

**BVD Eradication**  
**Bovine Viral Diarrhoea**  
**Mucosal Disease**



**Disease:** BVD virus transiently inflames and damages the lungs, guts and reproductive tract of cattle before the body mounts an immune response and clears it. Where pregnant animals are infected there is the potential to create a Persistently Infected calf – a calf that will carry and shed the disease for life and NEVER produce antibodies to fight the infection. PI calves often do not thrive and are culled early but MANY WILL APPEAR NORMAL and can be unintentionally entered into the breeding herd CONSTANTLY SHEDDING THE DISEASE!

Common results of BVD presence in a herd;

- Infertility, early abortions(repeat breeders), extended calving - conception
- Calves: **Ill thrift, increased calf death, scour & pneumonia**
- Calves born weak/under developed/deformed/calving difficulties
- Reduced effectiveness of vaccines

**Scotland BVD Eradication Scheme – ALL HERDS**

- It is mandatory for all breeding herds to check their BVD status every 12-13 months.
- There is a range of different ways to achieve this laid out by the Scottish Government. The results of the test will declare the herd as holding either 'negative' or 'non-negative' status, this information will be clearly available at cattle sales.
- Non-negative herds are encouraged to eradicate BVD (this is not mandatory) and prevent re-infection.
- From early 2015 non-negative herds must test all animals individually for BVD prior to any movement.

**NEGATIVE HERDS**

Herds that screen as negative must remember that whilst at the time of the screening test they were negative, the animals in a negative herd are most vulnerable to infection and risk the greatest losses should BVD strike.

It is strongly recommended that all negative herds in South West Scotland where the prevalence of BVD infection across herds is very high PROTECT THEIR STATUS AND THEIR HERD, this can be achieved by following the advice below;

# ALL Herds

## STEP 1: Protect Your Herd From Infection

1. Stock proof fencing around the whole farm perimeter.
2. Ideally prevent nose to nose contact with stock of unknown status on neighbouring farms (a 3m gap is required at minimum). This is often not economically viable or practical in which case vaccination is strongly advised.
3. Vaccinate **all breeding stock including any bulls** against BVD with completion of the course at least 7-days before breeding. This is crucial as the reason for vaccinating adult stock is to protect the unborn calf and prevent the formation of the PI animals responsible for spreading the disease.

### Vaccination protocol: Bovidec BVD

- i. **Primary course:** Give two doses (dose = 4ml subcutaneous/under skin) 3 weeks apart to all breeding stock including bull. Best practice is to complete course a minimum of 7 days before mating – this will ensure the unborn calf is protected. Minimum age for the first dose is 5-months **BUT it is best to test calves for BVD where required before they are vaccinated.**
- ii. **Booster:** Single 4ml subcutaneous dose given annually, ideally give at least 7 days before mating to ensure protection of the unborn calf (though where not practical this can be safely given to pregnant animals up until the last 3 weeks of pregnancy at which point any excess handling should be avoided).

\*Before beginning vaccination you should screen breeding herd for PI animals and remove any found from herd.

4. **Quarantine and test all added stock for BVD** (e.g replacement heifers) before joining with the rest of the herd. This is often overlooked!
5. Visitors, contractors, vehicles and equipment can transmit BVD but the risk is lower than transmission from other cattle, nevertheless, common sense cleansing and disinfection should be practised where possible.

## **STEP 2: NON NEGATIVE HERDS IDENTIFY & REMOVE PI ANIMALS**

### **PI Animals = Persistently Infected Animals;**

PI animals form when an unborn calf is infected with BVD virus through infection of its mother in early pregnancy. Whilst the mother will produce antibodies and clear the infection over 2-3 weeks, the calf she carries has not developed an immune system yet so continues to carry the virus. When born this calf considers the virus part of itself so WILL NEVER TRY TO GET RID OF THE VIRUS BY MAKING ANTIBODIES. IT WILL CARRY AND SPREAD the virus throughout its life, and if in contact with unvaccinated pregnant animals can cause early abortions and the creation of more PI animals!

PI animals typically comprise around 2% of a cattle population with no BVD control measures in place and they are most commonly aged <2 years although adult PI animals do occur. Adult PI cows will always give birth to PI calves.

Individuals only need to be tested once in their lifetime as their status does not change after birth. **Every** animal in the herd including those unborn needs to be checked for BVD PI status and positives culled immediately. However you may not always find the original PI which exposed the herd if it died or has been culled prior to testing.

## **HOW TO SCREEN YOUR HERD FOR PI ANIMALS**

- BVD virus and BVD antibody can be found in milk or blood.
- Bulk milk samples can be tested for virus, if virus is present then individual blood sampling is required to identify the PI individual(s) – typically the bottom 10% lowest yielders are tested first as these are most likely to have a PI amongst them. If bulk milk is negative for virus only the adult animals not contributing to the bulk milk on the day of the sample collection need blood sampling.
- When testing large numbers of animals we take individual blood samples which are then pooled in groups of 10 and tested for virus, if any group is positive, the individual samples for that particular group can then be tested and the infected animal identified.
  - Test every calf born into the herd during the 12-month period after the last PI animal leaves the herd in case any pregnant animals were carrying PI's. This would most commonly be done by ear tag tissue testing. Alternatively antibody check tests can be performed on all groups born within the same 12 month period. If a PI is within any group the other calves in that group will have been exposed and be antibody positive.
  - *Suckler herds:* Blood sample or ear tag tissue test the calf crop. Dams of calves testing negative do not need a blood test as they will not be PI (PI dams always give birth to PI calves).
  - *Finishing cattle:* If these are to be finished shortly there is little advantage in testing them. If they are likely to be in contact with breeding stock e.g. in the same building it may be prudent to test them – please discuss your individual situation with one of us.

# UNDERSTANDING YOUR TEST RESULTS

	<u>ANTIBODY</u>	<u>VIRUS</u>	<u>STATUS</u>
	— NEGATIVE	— NEGATIVE	NOT INFECTED NOT VACCINATED AT RISK
	+ POSITIVE	— NEGATIVE	EITHER VACCINATED OR PREVIOUSLY INFECTED
	+ POSITIVE	+ POSITIVE	CURRENTLY INFECTED AND MOUNTING ANTIBODY RESPONSE
	— NEGATIVE	+ POSITIVE	<b>PERSISTENT INFECTED OR EARLY INFECTION*</b>

\*RETEST IN 1 - 2 WEEKS, IF STILL ANTIBODY NEGATIVE THEN PI

## HOW BVD AFFECTS YOUR COWS

