in the group have been together for at least two months.
- They will have had nose-to-nose contact during that period.
- They are in the appropriate age range (see testing options from page 8).

The second point above is important when deciding about housed animals. Animals either side of a central passageway for example are separately managed groups.

It is not always necessary to test every pen in a shed. Consider the layout of a shed shown in the diagram below:

Diagram 1



In the example above, cattle in each pen have nose-to-nose contact with cattle in adjoining pens. This means that a PI animal in any pen is likely to cause transient infection in any directly neighbouring pen. So, provided the groups in the diagram above have been together for more than two months, taking a sample of five calves aged 9 to 18 months from **Pen 2**, **Pen 4** and **Pen 6** will be sufficient. This is because enough calves in Pen 1, Pen 3 and Pen 5 would be infected by a PI calf in a neighbouring pen.

Careful consideration should be given to the degree of separation between groups. For instance, in the example above, if there were walls between the pens, this could prevent sufficient nose-to-nose contact from occurring.

In extensive systems, where cattle are spread over a wide area, consideration should be given to ensuring that the cattle have had sufficient opportunity to spread virus among each group before sampling.

PART 5

SUBMISSION OF SAMPLES

For mandatory annual screening, all samples must be sent to an approved laboratory. A list of approved laboratories is available on the website: www.scotland.gov.uk/bvd.

An appropriate history should be sent on the sample submission form. It is essential to include any BVD vaccination history to allow accurate interpretation of the results.

A common submission form has been created for all the approved laboratories – this is available from the laboratory and on the Scottish Government BVD website, as above.

The laboratory needs to receive the following:

1. The keeper's name and address.
2. The CPH number for the Holding on which the herd is kept.
3. The date samples were taken.
4. Which testing method (see Part 3) was chosen.
5. Whether samples are to be tested for the presence of BVDV or evidence of exposure to BVDV, ie tested for antigen or antibody.
6. The full 12-character official UK ear tag numbers for all the animals from which the samples derive (with the exception of the bulk milk tank tests).
7. The number of breeding females in the herd.
8. The seasons of calving.

HERD STATUS DECLARED – WHAT NEXT?

The laboratory will inform the keeper of the herd status, and you may want to be able to advise your clients of what they should do next. This section gives you some guidance on what should be done whether the status is negative or not-negative.

You should always advise clients to send PI cattle straight to slaughter

Herd which has a negative herd status for BVD

A negative status is something your client should try to protect.

Though a negative herd status is good news for your client, on its own it is not as good a standard as a CHeCS-approved BVD-free status. It is also only a snapshot – risks of disease incursion remain and need to be considered.

You may wish to discuss biosecurity with your client. This is a good time to create or review a biosecurity plan, vaccination programme and a schedule for future surveillance sampling. You could also agree the actions to take should any incident of disease or breeding failure occur that could be attributable to BVD infection.

Herd which has a not-negative herd status

From December 2012 it is likely that there will be consequences to having a not-negative status. There will be a detailed consultation on these in Spring 2012, but at the time of publication these are intended to be:

- A ban on knowingly selling a PI animal.
- A declaration of herd or animal status when selling or moving cattle.
- Subject to consideration of timing, cattle from not-negative herds will only be able to move through a market or to another holding if tested negative for virus beforehand. Otherwise, they can only move direct to slaughter. This may be regionalised and delayed.

Keepers with not-negative herds may seek your advice on how they can become negative. To become negative they will have to take steps to discover if they have any PI cattle and, if so, remove them. To do this they will have to carry out more testing.

There are several different ways to conduct follow-up testing. You may find the following advice helpful in deciding on a follow-up testing strategy.

Conducting Follow-Up Testing

Controlling BVD entails identifying and removing PI cattle and ensuring no more are born on, or brought to, the farm. Any control programme requires considerable thought and a substantial commitment. It should be clearly defined, realistic, constantly reviewed and sustainable. The vet CPD module includes flow diagrams for BVD eradication. Possible control and eradication procedures can be summarised as follows:

Beef Herd

- All bulls and immature cattle, ie in-calf heifers, youngstock and calves (usually older than one month) and any cow that is not the mother of an animal being tested are individually blood tested for BVD virus. Continue blood testing for virus all calves born into the herd for 12 months following the removal of the last PI animal.

- After the calf crop has been screened individually, dams of calves which are not PI do not need to be tested. Ensure breeding females which have not had a calf tested or have given birth to a PI calf are individually tested for BVD virus.
- Again, calves can be tested for BVD virus when they are ear-tagged shortly after birth using tags that collect a tissue sample. This method has the advantage that PI calves can be identified and removed before the start of the breeding season.

Dairy Herd

- The milking herd can be screened for the presence of a PI animal by testing a bulk milk sample from up to 300 cows for BVD virus by RT-PCR. If the herd is too big or if a bulk milk sample tests positive smaller pools and then individual milk or blood samples will have to be tested to identify the virus positive animal(s). Remember that in individual milk sampling, there is always a risk of cross-contamination which should be considered when analysing results.
- All other animals, ie dry cows, bulls, in-calf heifers, youngstock and calves (usually from one month of age) are individually blood tested for BVD virus. Continue blood testing for virus all calves born into the herd for 12 months following the removal of the last PI animal.

Alternatively, calves can be tested for BVD virus when they are ear-tagged shortly after birth using tags that collect a tissue sample. This method has the advantage that PI calves can be identified and removed before spreading infection.

CHANGING A HERD STATUS

Where your client is given a not-negative herd status, you may, subject to certain conditions, be able to change the status to negative.

A veterinary surgeon may only change herd results if they have successfully completed the Scottish Government online training course. This course is available via the Scottish Government website at www.scotland.gov.uk/bvd. It takes around 3 hours to complete, and you will be sent a certificate following completion. The course is free of charge for veterinary practitioners with a client who has a herd subject to mandatory annual screening.

To change a herd status, you must notify the Scottish BVD Database Unit. You may wish to use a form for the purpose which will be available from the website above.

When changing a herd status, you must declare one of the following:

- “I have conducted appropriate follow-up testing and no persistently infected cattle have been identified on the holding.”

Or

- “I have conducted appropriate follow-up testing and identified PI cattle. The keeper has informed me that they have been removed from the herd.” With this type of declaration you must provide the official ear tag identity numbers of any infected animals you have identified.

You do not need to check if PI cattle have been removed – you only need to have been told by the keeper that they have been removed. The Scottish Government will check that they have been removed.

BASIC FACTS ABOUT BVD

This section contains veterinary information on BVD. This has been produced by SAC, and is included in the online CPD required for vets wishing to change a herd status (CPD.URL). There is also great deal of useful information including videos, presentations and podcasts on BVD on the Royal Veterinary College's website at: www.rvc.ac.uk/bvd.

BVDV is closely related to border disease virus (BDV) of sheep and to classical swine fever virus (CSFV). The three viruses are grouped together as pestiviruses. Pestiviruses do not infect humans.

BVDV can infect goats, sheep, South American camelids and pigs. There is serological evidence of infection in wild ruminants in Scotland and beyond. Furthermore, the pestivirus of sheep, BDV, can infect cattle and result in the generation of persistently infected cattle. In Scotland the close contact between sheep and cattle that occurs on many farms creates the opportunity for BVDV to infect sheep and BDV to infect cattle and while the frequency with which this occurs is unknown, it has been considered unlikely to be of significance in relation to national control. To mitigate this potential risk breeding cattle should not graze in the same field as sheep except in the extensive hill situation.

Persistent infection (PI) with BVDV is the mechanism that allows this virus to spread and persist within a population of cattle. The PI animal is a potent source of infection releasing the virus in secretions from the respiratory, digestive and reproductive tracts. The generation of PI animals can only occur where infection of the dam occurred some time during the first trimester, crossed the placenta and infected the conceptus prior to the onset of the development of its immune system.

Transient infection can have a significant negative impact on the fertility of naïve cattle, but transiently infected animals are much less infectious to others than are PI cattle. In bulls infected transiently the virus can be released in the semen for a limited time. In all but a few exceptional cases this is only for a short period of time, but the semen of some bulls remains infectious while the bull itself is no longer infected.

Transient infection also has a prolonged impact on an animal's ability to resist the normal diseases of calthood and it is this immunosuppressive effect that is considered to be of greatest financial significance to the cattle industry.

Vaccination

Vaccination on its own will not eradicate BVD from a herd or from the country. However, vaccination is and will continue to be an important tool in disease control for many, if not most, herds.

BVDV vaccination is designed to protect dams in early pregnancy to avoid the production of PI cattle. Vaccination is also useful to protect susceptible cattle before they go through a mart.

A decision on whether, what and when to vaccinate is one to be taken by the vet and keeper together. In considering whether to vaccinate you should consider the BVD infection risk factors for the herd involved, such as:

- Are there neighbouring holdings with cattle?
- Is there nose-to-nose contact with neighbouring cattle?
- Does the keeper buy-in cattle or is it a closed herd?
- Are bought-in cattle of known BVD status?
- Are cattle sent to shows?
- Are bulls brought in for breeding, and is their BVD status known?

The vaccines available are very effective, but care must be taken to ensure that the datasheet is followed precisely. This means storing the vaccine correctly and using the right doses, at the right time for that vaccine, including boosters.

PI animals shed huge amounts of virus and present a significant challenge even to vaccinated animals. Inadequately vaccinated animals in contact with PI cattle are at significant risk.

Biosecurity

Farmers can reduce the risk of buying-in cattle infected with BVD if they recognise the BVD status of cattle being offered for sale. They need to know the BVD status of the seller's herd plus any tests done on the animal being sold. Buying pregnant cattle is always risky since the BVD status of the calf is unknown and can only be tested when it is born.

Summary of Key Points

- PI calves are the most significant source of infection
- Transiently infected animals are much less infectious
- Most PI animals die before two years old, but some live much longer
- Biosecurity for added animals and at farm boundaries must be in the herd health plan
- Biosecurity should encompass personnel and equipment

BVD MYTH BUSTER

1. Got BVD? Don't worry, you can just vaccinate.

FALSE – vaccination does not deal with PI animals. They continue to spread infection potentially creating yet more PIs in spite of herd vaccination.

2. You should keep a PI animal on the farm so that your animals are not naive, ie the idea of PI parties.

FALSE – PI animals are highly infectious and should be culled as soon as they are identified. They will cause huge problems on your farm. Vaccination is the only effective way of protecting naive animals that may come into contact with BVD.

3. The government is making vaccination compulsory/the government is banning vaccination.

FALSE – Vaccination will continue to be an important part of controlling BVD for many herds, but it is a decision to be taken between keepers and vets.

4. You can't get rid of BVD, because of transient infection.

FALSE – The evidence is overwhelming that removing the PI animals will stop the disease from circulating. Transiently infected animals are much less infectious than PIs, and only for a short period of time, if they are infectious at all.

5. There's no point in getting rid of BVD, because my herd will be re-infected by sheep/deer.

Sheep can carry BVD and can re-infect your herd, but only if they have been in contact with cattle with BVD in the first place. Removing the source of infection – the PI cattle – will reduce BVD among sheep. Also, transmission from sheep to cattle is very weak, so only a small number will be unlucky enough to get re-infected this way. To be sure though, you should keep breeding cattle away from sheep.

Deer can carry BVD, but we've no evidence to think this is a significant problem, and again, removing PIs will remove a major source of infection for deer.

6. It's impossible to eradicate BVD from my herd – I've been trying for years.

FALSE – The vast majority who have followed a CHeCS scheme have got rid of BVD in under two years. If you test to find your PIs, slaughter them, buy in only BVD-free cattle or isolate and test them, test your calves for two years, and exercise good biosecurity, you should get rid of a BVD infection in around two years. All the studies show that the benefit to your profits will far outweigh the cost of getting rid of BVD.

7. I've got a PI animal, but it looks alright so I don't need to slaughter it, I'll just finish it.

This is a lottery. In some cases a good animal can be finished, but many will die before slaughter age, incurring veterinary costs and spreading virus. While it's on your farm it is a significant disease risk to the rest of your herd. It may well be a hard decision to take, but it's always better to send it for slaughter immediately.



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