BVD in the beef herd

Intervet
Schering-Plough Animal Health

BVD in the Beef Herd

BVD is an economically important disease in the beef herd. To estimate the costs of disease on your farm we need to look at how BVD virus affects herds.

If your herd has experienced cases of calf Mucosal Disease (a symptom of BVD), then you are unlikely to forget it. Calves rapidly and dramatically go downhill and die within two weeks with no treatment possible. However usually the effects of BVD infection in a herd are much more subtle, such as abortions and poor fertility. Some signs may even go unnoticed, despite having significant cost implications to a beef farmer. An important consequence of BVD infection is the immunosuppressive effect so that other diseases on the farm (e.g. pneumonia and scours in youngstock, mastitis and TB in the adults) are made much worse. Where BVD has been on a farm for a few years, poor levels of performance may be accepted as "normal" whilst having huge implications to the farm's profitability.

To help explain how BVD causes problems in a beef herd, let's look at how BVD affects cows.

At its simplest, in non-pregnant cattle, the virus may appear like many others, as shown in Fig.1. These animals may show mild signs such as diarrhoea, however their fertility will also be affected.

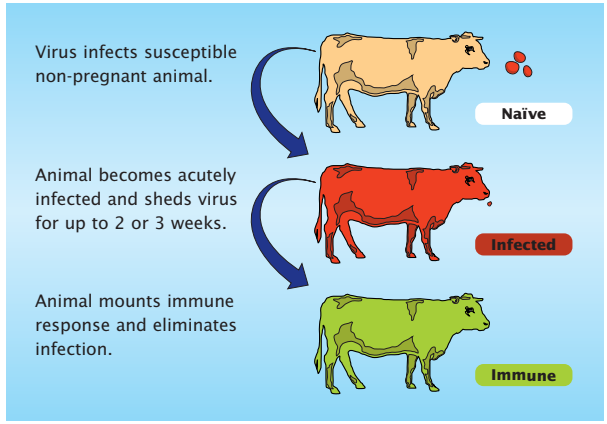


Fig.1 BVD infection of a non pregnant cow. Picture courtesy of K Cutler. 2008.

But what makes BVD different, and leads to the severe problems in the herd, is what happens when pregnant cows are infected. Foetal death, mummification or abortion are possibilities at any stage of pregnancy. But infection between 40 and 120 days gestation can lead to the birth of a PI (Persistently Infected) calf, as Fig.2 below.

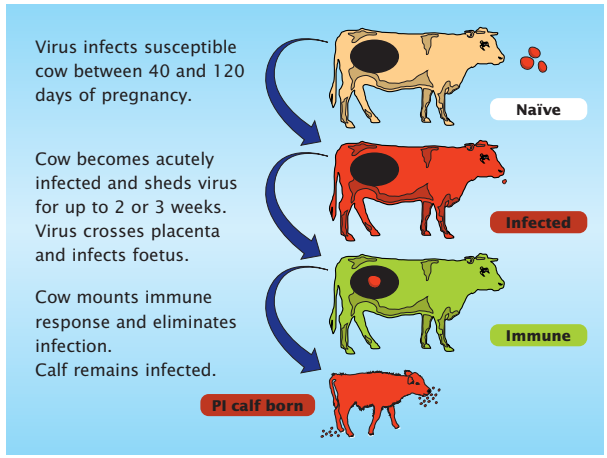
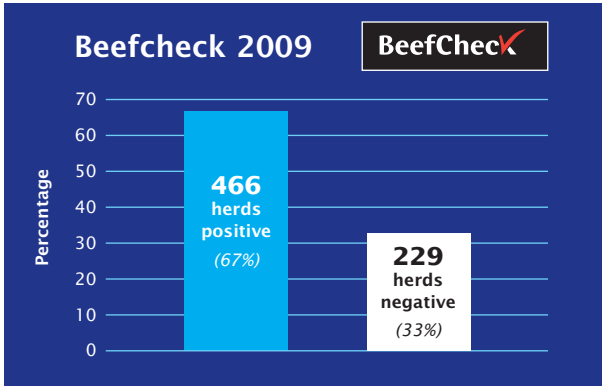


Fig.2 BVD infection of the pregnant cow. Picture courtesy of K Cutler 2008.

BVD virus can cause problems at **ANY** stage of a cow's pregnancy. Early foetal deaths and abortions are just some of these problems. These problems add up and can cause significant losses to a beef farm.

BVD diagnosis

Intervet/Schering-Plough Animal Health has been running a sponsored diagnostic scheme via veterinary practices for several years in which herds are screened for evidence of BVD infection by blood testing. This scheme is known as BeefCheck, and in 2009 67% of herds were positive for BVD.

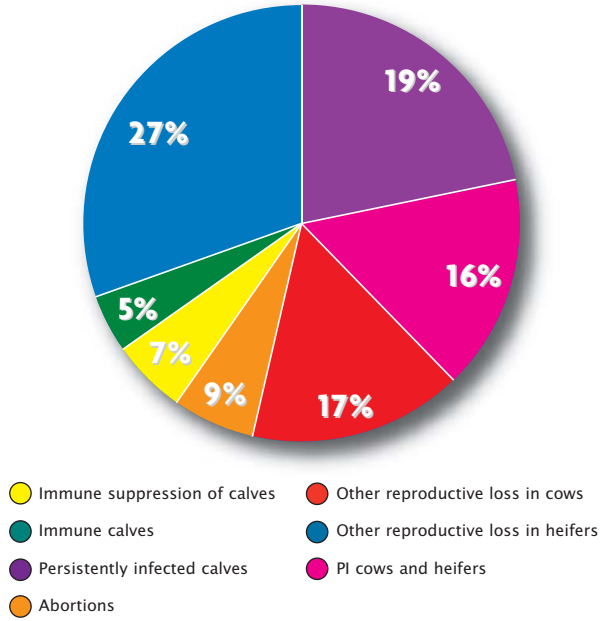


How BVD virus spreads in beef herds

Most BVD virus is spread by PIs (persistently infected carrier animals). In suckler herds, cows and calves are usually kept together allowing for the disease to spread between younger and older animals. PIs can be in contact with susceptible new born calves, replacement heifers, bulls and the breeding herd all at the same time. The longer life span of beef cows can also allow natural immunity to wane so that previously exposed cattle may become susceptible later in their life.

In 2004, the Scottish Agricultural College analysed the costs of a BVD outbreak in beef herds leading to an estimated average loss of £37 per cow per annum. More than half of those costs were attributed to fertility problems. The figures are broken down in Fig.3 below;

Fig.3 Breakdown of the losses associated with an outbreak of BVD
Ref. Gunn, Stott & Humphrey. The Veterinary Journal 167 (2004) 143-149.



BVD control programmes

Following the success of the BVD eradication scheme in the Orkneys, several areas in Britain have started new control schemes with a view to eradicating BVD in that area. Scotland, Somerset, Rutland & East Anglia are all in the process of setting up local control programmes within their areas. Many of the schemes are collecting data that should show costs and benefits of eradication and the secondary benefits of becoming free of BVD. However, do not wait for an eradication programme if you feel BVD might be a problem on your farm. Talk to your veterinary surgeon about control options available to you. The usual control plans available are:

1 Do nothing

Accepting BVD and living with the consequences has severe financial implications to a beef farm.

2 Maintain a closed herd

This requires good biosecurity and individual animal blood sampling of herd members and replacements to remove any PIs. Total biosecurity requires vigilance and measures such as double fencing to eliminate nose to nose contact!

Maintaining a truely "closed" herd is difficult. Other ruminants, such as sheep or deer, may spread disease while visitors who have been previously in contact with BVD animals can also present a risk.

Just remember a closed herd will soon become completely naïve and unprotected with the potential for disaster should BVD re-enter the farm.

3 Vaccinate heifers and replacement breeding animals

When BVD was first discovered and vaccines became available it was thought that simply vaccinating replacements might be an option for control. However it quickly became evident that this was not enough as the herd ended up with variable levels of immunity and disease could persist. Simply vaccinating replacements does not provide good disease control.

4 Vaccinate all cows and replacements prior to breeding and remove PIs

This will give maximum financial benefit and can be considered the gold standard of control. When combined with identification and removal of PIs, vaccination will produce rapid and sustained control of BVD and prevent all damaging reproductive effects. More importantly it prevents the birth of PIs. It also reduces the general infection level, so there is less chance of calves getting diseases such as scours and pneumonia.

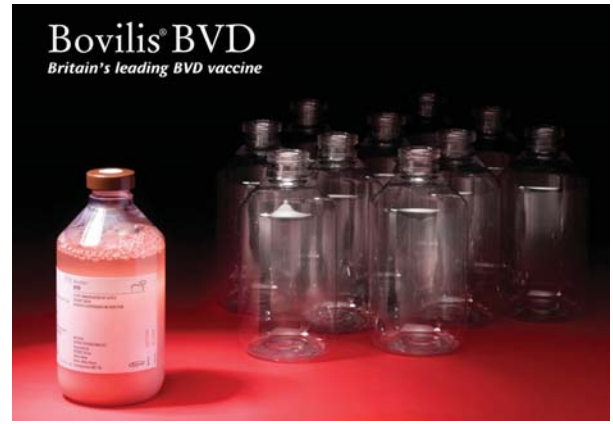
BVD threats and solutions

Threats	Solutions
• Introduced animals Cattle (Sheep and Wildlife)	• Quarantine
• Neighbouring stock	• Boundary biosecurity Double fencing Avoid common grazing
• Visitors Vets Advisors Contractors (and their equipment: foot trimmers, muck spreaders etc) Milk tankers and delivery lorries	• Vaccination
	• Clean and disinfection protocols to be in place

Vaccination with Bovilis® BVD

Bovilis BVD can be given to cattle from eight months of age. Each animal should be given 2mls by intramuscular injection. The primary course is two vaccinations 4 weeks apart. The immunisation program should be completed 4 weeks prior to service for good protection against early infection of the unborn calf. BVD challenge data shows prevention against cell-free viraemia 12 months after the primary course of vaccination.[3]

The British C86 strain of virus is used in Bovilis BVD vaccine. This strain, originating from the UK, is tried and trusted and has shown to protect against both type 1 & type 2 BVD. For more information on BVD and how best to control it in your herd please discuss with your veterinary surgeon.



BeefCheck

Bovilis® BVD

tried and tested BVD protection

References:
1. Bennett (1999) - VetRec 145 (1999) p376-377.
2. Defra farm survey - April 2006.
3. Assessment of duration of immunity of Bovilis BVD (2005).

Bovilis BVD is a vaccine containing inactivated BVD virus strain C86.
A slight swelling may be observed for 14 days at the site of injection.
Transient mild pyrexia may occur. Vaccinate only healthy animals.
No information is available on the safety and efficacy from the concurrent use of this vaccine with any other. It is therefore recommended that no other vaccines should be administered within 14 days before or after vaccination with this product.
In the case of accidental self injection, seek medical advice immediately and show the package insert or label to the physician.
Do not mix with any other vaccine/immunological product.

Legal category POM-V Further information is available from your veterinary surgeon from whose advice should be sought.

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