The financial costs of a BVD dairy herd

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"Farmers must be encouraged to start and finish a committed BVD eradication program to prevent high economic losses associated with the disease. Vets should be encouraged to carry out risk management analyses and engage in business analyses to demonstrate and discuss the benefits and the costs involved in disease interventions in each specific farm, including vaccination programs."

Background

In 2011, poor production and fertility performance led to suspicion of BVD. Although the herd had been vaccinated against BVD, the farmer commented that the protocol was not thoroughly followed.

Testing showed that there was evidence on BVD virus in both the adult milking herd and the youngstock. The strategy used to eradicate BVD in this farm was by means of elimination of persistently infected (PI) animals only, and vaccination was not pursued.

Once animals were confirmed as a PI they were culled but in some cases 8 months passed before they were removed. All newborns were tested for antigen till April 2013, and due to the negative results at that time, the farmer decided to stop testing and the eradication program ceased.

The herd was checked quarterly for BVD PCR these showed negative results for BVDV from 2012 to 2015. In 2015 BVD virus was detected again in the bulk milk sample.

The farm manager questioned the reasons behind the recent outbreak and whether it was cost-beneficial to carry out a new PI hunt, which led to an impasse in the investigation. Therefore, the aims of this report were firstly, to discuss the risk factors that led to the detection of BVDV in the milking herd in 2015; and secondly to demonstrate the impact of the disease and its control on the farm.

Preliminary Indication

Several risk factors identified might have contributed to the recent outbreak:

- High biosecurity and biocontainment challenges on this farm.
- PI animals were not removed immediately from the farm upon confirmation.
- Testing of newborn calves was ceased too early in the process.
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- The movement of the youngstock to other premises removed the PI(s) from the farm, keeping the virus away from the milking herd for almost two years (bulk milk Ag negative), which masked the failure of eradication of BVDV from the herd.

Further Development

By analyzing data from the farm it was possible to demonstrate the results of removing BVD from the farm in 2011. This could be seen in milk yield, conception rates and age and first calving. These could have been the result of many factors but association with BVD control at this time is very likely.

Additional costs		Additional benefits	
New Costs	**£**	**Costs Saved**	**£**
testing	4,947	heifer rearing (fewer days)	96,009
heifer rearing (more heifers)	42,158	open days	4,914
Revenue Foregone		**New Revenue**	
non-applicable		heifer sale	142,500
Total additional costs	45,105	Total additional benefits	243,423
Benefits minus costs	**Per herd**	+£198,319	
	Per head	+£1,224/cow	

A superficial 2-year partial budget analysis was conducted for comparison between the economic situations in 2012, when disease was present on farm, and in 2014, after the control program took place.

The table above shows the positive outcome in the two years following the control of the disease, with gains of approximately £100,000 per year or £600 per cow per year.

Treatment Applied

First lactation heifers were screened for BVD antigen; one PI animal was identified and removed.

The biosecurity risks were highlighted and the areas to improve were discussed with the client. However, the farm practices regarding biosecurity remained unchanged.

Due to the biosecurity risks identified in both premises, a thorough vaccination protocol was put in place on the bulling heifers.

Result

Bulk milk Antigen tested negative after the removal of the PI animal.

Questions

Q1: Which of these was NOT a possible risk factor for the BVD outbreak?

1. Lack of vaccination for BVD.
2. Stopping testing of newborn calves to early.
3. Purchased animals.

Q2: What BVD control steps did the farm take following the most recent outbreak?

1. Vaccination of heifers.
2. Double fencing boundaries.
3. Only purchasing stock from accredited sources.