

How important is leptospirosis

Bovine leptospirosis is considered to be an important cause of reproductive failure in the UK, but not in mainland European countries. Leptospirosis is caused by the organisms collectively referred to as *L. Hardjo*. DNA analysis has identified two species known as *Leptospira borgpetersenii* type *hardjobovis* and *Leptospira interrogans* type *hardjoprajitno* within this group. Currently there is a lack of information on the relative importance of the two types in the UK

- *Leptospira borgpetersenii* type *hardjobovis* is the predominant type found in cattle in the UK and mainly associated with infection of the kidneys, and is less often the cause of reproductive disease in cattle. It is common in mainland Europe, Australia and New Zealand as well as the UK. Its main importance lies in its ability to cause disease in humans through exposure to cattle urine.
- *Leptospira interrogans* type *hardjoprajitno* is associated with infertility, abortion and the birth of weak under-sized calves. However this strain appears to be restricted to the UK and North America.



Change of rules to the Johne's disease accreditation programme

The CHCS rules on Johne's disease accreditation have been changed.

The biennial herd test option can only be selected after an accredited herd has had at least two further clear annual herd tests.

The biennial option is not an option for herds that have fewer than 20 adults.

- The blood test used can only identify that animals have been infected with *L. Hardjo* and not to distinguish the strain responsible for infection.
- The relative importance of these two strains of the organism has not been determined for the UK.
- The blood test cannot distinguish between animals that have been vaccinated and those that have been infected with either strain of the organism.
- The widespread use of the vaccine to reduce the risk of spread of infection from cattle to humans means that it is difficult to determine how common these infections are.
- The best way to avoid introducing Leptospirosis to your herd is to buy from herds that are accredited free of the disease or to blood test animals in quarantine and only bring in those that test negative for antibody.

More frequently asked questions about Johne's disease

For herds that are accredited as free of Johne's disease and on two yearly testing why should they test cull cows in the intervening year?

The first sign of Johne's disease can be a drop in production or fertility and therefore the cows that are culled are the most likely to be infected. It is therefore conceivable that infection could be masked in a herd as infected animals are culled before a two year herd test. Don't forget too that animals that have not been born in the herd should be tested each year. The reason for that is coming from a different herd there is very little information on the risk they pose and annual testing is a necessary precaution.

Why test animals from two years of age and ignore the younger ones?

While infection with Johne's disease often occurs early in life signs of disease are relatively rare in animals under two years of age. The animals only rarely test positive for antibody before two years of age. Therefore testing young stock is a poor use of resources. In herds in the control phase of the programme you may wish to test breeding animals as they approach two years of age rather than let them go until they are almost three years of age.

The financial argument for Johne's disease control in the commercial beef cow herd

There are three main issues when considering a testing and control programme for Johne's disease.

- 1/ Is the disease causing a significant annual loss of cows?
- 2/ Is the herd selling replacement stock or rearing replacement stock from within the herd?
- 3/ What is the cost of annual testing?

The table below simply details the disposal costs for a herd that is not carrying out any testing and what the replacement cost would be.

		% Annual loss to Johne's disease		
		2	5	10
Number of cows culled per 100 cows		2	5	10
Disposal charge	£100	£200	£500	£1,000
Replacement female	£800	£1,600	£4,000	£8,000
Total cost		£1,800	£4,500	£9,000

The annual cost of testing is in the region of £7 per cow for sampling and lab costs. Testing allows the identification of animals before they start to lose weight. This allows test positive animals to be treated preferentially and culled in good body condition. The sale of one test positive cow in good body condition will save the disposal charge and generate enough income to pay for a herd test of 100 cows. Therefore the breakeven point for testing is an annual test positive rate of 1%.

Of course if the answer to question 2 above is yes then a different or longer term view is required. In this case you are managing to mitigate the risk of long term problems for the purchasers of your stock or indeed for your own herd. The annual cost of £7.00 per cow per herd may appear low in that context.

How can I change the date of my herd test without losing herd status?

The most common reason for requesting a change in herd test date is to fit in with a planned tuberculosis test

Where the herd is accredited and the proposed period between tests is less than one year: This is not a problem just go ahead with the herd test by letting our office know and requesting herd labels.

Where the herd is in the qualifying phase and the proposed period between tests is less than one year: This is a problem. In these cases there must be 12 months between clear tests to satisfy the accreditation criteria. So it is not possible to bring a herd test forward without losing ground in the progress towards accreditation.

Where the herd is accredited and the interval is longer than 12 months: This is manageable. You must test any animal that is due to leave the herd between the dates that the herd test was scheduled for and the new herd test. This would also apply to herds that are currently going through the qualification phase on the way to becoming accredited.



PCHS
NEWS

Premium
Cattle
Health
Scheme



December 2010



From Glyn Vaughan, Dolcorsllwyn Limousin Herd, Machynlleth, Wales

The curvaceous, voluptuous 5'8" red head walking down the lines in Carlisle looked very appealing!! Her looks, however, did not really tell me anything about her temperament, intelligence or for that matter her health status!

In the last seven years of breeding Limousin cattle, I have not bought a single animal into the herd of 60 pedigree cows. In many a sale I have seen a cow or a heifer that I think would improve my herd and allow me to breed better stock. I have seen bulls in sales that one would die for. However, in most cases, these animals have no health status or low health status. Fortunately, the Limousin Society is actively promoting improvement in this area.

The main problem associated with high health status is the cost of getting there. It is heartbreaking to cull good animals that look healthy, but on being blood tested show signs of diseases that, we are told, will in time pass on to more animals in the herd and to other herds as well.

When I first became a member of a health scheme, I thought that commercial men would pay more for accredited animals but the reality is that they are paying less for unaccredited stock.

As pedigree breeders, we are now expected to test for TB, Johne's, BVD, IBR, Leptospirosis, as well as DNA and semen test all bulls. This incurs considerable cost for the breeder and at the moment, I don't believe we are covering these costs by getting a higher price for our stock in the marketplace. We are gaining, however, in having a breed that is moving towards eradication of some of these diseases.

If all pedigree breeders tested, and then culled all positive-tested animals, the spread of the diseases mentioned would drop considerably, and commercial men who breed their own replacements would soon follow suit. Flying herds, however, will probably continue to be problematic.

Accreditation is commendable but I still believe that you are only ever completely clear of a disease on the day of the test. We must aim to produce healthy cattle since there are plenty of other things to go wrong. At least there are here on my farm!

I often think of the red head in Carlisle and the unaccredited heifers I nearly bought, but at least as far as the cattle are concerned, I'm glad I didn't go there!

First Impressions 1

The costs of BVD virus 2

A structured approach to health planning for the suckler herd 3

IBR control, juggling vaccination and accreditation 3

Why we joined PCHS by Robert and Kay Adam 4

How important is leptospirosis 5

Change of rules to the Johne's disease accreditation programme 5

More frequently asked questions about Johne's disease 6

The financial argument for Johne's disease control in the commercial beef cow herd 6

Health Schemes Manager
Greycrook, St Boswells
Roxburghshire
TD6 0EQ

T: 01835 822456
E: ian.pritchard@sac.co.uk
www.sac.co.uk/pchs

© The Scottish Agricultural College 2010

SAC is a charity registered in Scotland, No. SC00371

SAC Consulting

The costs of BVD virus

The cost of BVD outbreaks can vary enormously. The level of immunity in the herd will have a significant influence on the losses incurred. Herds with no recent exposure to BVD and therefore low levels of immunity to BVD can suffer very high losses when an outbreak occurs. About five years ago a Scottish suckler herd identified 28 persistently infected (PI) calves from 104 cows. All of these PI animals developed mucosal disease and died causing a loss of £21,000 from deaths alone. Veterinary costs and infertility costs are not included in this.

If the majority of the herd is immune, either through previous exposure to BVD virus or as a result of vaccination, then fewer PI calves are born and herd infertility effects are lower. However the birth of even one PI has an adverse effect on the rest of the calves around it. Infection with BVD virus reduces the calves' ability to cope with pneumonia or scour. Where there is a PI animal in the calf crop then losses from calf hood diseases will be much higher and deaths are more likely to occur.

The main sources of loss in herds infected with BVD virus are:

- Reduced fertility – decreased conception rates, returns to service, increased barren rates and abortions
- Deformed/weakly calves born
- Immunosuppression of young stock - resulting in more severe effects and increased losses from other infections, such as pneumonia and scour
- Deaths of PI animals

Typical average losses due to BVD virus have been calculated as approximately £35 per cow per year. For spring calving, hill suckler herds this represents about 63% of the farm gross margin. Another study calculated the average loss due to BVD virus infection to be £46,000 for a 100 cow suckler herd over a ten year period.

If a herd is infected with BVD virus then removal of PIs and vaccination of the herd will reduce the losses. Good biosecurity, such as quarantine testing of all bought-in cattle

and having no contact with other cattle herds, is also essential to help prevent the introduction or re-introduction of infection. The PCHS BVD control and accreditation programmes offer the complete blueprint for BVD control in the breeding herd.

BVD in finishing herds

Finishing herds can also suffer significant losses from BVD virus. As stores are usually bought from multiple sources the level of immunity will vary from group to group. There will be a mix of antibody positives (which have been exposed to BVD virus and are likely to be immune), antibody negatives (which have never been exposed) and possibly also PI animal/s. It is estimated that 1-2% of cattle are PIs. There will be a higher proportion of PIs in young stock than in adult cattle as they often die from the effects of BVD (mucosal disease) before they reach maturity. Therefore a holding with 300 store cattle could have on average between three and six PIs. As well as being more likely to die from mucosal disease before they reach finishing stage, PIs constantly shed large amounts of virus. If they are mixed with antibody negative stores then these previously unexposed cattle will be immunosuppressed for a couple of weeks following exposure to BVD virus. During this period they are likely to be more susceptible to the effects of pneumonia and outbreaks will also be more severe. More cattle will be affected, resulting in higher treatment costs and deaths will be more likely as their immune systems are less able to deal with the effects of the pneumonia. The problems are likely to be greater if PIs are mixed with naïve cattle for the first time during winter housing, when the risk of pneumonia is highest.

There are two ways to handle this problem. Firstly stores may be purchased from herds that are accredited free of BVD, ensuring that no PI animal is purchased onto the unit. Where there is insufficient supply of accredited stock then testing at arrival on the unit offers the next best approach. This can be done by blood sampling or tissue sampling (using ear tags). The lab cost for this is in the region of £4 per animal tested. The risk of problems can be further reduced by keeping groups of calves from different sources separate until any PI calf can be identified and removed.



A structured approach to health planning for the suckler herd

There is often a gap between what a herd owner needs from their vet and what the vet believes the herd owner requires. Veterinary expertise can be used to promote the health and fertility of the herd, but too often the vet is unaware of the problems that exist and the herd owner is unaware of how veterinary expertise can be used to solve problems or mitigate risk. To overcome this SAC has produced a web-based system for managing the health and productivity of the beef cow herd. This allows an interphase between the needs of the herd and the expertise of your vet to deliver the best advice on the management of the health and productivity of the herd.

The main aims of herd health planning are to maximise productivity and herd profitability by managing the health and fertility of the herd. Central to this approach is using production data to define priorities for the herd and ensure that resources are used with maximum efficiency. The health planning system requires the key production data to be made available to your vet, allowing analysis and then an action plan to be developed that tackles the main issues. But this system is not only structured it is dynamic, allowing data to be entered when it is available and the analysis and actions updated as required.

To use the system your vet is required to subscribe and purchase licences for his clients. The farm is then enrolled through the practice. The system is confidential, allowing your data and plan to be viewed only by your vet practice or by a consultant nominated by you. Once enrolled you can set-up your herd details, entering the production objectives,

IBR control, juggling vaccination and accreditation

The presence of IBR antibody indicates that an animal has either been exposed to natural infection or has been vaccinated. Once an animal has been naturally infected with the IBR virus it will remain so for life.

Two types of antibody can be produced in response to vaccination. The antibodies produced in response to marker vaccination can be distinguished from those produced in response to natural infection whereas those produced in response to conventional (non-marker) vaccination can not. Marker vaccination is not a barrier to herd accreditation, but is a trade barrier for sale to AI studs or internationally. Conventional vaccination is a barrier preventing both international trade and herd accreditation.

Our experience is that antibodies produced following conventional (non-marker) vaccination will persist for

production details and existing treatment and biosecurity routines. Your vet then reviews the information and identifies the areas that would benefit from a change in routine treatment or other approach and in consultation with you the next action plan can be generated. As production data or disease data becomes available that can again be entered and the action plan reviewed and updated by the vet.

While the system is available at all times through the web, allowing you to look at the most recent action plan it is also possible to print off a hard copy of the plan, selected portions of the plan or the calendar of actions.

A central function of the web-based database is to generate bench marking data to allow you to compare your levels of herd performance with industry targets and that achieved by other herds in the system.

We believe we have developed a management tool that will benefit the majority of herds by allowing veterinary expertise to be delivered to the areas that really matter, improving productivity and health of your herd. Development of the system was supported by Scottish Government and the programme is currently available free to farmers and vets in Scotland and available through subscription to vets and their clients in England and Wales and beyond.

If you would like to find out more about the system please visit www.sahps.co.uk or email enquiries@sahps.co.uk.

variable periods of time, but usually years. Pedigree animals for potential sale should not be vaccinated against IBR and if any vaccine is used it should be marker vaccine only. Care is required when selecting pneumonia vaccination protocols for young stock and these should be discussed with your vet.

Marker vaccine can be used in herds with evidence that natural infection has or is occurring. The aim is to vaccinate all breeding stock that are not for sale in the herd, plus any young stock that will not be for potential sale for breeding. Potential sale animals should be left unvaccinated. If there has been no evidence of clinical IBR associated disease then a killed marker vaccine should be used and if there is evidence of recent clinical IBR associated disease then a live marker vaccine should be used.

Clearly there are a range of options here, which highlights the need for a specific IBR control plan tailored to your herd's needs put together in conjunction with your vet.



Why we joined PCHS by Robert and Kay Adam

At Newhouse of Glamis we run 110 pedigree cows split between Charolais and Limousin. We joined the health scheme in 2003 following many years of individually testing our bulls and heifers before the sales. It was following on from the customers' demands that we entered into the scheme, we needed to know our complete herd health status in order to provide the buyer with the health guarantee they required; individual testing didn't provide us with enough confidence.

We entered into the full herd test for Johne's and BVD, and all animals on farm are vaccinated for BVD and Lepto and all females are vaccinated with the IBR marker vaccine.

It was the demand of our commercial customers mainly from Orkney and the Crofter's Commission that initially pushed us in the direction of a BVD herd testing as the islands were striving for BVD accreditation. We obtained full BVD accreditation in 2005. All bulls and females sold off the farm are now vaccinated twice for the buyers convenience. We undertake a full Johne's test each spring and have had clear herd tests, but to obtain full accreditation we require 3 clear tests in a row. It is like getting your exam results all over again when the test results envelop drops through the letterbox and you only need one cow to let you down. As a result of this full herd test each year we have the confidence to sell our cattle knowing they are clean of the disease. We also have to pay

particular attention to our stock bull selection and buy only from herds with a health status similar to that of our own.

It gives us great pleasure to show off our health cards at sales knowing that we can give our buyers a health guarantee that the SAC Premium Cattle Health Scheme provides and the confidence to sell our high health animals. Health accreditation doesn't happen overnight but we as stock breeders think it has been money well spent and look forward to hopefully selling you a Newhouse animal in the future!

