Information on the voluntary phase of the Northern Ireland BVD virus eradication programme in 2013
Background

Animal Health and Welfare NI (AHWNI) is a new initiative by farmers’ organisations and the wider cattle industry to promote improved cattle health and welfare within Northern Ireland (NI). Bovine viral diarrhoea (BVD) is the first disease to be addressed. Eradication programmes for this disease are already underway in the Republic of Ireland and Scotland. A cross-industry BVD Implementation Group (BVDIG) has been created to develop a Northern Ireland eradication programme which will begin with a voluntary period in 2013 with the proposal to move to a compulsory phase in 2014.

It is based on testing ear punch samples collected using tissue sample-enabled official identity tags for BVD virus and is designed to identify calves persistently infected (PI) with BVD virus as soon as possible after birth to enable their rapid culling. Where PI calves are detected in a herd, further testing is required to identify any other PI cattle that may be present and to prevent spread through trade. It is envisaged that each herd will complete three years of tissue tag testing of calves followed by a further three years of lower intensity surveillance. This leaflet gives you further information on the disease, on how the programme will work and what you need to do now.

How do I join the programme?

For the voluntary phase of the programme you simply join by ordering tissue sample tags from a supplier who has been designated by the BVDIG for this purpose. Details of designated suppliers are available from AHWNI (www.bvdni.com) or 028 8778 9126. As part of the tag order process (see below) you will be required to grant a number of permissions in relation to your herd data and results and undertake to comply with the programme guidelines.
BVD: The Facts

- Bovine viral diarrhoea (BVD) is a highly contagious viral disease of cattle that can be transmitted as easily as the common cold. It can be spread directly by infected animals, or indirectly, for example by contaminated visitors or equipment.

- The majority of infections with BVD virus occur after birth. In this case animals become transiently infected (TI) 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) with BVD virus if the calf is not aborted. If a calf is not PI at birth it will never be PI.

- These PI animals will shed BVD virus at high levels for life and PI animals are therefore the most significant source of infection. TI animals shed virus at much lower levels and only for a few days.

- TI calves may also test positive for BVD virus. However, due to the immune response in TI calves a repeat test 3-4 weeks later should be negative, whereas a PI should always give a positive result. It is expected that around 0.6-0.7% (6-7 calves per 1,000) will test positive for BVD virus.

- PI animals can look entirely normal, particularly at birth, but may become stunted and ill-thriven. PI animals often develop a severe and always fatal wasting condition with diarrhoea and ulceration of the gut and feet, called mucosal disease (MD). This typically occurs between 6 and 18 months of age. The majority of PI animals are dead before reaching breeding age or slaughter weight, either from MD or other infections (particularly scour and pneumonia).

- BVD virus persists in herds by creating further PI calves. Therefore identification and removal of PI cattle is the key to control. Vaccination to maintain immunity in breeding stock can offer further protection where susceptible pregnant cattle are exposed to BVD virus.

- BVD eradication makes financial sense. A recent study estimated that the programme in the Republic of Ireland would give a cost benefit of 10:1 over the six years of the programme i.e. a return of ten euro for each one spent.

The effects of BVDV infection on reproduction

- Insemination
- Calving
- Month 1
- Month 1-4
- Month 5-9
- Embryonic Death
- Persistent Infection
- Abortion
- Deformities
- Apparently Normal
Signs that BVD virus may be present in a herd

- Animals thriving poorly for no apparent reason
- More unexplained abortions than normal
- More calf scouring and pneumonias than normal
- Sick calves respond poorly to treatment
- More ‘empty’ cows than expected
- Birth defects in calves
- Mucosal disease diagnosed

Programme Guidelines

1. Tag all calves at the earliest opportunity but not later than 7 days after birth. Note that calves should be dry before tagging.

   **Comment:** Early testing of calves reduces the risk of their becoming transiently infected (TI) and giving a positive virus result, even though they are not persistently infected. Avoiding TI animals will reduce the need for confirmatory re-testing. It also allows for key on farm management decisions to be made at the earliest opportunity. It will also help ensure that each calf is correctly matched to its dam. This is vitally important to the success of the programme, because if the calf is not PI, the dam cannot be PI either. In this way, the programme provides a two-for-one test. If the calf is PI the dam may also be PI, and needs to be tested (see 4 below).

2. Test all calves born into the herd, including stillbirths, using a tissue sample-enabled tag purchased from a designated tag supplier (see below for details).

   **Comment:** This is necessary to ensure that virus-positive calves are not missed and that infection, if present, is identified and dealt with as quickly as possible.

3. Samples should be returned to the designated laboratory of choice at the earliest opportunity but not later than 7 days after sampling (see below for further details).

   **Comment:** This ensures that the samples submitted are suitable for testing when received in the laboratory and that the information necessary to make key management decisions on the farm is available at the earliest opportunity.

4. Carry out all necessary follow up testing following the discovery of a PI animal, which at minimum includes the testing of the dam of the positive calf, and if found positive the other offspring of the dam (see below for details).

   **Comment:** This is necessary in order to identify and remove all PI animals from your herd as quickly as possible.

5. A PI animal must not be moved off farm (sold) and should be isolated from other cattle until it is culled or slaughtered. This also applies to animals requiring follow up testing (see 4 above).

   **Comment:** PI animals are the main source of infection for cattle in their own and neighbouring herds.

**NOTE:** Results from herds that comply with these guidelines in the voluntary year of the programme will count as one of the three years of tag testing anticipated in the Northern Ireland programme.

Ordering tissue sample tags

The BVDIG has put in place a process to allow tag suppliers to be designated to provide tissue sample-enabled official tags for use in the programme. Management tags (bearing the animal’s tag number) will also be available to be used alongside any official tags still in your possession. Details of currently designated tag suppliers are available from AHWNI (www.bvdni.com) or 028 8778 9126. Note that tags will be supplied on a tag and test basis i.e. the price of tags will include the cost of testing. You will receive pre-addressed packaging for submitting samples to the testing laboratory with your tag delivery.

When you order your tags you will be required to give an undertaking to comply with the programme guidelines and to give permission to allow: details of your tag order to be transmitted to the AHWNI database that will manage the programme; the database to access your herd details on APHIS; the testing laboratory to transfer the results to the database and the results to be used and shared by the programme. As part of the tag order process you will also be able to provide your mobile telephone number (for reporting results by text message) and to nominate a veterinary practice to access your results on the database.

Storage and submission of samples

If not being sent immediately, store samples in a cool dark place (ideally in a non-domestic fridge). Samples should be submitted within 7 days of collection. Appropriately labelled packaging for submission of samples will be provided with the tags by the supplier.
Notification of results

Laboratories will report results electronically to the AHWNI database (95% within seven working days, average 5 days or less) which will in turn notify you within 24 hours each time new results are received.

Notification will be by SMS (text message) where a mobile number is available. If you have not provided a number, a letter will be issued. To provide a mobile number for reporting results, or to ensure that the number recorded is current, please contact AHWNI on 028 8778 9126. You can also update this directly on the database. Note that calves must be registered before a result will be issued.

The great majority of tests will be negative for BVD virus. The remainder may be POSITIVE, INCONCLUSIVE or EMPTY (no tissue present in the punch submitted). In each of these three cases AHWNI will issue a letter confirming the result and advising you of the next steps to take, including advice on re-sampling of these and other animals in the herd. These letters will also contain a submission form for any re-tests or additional testing that is required as a result of the reported results (see below). You must give this form to your veterinary practitioner when these samples are collected.

All designated laboratories are independently accredited for BVD testing of tissue samples. The test methods used (ELISA or RT-PCR) will accurately detect the majority of PI calves when samples are submitted correctly. Should a false negative result be suspected, the animal should be isolated and re-tested.

Can I re-test an animal with a positive or inconclusive result?

Yes; this must be done using a blood sample collected by your vet. Re-tests should be carried out 3-4 weeks after the initial test was performed to allow time for transiently infected animals to become virus-negative.

Should other animals be tested following an initial positive or inconclusive result?

The mothers of positive or inconclusive calves are also under suspicion of being PI and again should be tested using a blood sample collected by your vet. While you may choose to wait until a re-test of the calf confirms it to be PI before sampling the dam, it is quicker and more cost effective to sample both calf and mother at the same time. If the mother tests positive, all of her descendants are likely to be PI, and these offspring should be treated as PI until tested with negative results. Details of the animals involved will be included in the letters issued by the database.

What should I do with a persistently infected animal (PI)?

An animal is considered to be PI if a retest following a positive or inconclusive result is again positive or inconclusive (or if you decide not to re-test it). It is recommended that PI animals are culled or slaughtered immediately. They pose an ongoing risk of infection to other animals and young stock are unlikely to survive to reach slaughter weight.

Although no specific prohibition on the sale of PI animals currently exists under The Diseases of Animals (Northern Ireland) Order 1981 No. 1115 (N.I.22) (as amended), a number of existing legislative provisions may apply where a vendor knowingly sells a PI animal without making the purchaser aware of that fact. In such cases, the vendor may be liable for breach of contract and negligence under The Sale of Goods Act 1979 (as amended) and The Sale of Goods Act 1893.

Criminal liability for damage or deception following the sale of a PI animal may arise under Article 3 of the Criminal Damage (Northern Ireland) Order 1977. In addition, the prior test history of animals participating in the programme, held on the AHWNI database transfers to the purchaser upon completion of the sale, potentially allowing them to access dates and results of previous tests.
Can I see my herd’s results on the AHWNI database?

Yes, herd owners can access results for their own herd via the AHWNI website (www.bvdni.com) using their Government Gateway username and password. This allows access to all test results and details held for your herd. All letters and reports issued for your herd will also be stored here. You can also use the database to provide or update your mobile phone number or to grant your veterinary practitioner access to your results.

How can I demonstrate the BVD-free status of tested animals for sale?

You may generate a declaration of negative results for animals in your herd from the AHWNI database.

Biosecurity: What steps can I take to prevent accidental introduction of infection to my herd?

The single biggest risk is through purchased animals, which should ideally be tested negative for BVD virus beforehand. Note that even non-PI cattle may be transiently infected if recently exposed to BVD virus (and therefore still pose a risk for a short period of time). Where the possibility exists that bought cattle may have been recently exposed to BVD virus, it is advised that they are isolated from other (especially pregnant) stock for at least 4 weeks after purchase.

Where pre-purchase testing is not possible, cattle should be isolated post-purchase until tested negative. Note that pregnant non-PI cattle may carry a PI calf if they were exposed to BVD virus during early pregnancy. It is best practice to isolate any purchased in-calf heifers or cows until they have calved and the calf has tested negative for BVD virus.

Direct contact with cattle from other herds should also be prevented. Examples of where this may occur include at farm boundaries, when cattle break in or out, at shows and sales and through sharing of grazing or housing. Infection can also be transmitted indirectly, for example through movement between farms of contaminated items of equipment and clothing and on hands.

While aimed at BVD virus, having adequate biosecurity in place to address these risks will help control many other infectious diseases as well. For more detailed guidance on biosecurity see http://www.dardni.gov.uk/biosecurity_code_booklet_for_northern_ireland_farms.pdf.

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Where can I find further information?

Further details of the programme are available from www.bvdni.com

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