

Johne's Disease

Control in the Dairy Cow



How Common is Johne's Disease in the UK?

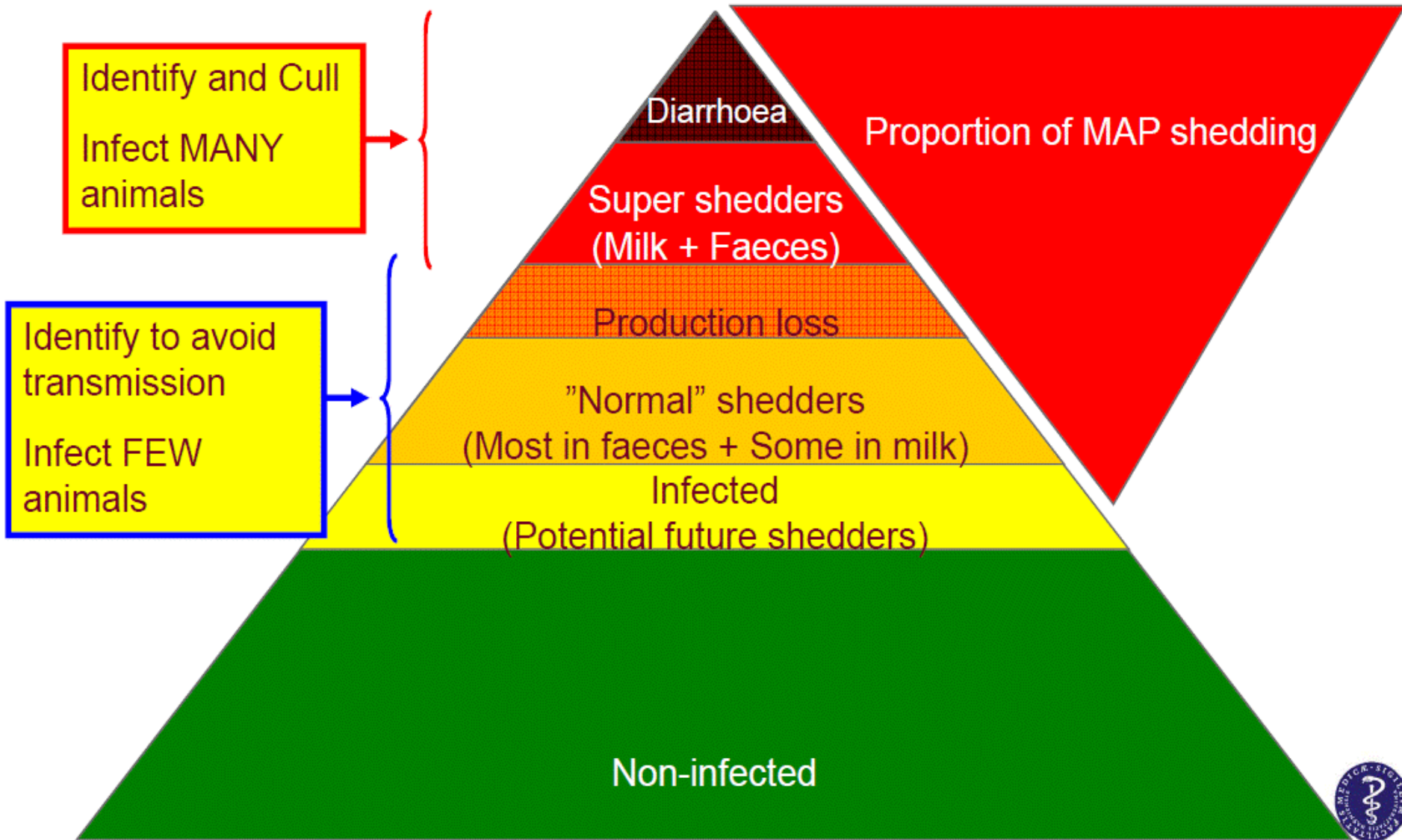
- VLA survey on 120 farms in 2006
 - reliably confirmed infection in 34% of herds
- Likely to be an underestimate
 - NML internal analysis of over 900 30-cow screens in 2011 found one or more positive result in 68.9%
 - Other data also suggests the disease situation has got worse

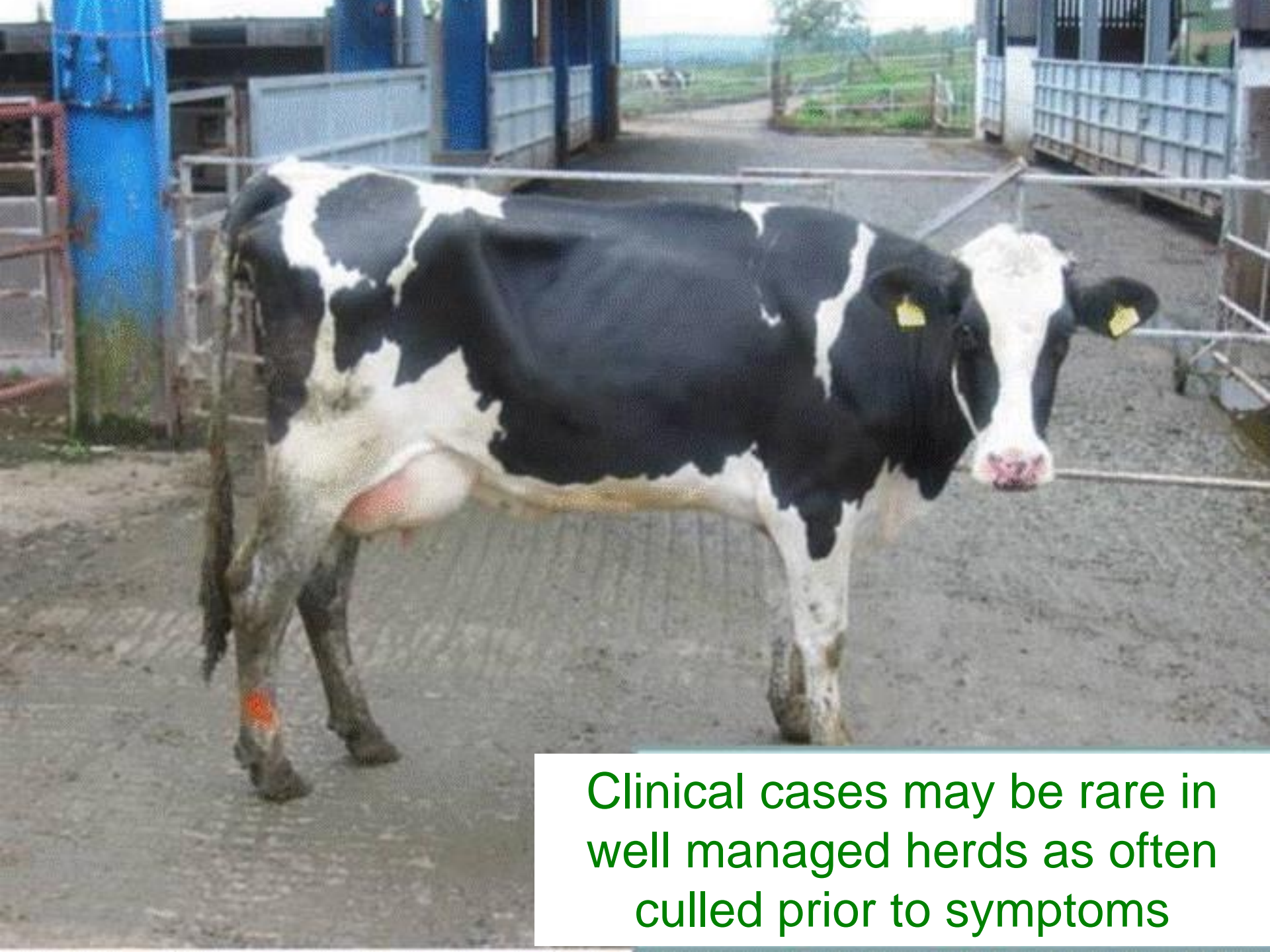


The Iceberg Concept

- For every animal that develops clinical signs
 - there will be 7 to 10 animals excreting
 - there will be a further 7 to 10 in the silent period of infection
- In heavily infected herds around 25% of animals are faecal culture positive
- No more than half or a third of infected animals will be detected by lab tests on a single occasion.

The Iceberg Concept



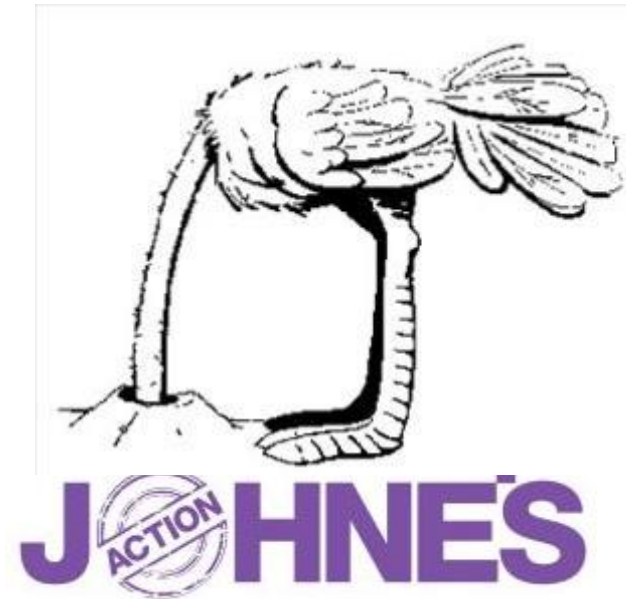


Clinical cases may be rare in well managed herds as often culled prior to symptoms

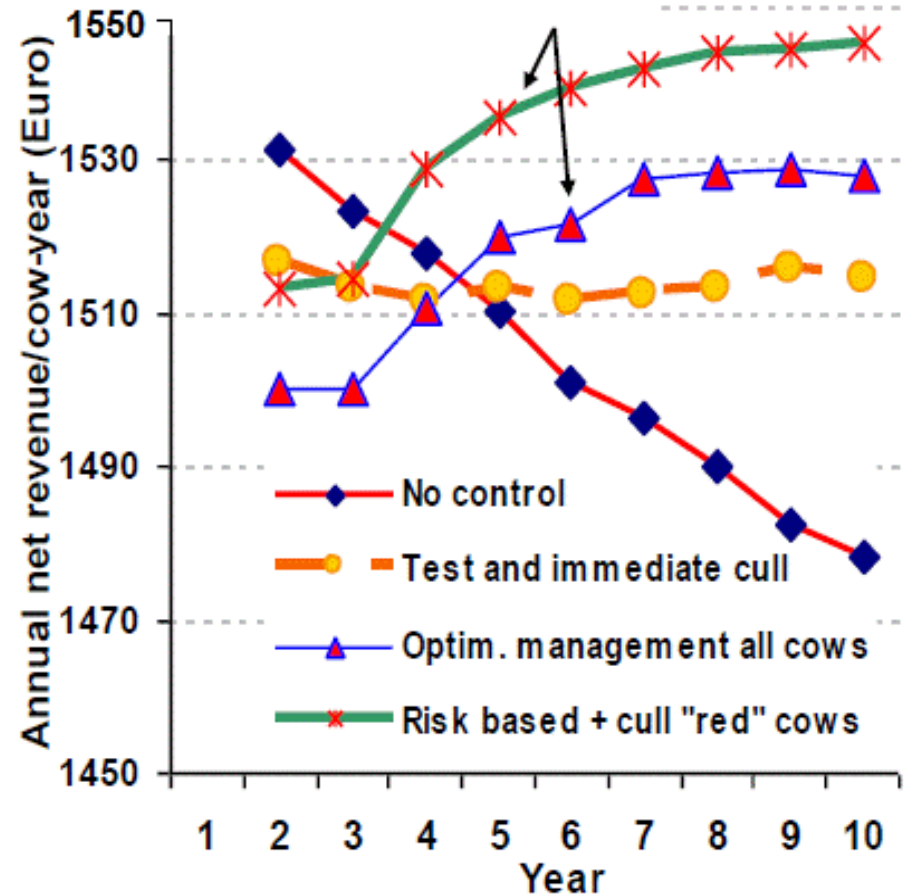
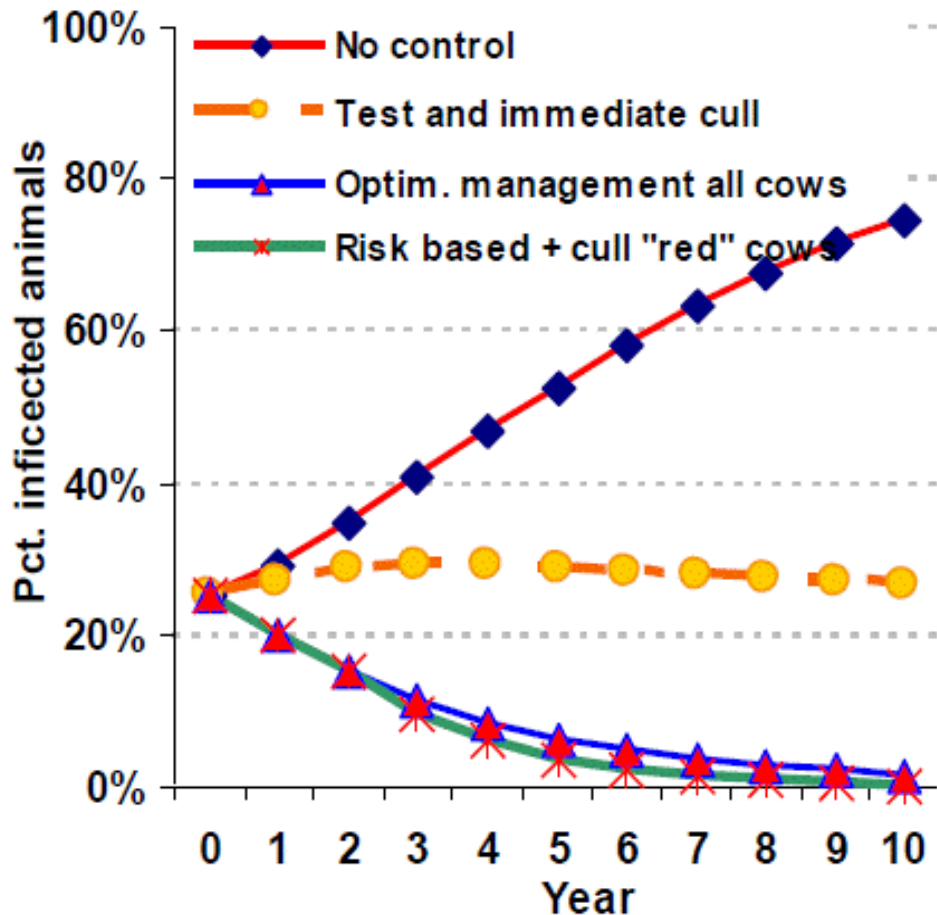
Why Control?

- Annual incidence of mastitis around 65/cases/100 cows/year
- Lameness prevalence ?? 20%
- Conception rate 37% and falling,
- Cull rates

“We’ve got enough problems
.....Why Bother?”



Is there a Cost Benefit?



Inaction in the long term will cost more than action!

Develop a farm plan with your vet

Select the most appropriate strategy for farm by assessing factors such as:

- Current **Prevalence** of Johne's on the farm
- **Biosecurity** risk associated with the farm (e.g. buying in of stock)
- **Bio-containment** risk associated with the farm (e.g. risk of spread within the holding)
- **Resources** (capital and human)
- **Aspiration** (eg desire to eliminate Johne's completely or simply contain the disease at manageable levels)

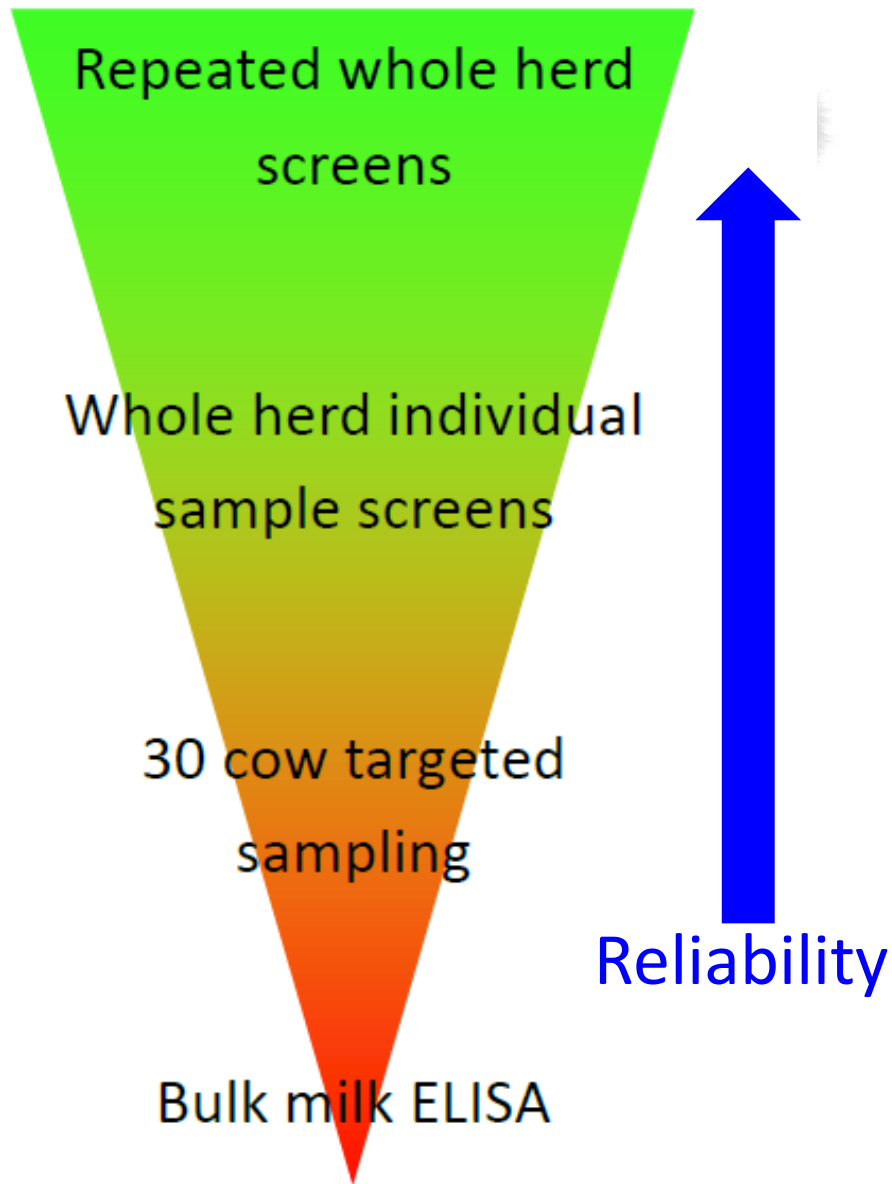


Know Your Johne's Disease Status

Establish a base status of the herd

1. A herd-level test to provide an indication of prevalence
2. An assessment of the risk of entry of the disease (Biosecurity)
3. An assessment of the risk of spread of the disease (Biocontainment)

Know Your Johne's Disease Status



Johne's disease is complex and not always easy to detect

The more samples you take, the more reliable the results

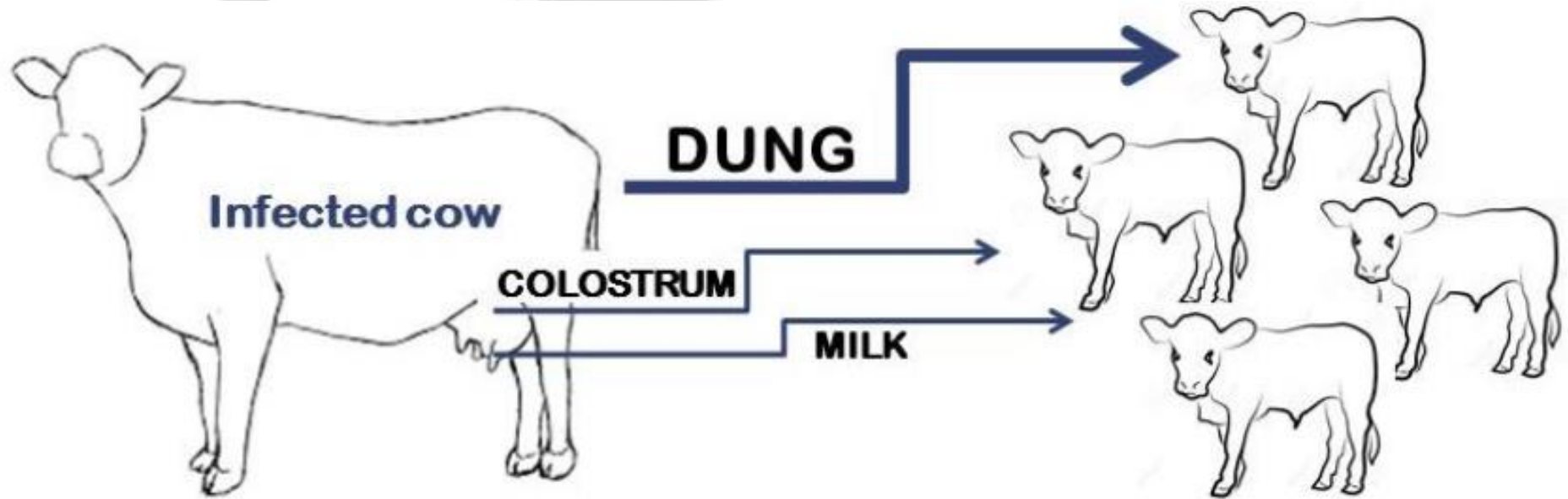


Question 1

What do you think is the most important source of transmission of infection of Johnes in the herd?

1. Faecal contaminated material
2. Trans-placental during pregnancy
3. Bacteria excreted directly in the milk and colostrum
4. Aerosol route

Breaking the Johne's cycle is Key



Johne's infection is mainly caused by calves ingesting dung through contaminated bedding, udders, teats or on dirty buckets of colostrum or milk. Much less commonly the disease can be acquired in the womb or later in life.

80% of Johne's infections occur within the first month of life



1. Biosecurity Protect and Monitor

- For herds with no evidence of disease
 1. A plan to protect the herd from disease entry
 2. Monitor through appropriate screening tests
e.g. repeated 30 cow screens /whole herd screens
quarterly

Buyer Beware (Testing)



2. Improved Farm Management

- Works by reducing the risk of spread to calves using husbandry measures alone
- Requires dedication and labour



2. Improved Farm Management

- Prevent ingestion of manure by all animals
 - Particularly the young ones
 - Keep manure out of feed
- Do this by:
 - Colostrum /milk management
 - Calf management
 - Cleaning and disinfection
- Calving pen
 - Clean and dry
- Separating cows from calves



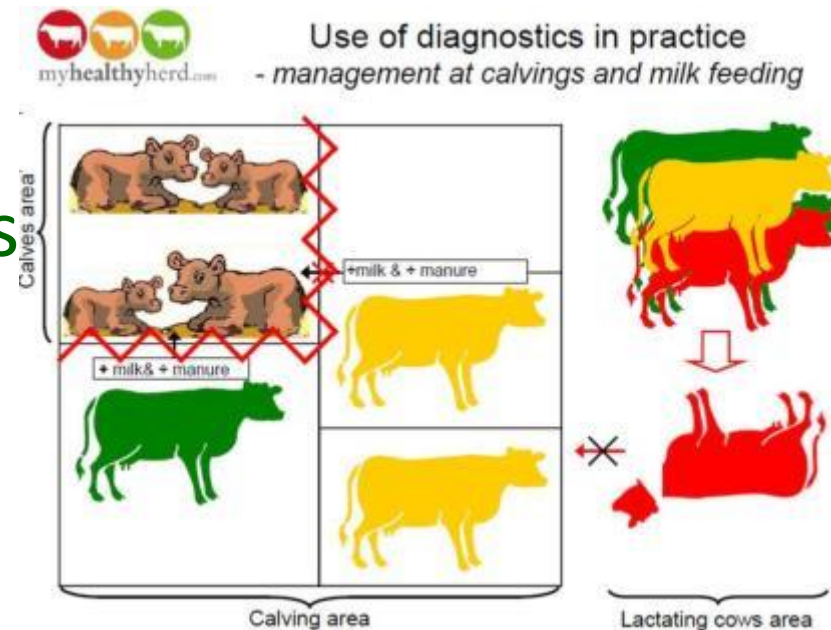
Question 2

What form of testing have you performed within the herd in the last year?

1. None
2. Bulk Milk
3. 30 cow screen
4. Cull cow testing
5. Whole herd testing via milk /blood

3. Improved Farm Management and strategic testing

- Using a testing program in conjunction with IFM will help identify heavy shedding or infectious cows
- Use Risk Based Planning
- For Example, test positive cattle are not allowed to enter the maternity areas



4. Improved Farm Management, Test and cull

- Suitable for low prevalence herds wanting to quickly remove infected animals from the herd BEFORE they get chance to spread Johne's
- Work with your vet to adopt a culling policy in addition to the steps above.



4. Improved Farm Management, Test and cull

Advantages

- Hassle free testing through milk recorded sample
- Regular monitoring allowing more accurate timely culling
- Ability to manage 90% of the herd normally

Disadvantages

- Requires milk recording or regular bleeding
- There is no gold standard test available, so false positives may be culled
- Need to mark and identify test positive cattle and calve in isolation from main herd

5. Breed to a terminal sire

- In herds where the level of infection means there is a high risk of transmission to youngstock
- Infection levels high in home bred replacements, so not advised
- Purchase replacements from lower risk herds
- Breed all cows to terminal sire until infection controlled

6. Firebreak vaccination

- A short term option for high risk or high prevalence herds to buy some time
- Delays the onset of clinical signs but does not eliminate excretion of MAP
- Vaccinated animals will test positive
 - May make selling animals more difficult
 - Makes interpretation of tests difficult
- Cross reacts with bTB test and increases possibility of false positive bTB reactors
- Vaccinated stock should be viewed as infected rather than free of disease

Control

- Has to be a team approach.
- All staff need to know policies and understand importance
- Educate
- Revisit – don't assume it's all working fine



A Case Study Paraban Champion Farm Chalk Lodge

A Responsible
Approach to
Johne's Control



J ACTION HNE'S

Johnes' disease history -before 2014

- Restocked 2001 post FMD
- 3 main herds bought
- Started seeing clinical cases 2004
- Incidence increased to 1 per month
- Commercial herd increasing size to 680+ (2015)
- 2008 - Opportunity to bleed whole herd as part of an SAC BVD study
- Joined PCHS 2010

Cows Bled Annually since 2008 and Identified



New Calf Shed and Pasteuriser – 2009



New calving pens built - 2011



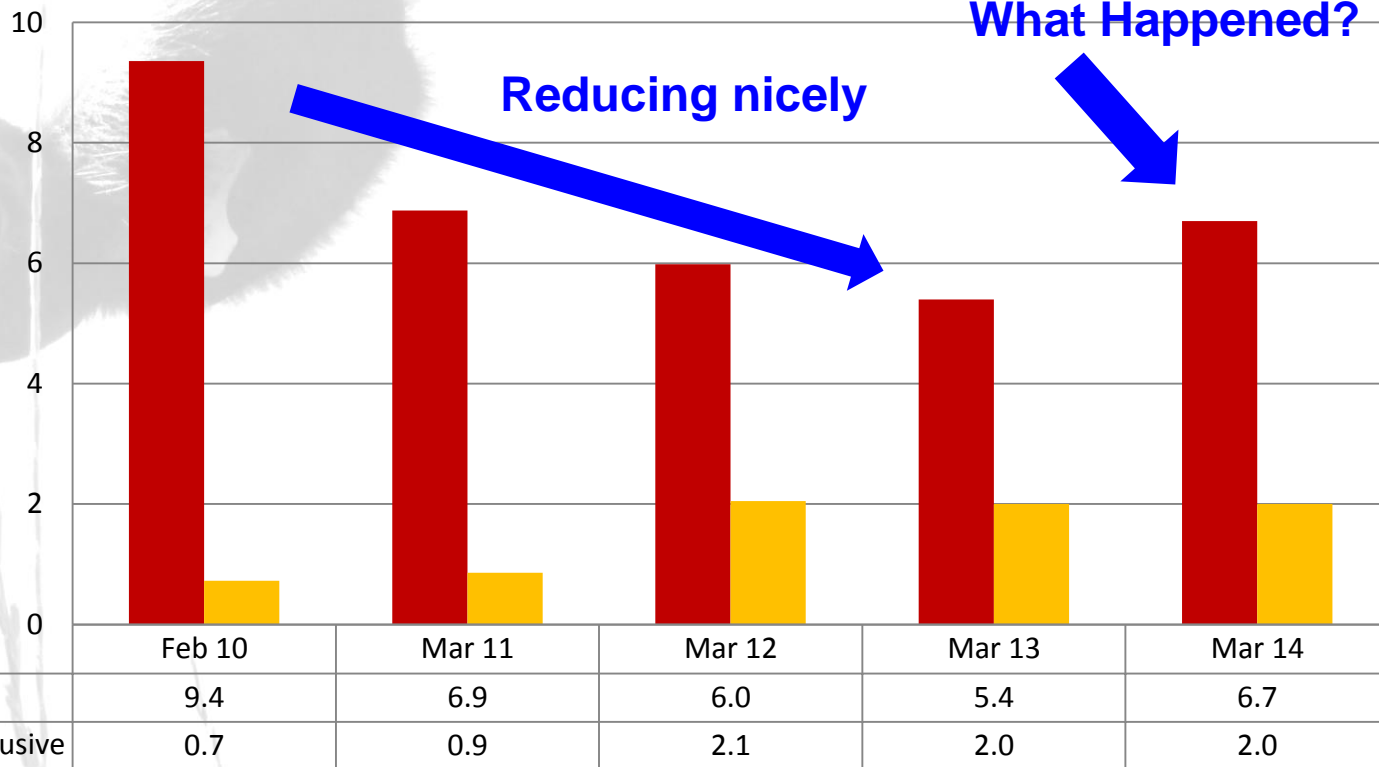
Whole herd blood test results

Chalk Lodge

What Happened?

Reducing nicely

% of animals sampled

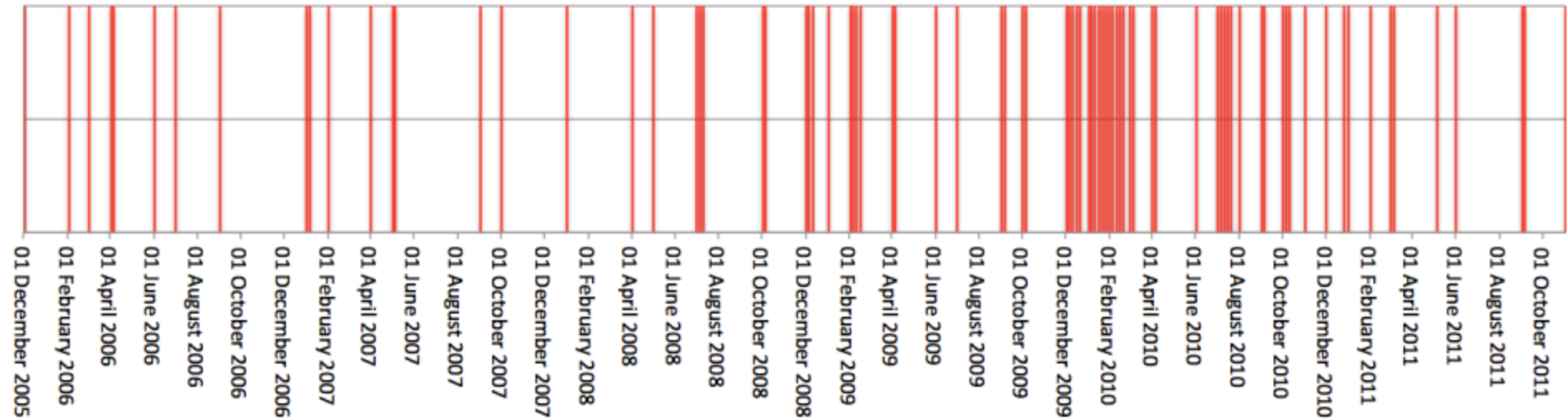


No Homebred +ve	23	24	20	28	35
Average Age +ve	4yrs 7mo	4yrs 11mo	5yrs 7mo	4yrs 7mo	4yrs 6mo

There was a cluster of animals infected

20 Animals

■ Positive 2013 + 2014



Key Messages from a Farmer

- It is a challenging & frustrating disease because
 - The immune response and tests are not perfect
 - Events 3+ years ago affect outcomes
 - It is an iceberg disease – only see the tip
 - It is hard to keep motivating staff
- Attention to detail needed but some quick wins
- Eradication in expanding commercial herd unlikely
- Farmers must know and monitor their status
- Everyone in the industry has to be responsible

Johne's disease often remains hidden for years, but outbreaks have devastating effects on individual animals or entire populations. Neil Ryder speaks with vet David Black and farmer Mike Bowe who believe the disease can only be brought under control by an industry-wide approach.



David Black (left), surgeon from Paragon Veterinary Group and Mike Bowe, Chalk Lodge farmer.

For far too long, many in the industry have effectively turned a blind eye to the problem of Johne's disease in cattle, fearing recognition of the threat will prejudice stock sales.

But veterinary surgeon David Black of Paragon Veterinary Group in Dalston, Carlisle, and

dairy farmer Mike Bowe of Chalk Lodge, Dalston, say it is time for vets, farmers, auctioneers, dealers and breed societies to make a concerted effort to understand more about the prevalence, spread and risks of this disease.

Mr Black and Mr Bowe are working closely together to

control the incidence of Johne's in Mr Bowe's 600-cow dairy enterprise. They are also teaming up to highlight the wider need for Johne's control.

They say while the very nature of the disease means eradication is very challenging, an industry-wide approach can greatly reduce incidence of the

disease and transmission risk between individual animals and between herds.

Mr Black says much of this is simple risk management aimed at breaking the chain of transmission by which Johne's can move between animals and especially protecting young calves from infectious materials.

Mr Bowe is the fourth generation of his family to hold the tenancy of Chalk Lodge and with his son and daughter 'mad about farming', there is every likelihood of a fifth generation.

Stock at the farm comprises 600 milkers and 500 followers (including calves), which are all Holstein and about 90 per cent pedigree.

Agricultural sector needs to work together to tackle Johne's disease

“If a young calf is infected with Johne's, it will usually show little sign”
DAVID BLACK

with all suitable heifers retained as herd replacements. Some additional heifers are bought-in.

Mr Bowe says: "We used to have the big, tall type of Holstein,

"Up until about this time last year we averaged about 9,500 litres per cow, but because of high feed costs, this dropped back to the present 8,250 litres at 4 per cent fat and 3.3 per cent protein. We do not push the cows and this is really a relatively low input, low output system.

"Feeding is a mix of barrier fed forage out of parlour feeders and feeding to yield in the 28:56 swingover parlour."

Calving interval

Fertility is currently very good. The submission rate of 66 per cent and pregnancy rate of 24 per cent, have culminated in a falling calving interval. This is predicted to be 385 days for this year.

J ACTION HNE'S

Key Messages to Control Johne's Disease

- Know Your Status
- Break The Link
- Agree a Strategy with your Vet
- Predict and Prevent Infection

www.actionjohnesuk.org

J ACTION HNE'S



Can you spot the

Know your Johne's status how to control it

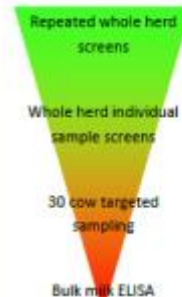
Johne's Disease is a chronic, debilitating and irreversible infection of cattle which is common in many herds. While as few as 1 to 5% of cows in any year will show clinical signs of scour or wasting, more of the herd will nevertheless be affected and suffer reduced output. Animals with Johne's Disease are likely to be culled earlier, and are also likely to be affected by other conditions, including chronic mastitis, lameness, and high somatic cell counts.

Work with your vet to assess infection risk and know your herd Johne's Disease status

Johne's Disease is complex and expert veterinary advice is vital to make sure you take the most cost effective steps towards managing the infection in your herd.

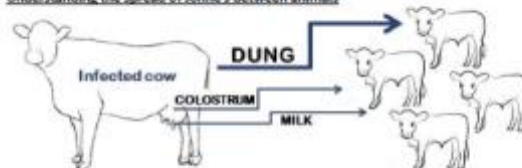
Work with your vet to carry out a risk assessment as part of your herd health plan. It is important to note that while 1/3 of dairy herds do not have Johne's Disease present on their farms they still need a robust plan in place to keep it out.

Testing will help determine your herd's Johne's Disease status: the more samples you take, the more accurate will be the indication of your herd's Johne's Disease status. A popular method of initial Johne's Disease screening is the targeted 30 cow screen using blood or milk from cows over 3 years of age with histories of poor yield, weight loss, or high somatic cell counts. Unlike other diseases, bulk milk testing is not sensitive enough to detect infection at the early stage of infection. If your risks of Johne's Disease are high it is important that you reduce them by adopting an effective control programme and monitor carefully for infection within your herd.



The more frequent the testing, the better the understanding of Johne's Disease

Understanding the spread of Johne's between animals



Johne's infection is mainly caused by calves ingesting dung through contaminated bedding, udders, teats or on dirty buckets of colostrum or milk. Much less commonly the disease can be acquired in the womb or later in life.

80% of Johne's infections occur within the first month of life

www.actionjohnesuk.org

Johne's Disease

Remember:

Be realistic about the timescale and what you can achieve: even when positive steps are fully implemented it can take 4-5 years to see significant progress to Johne's Disease control on farm – but the improvements in your herd's general health will be worth the steps you take and will be evident much more quickly.

Events over 3 years ago affect Johne's outcomes today. It is important that all staff understand how this disease works and how they can manage it on farm. A series of targets will help keep a sense of achievement as you progress with managing Johne's disease on your farm.

Case study:

Case: Chalk Lodge Farm
Chalk Lodge Farm is a 800 Holstein Friesian herd in Cumbria on zero. Having re-tested his herd in 2001 from 3 ounces post PMD, started to see clinical cases emerge in 2006, with incidences rising to one per month.

He got the opportunity to bleed his whole herd as part of an ID study, which also enabled the identification of positives for Johne's. Working with his vet as part of the 'Paraban' project, identified and implemented a risk based control strategy.

Measures:
ew calf shed built in Autumn 2008
ew pasteuriser purchased in Spring 2009
calves snatched at birth especially heifer calves
calves fed dam's colostrum if Johne's low risk, or fed from another Johne's Disease low risk cow, then fed pasteurized colostrum for the next 36 hours
ew calving pens built in August 2011
animals put into risk groups and managed according to risk (from immediate culling of high risk animals to observation of animals in a negative blood test)

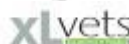
Using a thorough Johne's control programme with his vet, the herd health at Chalk Farm has greatly improved. There have been no clinical cases for the past 2 years and positive animals are while they still have value. All farm staff have a clear understanding of what to do and how to do it. The team are very aware of bought in and vaccinated animals.

© Pearson Education Inc. All rights reserved. Developed by SRUC Epidemiology & Prevention & funded by Quality Meat Scotland and the Scottish Funding Council.

an Johne's is supported by the following organisations (please also see our website):



www.actionjohnesuk.org



J ACTION HNE'S