



BVD - The Disease

Q. What is BVD?

BVD is one of the biggest disease issues facing the UK cattle industry. Bovine viral diarrhoea (BVD) is a widespread disease of cattle causing various symptoms including infertility, abortion, stillbirths, diarrhoea, pneumonia, poor condition and a lowering of resistance against other infections. It is a serious infectious disease of cattle and can be fatal.

Q. How common is BVD?

In 1998 VLA tested bulk milk samples from 1070 unvaccinated dairy herds with more than 40 cows in England and Wales. Of the samples tested 95% were positive for BVD antibodies and there was evidence of recent infection in 65% of herds. In 2006 Richard Booth and Joe Brownlie found BVD infection on 20 (59%) of 34 farms in the south of England (mainly in Somerset). Over the course of the following three years, 61 Persistently Infected cattle were identified on 16 of the 20 infected farms. BVDFree will provide the first real opportunity to get good regular up-to-date information on how widespread BVD is in England.

Q. Why eradicate BVD?

BVD has been estimated to cost between £13 and £31 per affected cow. The national cost could be around £39.1 million per year¹.

According to analysis by economists in Scotland, an average dairy herd would be about almost £16,000 better off every year, and an average beef unit around £2,000 better off each year after eliminating BVD.

A review of BVD control in Europe in Animal Health Research Reviews (2005) shows that losses due to so-called classical outbreaks, where most infections go unnoticed, and where most losses are associated with reproductive disorders and PI animals only, are between €16 and €106 per cow. In contrast, losses from outbreaks due to BVD occurring at the same time as other infections, or by highly virulent strains causing severe disease and death have been estimated to exceed €265 per cow in the herd. However the average loss over several years in beef herds has been estimated to be €47 per cow per year.

1. Bennett, R. and Ijpelaar, J. (2005) Updated estimates of the costs associated with thirty four endemic livestock diseases in Great Britain: A note. Journal of Agricultural Economics, 56 (1). pp. 135-144

Q. When is BVD most likely to infect my herd?

The majority of infections with BVD virus occur after birth. In this case animals become acutely or transiently infected before recovering and becoming virus-negative, typically within 3 weeks or less. Transient infections may occur without obvious clinical signs but depending on age, sex and immunity they can lead to a range of reproductive problems, including abortion and poor calf health with scours and pneumonias that respond poorly to treatment.

Infection of the unborn calf between approximately 30 and 120 days of pregnancy will result in it becoming persistently infected (PI) for the rest of its life with BVD virus if the calf is not aborted. If a calf is not PI at birth it will never be PI.

Q. Where can I get more information about BVD?

The best source of advice and information is usually your vet. If you are in a health scheme you will be able to access specialist advice through your scheme. For more information on the BVDFree scheme, screening requirements and information about the database please go to www.bvdfree.org.uk, email help@bvdfree.org.uk or call the BVDFree helpline on [0333 241 3113](tel:03332413113).

Q. What are the signs of an active herd infection?

Symptoms can include low birth weight calves, poor fertility, early embryonic death, calf death, respiratory disease, poor conception rates and thus high numbers of return to service. However, poor health in calves or poor fertility in adults is often a sign that BVD is underlying the problem; getting rid of BVD from a herd always improves health and productivity.

Q. What should I do if I think my herd might be infected?

If you are concerned that your farm may be infected with BVD, please contact your veterinary practice and they will advise you what course of action should be taken. If you have not already registered for the BVDFree scheme, mention to your veterinary practice that you are intending to do so. If your veterinary practice is not yet participating in the scheme, they can go to www.bvdfree.org.uk email help@bvdfree.org.uk or call the BVDFree helpline on [0333 241 3113](tel:03332413113) for more information.



Q. What is a persistently infected animal?

A Persistently Infected or PI calf remains infected with BVD throughout its entire life. The persistent infection comes about as a result of infection of the calf in the womb during the first 120 days of pregnancy. This occurs if the cow herself is PI, or if a cow becomes infected with the BVD virus in early pregnancy. PI calves cannot produce an immune response to combat the virus. Consequently, they shed virus for their entire life.

Q. I am already vaccinating for BVD - does that mean that my herd is disease free / I should take no further action?

Vaccination is rarely 100% protective. Vaccination does not deal with PI animals. They are too highly infectious and will still be able to spread infection potentially creating yet more PI animals. If you vaccinate a PI calf, it will have no effect on the amount of virus that is shed by that calf resulting in a constant viral challenge on the farm. In some cases and for various reasons some animals do not respond to the vaccine effectively - if this does occur then the cow or heifer may be at risk of producing a PI calf in subsequent gestations.

Vaccination plays an important role in eliminating BVD from the farm but should be carried out in conjunction with appropriate on-farm surveillance and, when they are present, identification and removal of PI animals.

Q. What is the role of vaccination in the BVD eradication programme?

Decisions on the use of BVD vaccine, including when to stop a vaccination programme, are herd-specific and should be taken following discussion and advice from your own veterinary practice. In making a decision consider biosecurity and the likelihood of introduction of infection through animals brought on to the farm or direct contact (e.g. at boundaries, shows and sales) and indirect contact (e.g. contaminated environments, equipment, clothing or visitors).

Q. If an animal tested negative for BVD virus and was sold, can that animal pick up virus during trade?

A negative BVD antigen test means it is very unlikely that individual is a Persistently Infected (PI) animal. It could still pick up BVD virus and become transiently infected with BVD virus at any point during its life including at markets and at livestock shows. If it is pregnant at the time of infection this can lead to a 'Trojan PI' - that is the calf from a purchased animal may be a PI when it is born and spread the virus to other cattle on your farm. The best advice is to isolate any cattle moving on to your farm for 3-4 weeks. Test any calves born to cows moved on to your farm is promptly at birth eg tag and test.

BVDFree England - About the scheme

Q. What is BVDFree England?

BVDFree England is a voluntary industry-led scheme. By taking a coordinated approach across the cattle industry, this scheme will drive the elimination of BVD. The elimination of BVD is based on helping farmers to identify if their herd may be infected with BVD. Farms can eliminate BVD virus infection by identifying and removing animals persistently infected (PIs) with BVD virus. Working with BVDFree England can make a real contribution to making cattle production more efficient and sustainable.

The BVDFree England national database is a searchable database which will hold details of the BVD status of individual animals and herds signed up to BVDFree England.

Q. Who is involved in the BVDFree England scheme?

BVDFree England has been developed through an industry partnership, with over 90 organisations pledging their support. A full and up-to-date list of organisations who are supporting the scheme can be found online at www.bvdfree.org.uk on the home page under 'Statement of Intent' at the bottom of the page.

Q. What is AHDB's involvement in the scheme?

AHDB has provided the resource to coordinate the development of the scheme through to launch and is supporting delivery by working alongside industry partners.



Q. How is the scheme being funded?

AHDB has provided the resource to develop BVDFree England through to launch with industry support. The intention is that the scheme will eventually become self-funding, therefore there will be a small charge to cover the uploading of test results.

Q. What will happen from 1 July?

Following the official launch on 1 July, the BVDFree project team will continue to work closely with all the links in the chain required to make the scheme a success. Specifically, the team will continue liaising with laboratories and tag manufacturers in order to secure their support and broaden the reach of the scheme.

The supporter organisations will be encouraged to take ownership of BVDFree and play their part in helping generate the momentum to engage farmers.

BVDFree England - Registering

How do I register for BVD Free England?

Farmers with cattle holdings in England can register straight away by signing up to the BVDFree Charter online at www.bvdfree.org.uk. There is a national BVD eradication schemes for farmers in Scotland - for more information go to www.gov.scot/bvd. The database for the BVD Scheme in Scotland can be accessed through www.scoteid.com

How much does it cost to register?

Registration is free. However, there is a small charge to cover the uploading of test results (50p for blood antibody tests and 25p for tissue and blood virus antigen tests) which will be added to the cost of your laboratory tests for BVD. As a voluntary farmer-led programme BVDFree only has access to very limited funding. This small charge helps to cover the cost of building and running the database and the helpdesk. The intention is that, as an introductory offer, there will be no charge for the upload of test results from samples tested between July 1, 2016 and October 31, 2016.

Why does my vet need to know I have signed up for BVDFree?

It is important that your veterinary practice is informed when you sign up to BVDFree to ensure that you get the best possible advice and assistance for your herd. Your veterinary practice will want to ensure that you have considered the biosecurity risks associated with BVD as well as advising you on the best route to achieving and/or maintaining BVDFree status for your herd.

I already belong to a herd health scheme - why should I register for BVDFree?

Most herds fully participating in the CHeCS BVD programmes meet the testing requirements and so if you are testing for BVD as part of your health scheme membership you should not need to do anything extra, other than uploading test results, but check with your vet. BVDFree will recognize and show your CHeCS accredited BVD status. BVDFree aims to build on the core of herds which are part of a health scheme and have a CHeCS BVD accredited status and help to reduce the risk of breakdown in those herds by reducing the BVD infection pressure in England. By joining BVDFree you will show you have played your part in helping to make the cattle herd in England free of BVD virus.

When will I be assigned my BVDFree herd status?

BVDFree will recognize the CHeCS accredited BVD herd status from the time of launch on July 1, 2016. BVDFree will not assign herd status directly to herds until they have completed their year 2 of testing to show BVD virus is not circulating in the herd. The earliest date at which BVDFree would assign a herd status therefore is July 1, 2017.

BVDFree England - Testing for BVD under the scheme



Q. How do I test for BVD under the scheme?

To be assigned a herd status herds must test every year using one of the approved testing methods. If you have a breeding herd:

- Screen your herd for BVD using one or more of the acceptable testing methods listed by BVD Free - see www.bvdfree.org.uk for details.
- Arrange with your vet for samples to be sent to a BVDFree designated laboratory.
- If your herd result expires or if you have failed to test, your herd status will be changed to 'not negative'.

If you have any other type of herd:

- You must test any calves that are born within 40 days of birth or prior to moving them (if they are moved before 40 days of age) by submitting sample(s) to a BVDFree designated laboratory (listed by BVDFree).

For more information go to (www.bvdfree.org.uk).

Q. How do I know whether my lab is a designated laboratory?

A list of BVDFree designated laboratories is available at www.bvdfree.org.uk.

Q. Which animals need to be tested?

Dairy (you can download a flow chart with details from the web page 'The Disease')

- Youngstock - either tag and test all calves at birth for BVD virus or test blood samples from 5 - 10 calves aged 9 - 18 months for BVD antibody (minimum 5 per separately managed group)
- Milking herd - bulk milk BVD antibody and/or first lactation pooled milk BVD antibody and/or bulk milk BVD antigen test for virus

Beef (you can download a flow chart with details from the web page 'The Disease')

- Youngstock - either tag and test all calves at birth for BVD virus or test blood samples from 5 - 10 cattle aged 9 - 18 months for BVD antibody (minimum 5 per separately managed group)
- As calves are closely mixed with their dams it is not essential to test breeding cows in beef suckler herds so testing breeding cows is optional. Testing breeding bulls before mixing with the herd is recommended

All calves born in other types of herd must be tested shortly after birth (eg finishing units)

Q. Which animals can I tag and test?

You can tag and test an animal of any age, even a stillbirth or an aborted foetus. It is recommended to test stillbirths and aborted foetuses as a check on whether BVD virus is circulating in the herd. There are more cost effective ways to find PI animals in a breeding herd than to tag and test every animal in the herd - speak to your veterinary practice for advice.

Q. If I am notified that the tissue sample tag is empty - what should I do?

The animal needs to be re-sampled using either a blood sample collected by a vet or using a supplementary (button) tag bearing the matching ID number.

Q. If I want to re-test an animal positive for BVD virus, how long should be left between the two tests?

It is recommended that 21 days are left between first sample collection and second (blood) sampling. An interval of at least three weeks will allow time for virus to be cleared from an acutely (transiently) infected animal.

Q. How stable are tag samples after collection?

It is recommended that samples are sent to the laboratory as soon as possible after collection but in any event within seven days. In the interim, it is recommended that samples are stored in a cool, dark place and ideally in a non-domestic fridge.



Q. Can the tag tissue sample be used to identify other diseases?

These samples are not suitable for testing for other diseases.

Q. What happens if I have a PI - does this mean I cannot trade?

PI animals are highly infectious and should be culled as soon as they are identified. PI animals should not be traded. Members of BVDFree agree not to move Persistently Infected (PI) animals other than directly to slaughter (or through a dedicated red slaughter market). Other cattle in your herd may be transiently infected, although can be traded if not identified as a PI.

Spreading the BVD virus through movement of the animal puts other herds at risk and undermines the national effort to eliminate BVD virus from England.

Knowingly selling an infected animal may also be in breach of the Sale of Goods Act.

Q. Is it OK to keep PI animals in the herd?

PI animals are highly infectious and should be culled as soon as they are identified. BVD causes significant losses in herds that have it, through acute (transient) as well as persistent infection. An animal that is transiently infected will suffer lower immunity and increased susceptibility to other diseases as a result. The daily additional hidden costs of keeping a PI in the herd far outweigh any value of keeping the animal. PIs should be isolated from the rest of the herd as soon as they are identified.

BVDFree England - Interpreting test results

Q. How does vaccination affect test results?

Vaccination does not affect tag and test results. Vaccination has no effect on the presence of virus in PI animals and thus they will still test positive after vaccination. Vaccinated animals produce antibodies to BVD virus that are the same as antibodies produced in response to natural infection. It is then not possible to tell if antibodies detected in blood tests are the result of vaccination or infection with BVD virus.

Q. How soon can you sell a calf as having a negative result after you tissue tag the calf?

A calf may be sold as negative as soon as a result is received. Laboratories designated to provide this testing have undertaken to report 95% of results within 7 working days and 99% within 10 working days, average turnaround of 5 days or less. In practice, many of these are available within 2-3 days.

Q. If a calf is positive for BVD virus is the dam also a PI?

If the calf is positive on test for BVD virus it is strongly recommended to test the dam as she may also be a PI. If a cow is PI then all of its offspring will also be born persistently infected with BVD virus. If testing shows the dam to be PI then all offspring and descendants of that animal are considered to be PI and may not be sold (except directly to slaughter or through a slaughter-only market) without a negative test result.

Q. If a dam has previously had a negative calf and then has a positive calf does she need to be tested?

Yes, unless and until the dam is directly tested (or her positive calf is retested as negative) there will be a suspect status assigned to her (DAMPI or dam persistently infected).

Q. If a dairy cow is a PI what do I do with her milk?

There is no known human health risk from BVD so milk from a PI cow may enter the bulk tank as normal. Feeding milk from a PI cow directly to calves will pass virus to them. PI animals should be culled as soon as possible after they are identified.

BVDFree England - Accessing test results



Q. How do I access my test results?

Your laboratory will send you a copy of all your test results. If you have joined BVDFree you will have agreed to report all BVD testing results from your herd to the national database. Your laboratory will upload your results to the BVDFree database.

The test results and the herd status and individual animal statuses are openly accessible through the BVDFree database www.bvdfree.org.uk (without any specific details of farm name or keeper shown). All farmers can check if their results are on the database by searching by ear tag number or CPH number.

Q. Can my veterinary practice have access to my results as well?

It is important that your veterinary practice has access to your test results to ensure that you get the best possible advice and assistance for your herd. As well as alerting your veterinary practice when you first join the scheme, your veterinary practice can check if their results are on the database by searching by ear tag number or CPH number.

Q. What should I do if I have problems accessing the database / cannot find my results?

If you have any problems accessing the database or finding your herd or individual animal results you should contact the dedicated BVDFree England helpdesk on 0333 241 3113. The helpdesk is manned from 9.00am until 5.00pm, Monday to Friday. Alternatively you can send your questions by email to help@bvdfree.org.uk.

Q. Can I find out if my neighbouring herds have tested positive or negative for BVD?

If your neighbours have signed up to BVDFree then they have agreed for their test results to be published on the BVD national database. You will be able to search the results for other herds in the scheme as long as you know the unique CPH number.

Q. What is the difference between herd and individual animal status?

A herd status will not be assigned under the scheme until the second year of testing (i.e. 2017). However, individual animals within a herd will be assigned a status once they have been tested.

Q. My herd has been assigned 'non-negative' status?

A herd status will not be assigned under the scheme until the second year of testing (i.e. 2017). If your herd has been given a result of 'not negative', this means that it has shown signs of exposure to the virus or has not completed sufficient testing to demonstrate that it is free of BVD virus. You should work with your vet to identify and remove any PI animals that may be present within your herd.

Q. My herd has been assigned 'negative' status?

A herd status will not be assigned under the scheme until the second year of testing (i.e. 2017). If your herd has been given a result of 'negative', it's important to protect your 'negative' status by only bringing in cattle free of BVD virus and maintaining good biosecurity.

Q. Are wildlife affected by BVD?

Wild deer goats and sheep can be infected with BVD virus. Wildlife are considered to represent a low risk of infection to cattle based on the experience of eradication programmes in other countries.