

The Northern Ireland BVD Eradication Programme

The results of the Agrisearch/DARD study have been used in the design of the NI BVD eradication programme. To facilitate the running of this programme, a BVD implementation group has been established, comprising representatives from; AFBI, Agrisearch, Animal Health and Welfare NI, Association of Veterinary Surgeons Practicing in Northern Ireland, CAFRE, DARD, Dairy Breed Societies, National Beef Association, NI Agricultural Producers' Association, NI Livestock Auctioneers Association, North of Ireland Veterinary Association, Livestock and Meat Commission and the Ulster Farmers' Union.

The NI eradication programme has begun with a voluntary period in 2013, with a compulsory phase proposed to start in 2014.

What does the programme involve?

The programme is based on testing ear punch samples collected using tissue sample-enabled official identity or management tags for BVD virus. Unlike the blood sample test discussed above, the tissue sample test is designed to identify calves persistently infected (PI) with BVD virus as soon as possible after birth to enable their rapid culling. Remember it is the PI calves which are central to the cycle of BVD infection! 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 planned that each herd will complete three years of tissue tag testing of calves followed by a further three years of lower intensity surveillance.

Why should I participate in the voluntary phase of the programme?

If BVD virus is in your herd then taking part in the programme in 2013 will help address the problem and stop associated losses as soon as possible. In other herds, testing will provide initial evidence of freedom from infection. In addition, results from all herds that comply with the programme guidelines (full details at www.animalhealthni.com) in the voluntary year of the programme will count as one of the planned three years of tag testing that each herd will have to do.

How do I join the programme?

You join simply by ordering tissue sample tags from a designated tag supplier (details at www.animalhealthni.com) who has been designated by the BVD implementation group for this purpose.

Is eradication actually achievable?

Yes! Several Scandinavian countries and Austria have successfully eradicated BVD, and eradication is well advanced in Switzerland, while nation eradication programmes began in Scotland in 2010 and in Germany in 2011. An initial voluntary eradication scheme began in the Republic of Ireland in January 2012, and has been followed by a compulsory phase in January 2013. The situation is developing rapidly and failure to act risks NI producers being left behind those countries which have embraced eradication schemes. With industry support, eradication is readily achievable, with considerable production benefits to be gained.

Further Information

Please talk to staff on the Animal Health and Welfare NI (AHWNI) stand.

Visit the AHWNI website: www.animalhealthni.com



Bovine Viral Diarrhoea: A problem for Northern Ireland dairy and suckler herds.

Bovine Viral Diarrhoea (BVD) is one of the most important diseases of cattle, both globally and within Northern Ireland. It has a huge negative economic impact. For example, losses from BVD in the Republic of Ireland were previously estimated at £63.3 million/year for dairy herds and £25.7 million/year for beef suckler herds (using 2009 data). To appreciate the importance of BVD it is necessary to understand how it impacts on herd performance.



97 Moy Road
Dungannon
Co. Tyrone
BT71 7DX

T: 028 8778 9770
F: 028 8778 8200
E: info@agrisearch.org
W: www.agrisearch.org

Understanding BVD

What is BVD? Viral disease caused by a pestivirus.

What does it do? Despite the name, there are a range of possible outcomes of infection depending on when cattle are exposed. It is useful to consider four areas:

1. Effects when BVD first encountered as a calf or adult:

Animals become transiently infected (TI) before recovering and becoming virus-negative, typically within 3 weeks or less. TI may occur without clinical signs but can be associated with diarrhoea, pneumonia and increased susceptibility to other diseases (associated with BVD suppressing the immune system), and a range of reproductive problems in adults (as outlined below).

2. Effects on fertility:

Embryo loss and return to oestrus, abortion, stillbirth, birth defects.

3. Effect in pregnant cows infected between approximately 30 and 120 days of pregnancy:

If not aborted, the unborn calf will become persistently infected (PI) with BVD virus. PI animals are KEY PLAYERS in the cycle of BVD virus infection. PI animals shed BVD virus at high levels for life and are the most significant SOURCE OF INFECTION to other animals. PI animals can look normal, particularly at birth, but may become stunted and ill-thriven. PI animals often develop a severe and 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 and MD can arise only in PI animals.

4. Effect of infection in mid to late pregnancy:

After day 150 of pregnancy, the unborn calf is usually capable of mounting an immune response to BVD infection, resulting in the birth of a normal calf.

How is BVD transmitted?

BVD is highly contagious, with PI animals being the main source of infection, shedding large amounts of virus in nasal discharges, faeces, urine, semen and saliva. The virus is spread by direct contact with an infected animal or by contact with contaminated equipment or visitors.

How widespread is BVD infection in Northern Ireland?

Agrisearch, in conjunction with the DARD Research Challenge Fund, have recently funded a study to estimate the percentage of dairy and beef herds in NI which currently have, or recently have had, active infection with BVD virus. Dairy and suckler herds undergoing a routine brucellosis herd screen between April 2011 and June 2012 were randomly selected and their blood samples sent to the Agri-Food and Biosciences Institute (AFBI) Veterinary Sciences Division.

Herds were tested using a young stock check test, with a minimum of 5 and a maximum of 10 homebred young animals (12-24 months of age) per herd tested for evidence of BVD infection. When an animal is infected with BVD the immune system mounts a response, with the production of proteins, called antibodies that bind to BVD virus particles. Therefore examining blood samples for evidence of antibodies to BVD is a means of identifying the infection status of a herd. An absence of antibodies in the sampled group indicates that they have not been in contact with BVD virus and is strong evidence of absence of current infection in that herd. On the other hand, the presence of antibodies in one or more animals indicates that BVD virus has been circulating in the herd within the last one to two years, and therefore that the herd is currently (or has recently been) infected with BVD, most probably by coming into contact with a persistently infected animal.

A total of 5,161 animals in 589 herds were sampled and tested. In 34% of them (202 herds) tests in all animals were negative for the presence of antibodies to BVD virus (termed seronegative); in 14% of the herds (83 herds) all animals were seropositive. In the remaining herds, one or more animals were positive for BVD virus antibodies. In summary, the important take home message from this aspect of the study is that 66% of the herds had at least one seropositive animal, indicating that they had been in recent contact with the virus (true prevalence was calculated as 67.37% (62-72.5%)).

Figure 1: Distribution of herds by the proportion of seropositive animals within the young stock tested

How do we interpret these results?

These figures indicate that BVD virus infection in Northern Ireland herds is very widespread. Eradicating the problem represents an opportunity to significantly improve profitability, with additional benefits for animal health and welfare. For example, it has recently been estimated that eradication in the Republic of Ireland would give a cost benefit ratio of 10:1 over the six years of the programme, i.e. a return of ten euro for each one spent.

Added benefits of BVD eradication for the carbon footprint of the NI dairy and beef industry

The figures from the Agrisearch/DARD study were used to estimate the greenhouse gas (GHG) emissions savings that an eradication programme could deliver, in terms of the overall mitigation target for agriculture. The eradication of BVD from NI dairy herds, based on combining a 2% improvement in milk production per animal with a 3% reduction in replacement rate would result in CO₂e savings equivalent to £3.64 million/year from the dairy industry alone (£40/t CO₂e). Based on the analyses of the dairy sector, it is estimated that a 3% improvement in replacement rate in the beef industry will lead to a 1.5% reduction in GHG emissions. This amounts to an estimated 43,500 tonnes of carbon equivalents estimated at £1.74 million. Under UK legislation, extending to NI, The Climate Change Act 2008 provides a legal framework to reduce emissions of GHGs by at least 80% below 1990 levels by 2050. Agriculture accounts for around 8% of all UK emissions. The savings obtained from the eradication of BVD in NI would make a big contribution to DARD's Greenhouse Gas Reduction Strategy and Action Plan, and the commitment to meeting targets for reduction in emissions.

