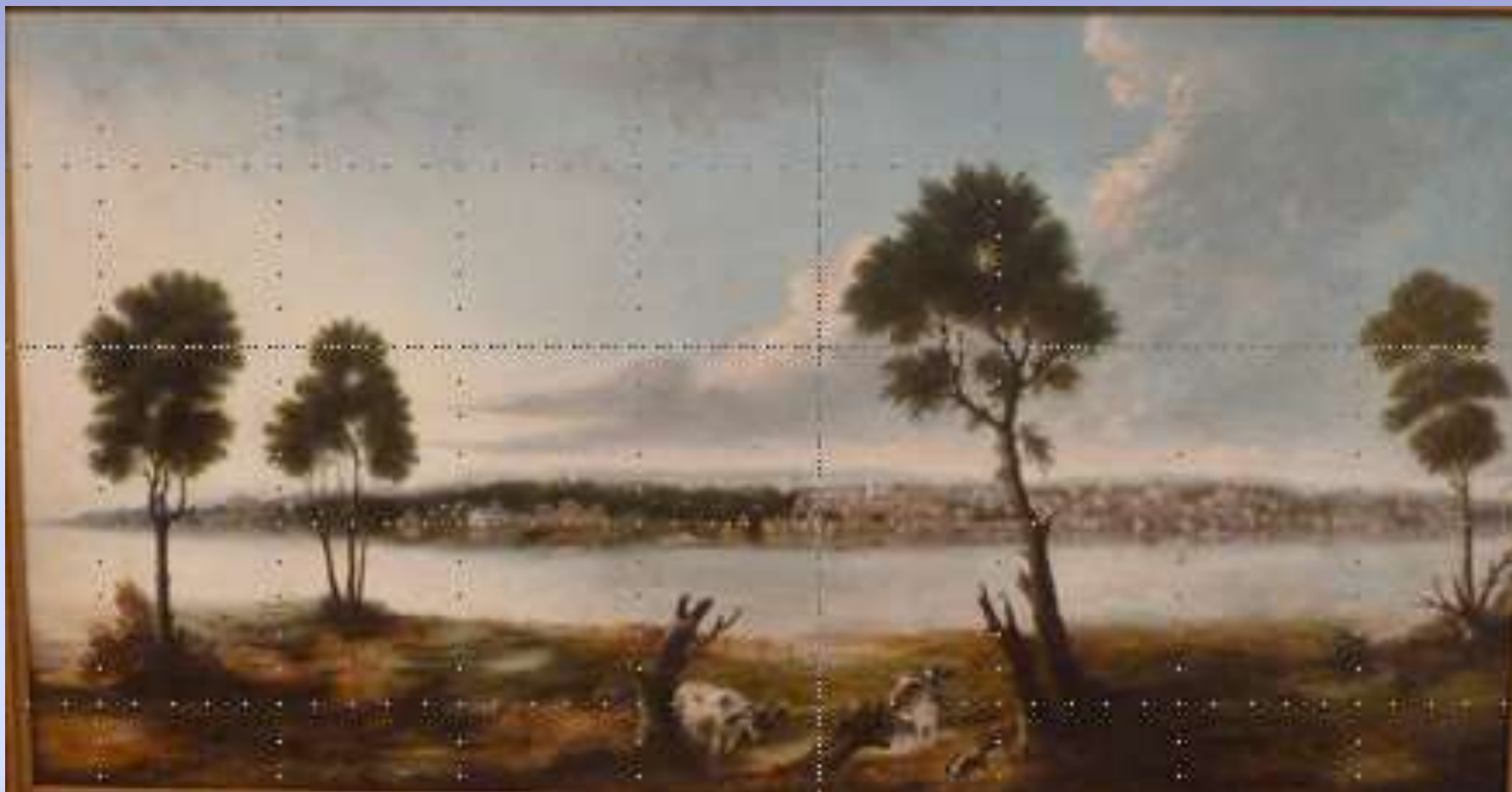


Incorporating Johne's programs into Bovine Practice UK style

Peter Orpin BVSc MRCVS

Dick Sibley BVSc HonFRCVS

Toronto 1850



Johne's risks even existed in 1850!



What are the Johne's risks?



1917 Ontario Cow- low risk,
extensively grazed and only one cow!



Early Johne's control UK style.....

© East Isley Local History Society



The Johne's Epidemic 1990-2008



INSIDE TODAY'S NEW-LOOK SECTION TWO

The making of the modern girl

Children and TV: the facts

Part 2: Look, she's got infomercials

PLUS: 24-page Sport section

INDEPENDENT

CLASSIC FILM COLLECTION

Get the video of The Grifters for £11.00 when you buy next Saturday's Independent

page 10

The question is not whether we burn cattle, but how many and how soon



To the slaughter: Calves bred for the dairy herds, then meat. Photograph: David Sanderson

The Government stands on the edge of an abyss in public confidence. This is not just a question of measuring the immediate threat to public health, nor the fate of farmers and butchers. The BSE affliction is in danger of contaminating the British body politic.

A completely reliable, accurate account of the dangers posed to human health remains elusive. That, however, does not justify complacency. The risk of catastrophe is sufficiently large to justify bold mobilisation of all the Government's resources.

Consumers are beyond blind reassurance. We need the kind of honesty that accepts what we know is limited but on the basis of what we do know, here is a rescue plan that carries real conviction. This is a time for careful judgement but it is no time for irresponsible caution.

More than half the population is considering not buying beef, not because of panic, but because it seems the most sane course of action, on present information. If people do stop buying in large numbers, the industry is heading for a collapse that will rock everything from public finances to the shape of

the INDEPENDENT

rural England. Public policy needs to stay ahead, forecasting the need for compensation, incineration, waste disposal. The Government should announce a plan to accomplish two things.

One, in longer term, it is for restructuring the food and agricultural businesses. Consumer choice will probably effect radical change during the next few years. Government needs to play its part by, for example, replacing the Ministry of Agriculture, Fisheries and Food.

The other requirement is immediate: it involves removing from the food chain all cattle that may have eaten contaminated feed. If that means slaughtering all cattle that have not been grass-fed throughout their lives, so be it.

If, in practice, it means wholesale slaughter, is there now any alternative? The cattle are liable to end up being slaughtered, because no one wants to buy them. The consequences of widespread incineration of the herd are huge. The consequences of inaction could be calamitous.



In previous BSE scares cattle carcasses were burnt. Photograph: Pacemaker

Government considers slaughtering up to 4.5 million

April 20, 2008 NO. 4720

The SUNDAY POST

Price 55p (IRL 65p)



Page 30 Win a super gourmet weekend



Private life of the unknown Royals **Pages 12 & 13**

Now Sean Connery is backing Oor Wullie **Page 14**



Who'll be in Scotland's squad for Euro 96? **Page 48**



Prof Richard Lacey

Expert claims Britain could face half a million cases a year by 2015



Prof Peter Behan

New warning of CJD epidemic

Why women don't go for good-looking men
PETRONELLA WYATT: PAGE 11

Top tipsters: Tony Stafford and Marcus Armytage cross the winning line
PAGE 30

Elizabeth II
A FREE PICTORIAL HISTORY OF THE QUEEN
THIRD TOKEN PAGE 8

£150,000 Kavanagh vs. Challenge: Page 22

● New strain of CJD kills younger victims ● Ministers try to calm fears over children

Beef linked to brain disease

'Mad cow' risk to humans is admitted for first time

By Caroline Davies, George Jones, Roger Highfield and David Brown

THE Government admitted for the first time yesterday that mad cow disease might be passed to humans by eating beef. A new strain of Creutzfeldt-Jakob disease, the human form for which there is no cure, has been found in 10 people under the age of 42, seven of whom have died. The "most likely" cause of these cases was exposure to BSE before certain types of offal were banned in 1989.

Doctors who discovered the new strain of the brain disease said that they could not predict the number of possible new cases. CJD can take between 10 to 50 years to emerge after infection.

With fears that younger people could be particularly at risk, Stephen Dorrell, the Health Secretary, announced an emergency meeting this weekend to draw up advice for parents on whether children should continue to eat beef products.

The Government also set up a free telephone line carrying a recorded message from Sir Kenneth Calman,

INSIDE

- Scientists' fears Page 4
- The victims: Page 5
- Too soon to panic Page 14
- Editorial Comment Page 15

Mr Hogg said that, with immediate effect, all carcasses of cattle aged under 30 months must be de-boned in licensed plants supervised by the Meat Hygiene Service

all were aged under 42. There are two other unconfirmed cases. The average age of CJD victims until now has been 65.

Prof John Pattison, the chairman of the spongiform encephalopathy advisory committee (SEAC), a group of Government medical advisers, said: "We appear to have something new happening in the 1990s which would have had its origins in an exposure in the middle to late 1980s."

One possibility was that only more susceptible individuals had succumbed, so that there could be an



Report too late, says family of coma girl

By Tom Leonard

THE grandmother of a teenage victim of Creutzfeldt-Jakob disease attacked the Government yesterday for not revealing earlier the possible link to beef products.

Vicky Rimmer, 18, a former beauty girl from The Wirral, was the first teenager to contract the disease — in 1994 — and has been in a deep coma since.

Her grandmother, Beryl Rimmer, who raised Vicky in Heswall, Merseyside, has consistently claimed that she contracted CJD from eating beefburgers.

"I want to know why a teenager full of life can suddenly be reduced to this," she said yesterday.

"I've been called a liar and looked upon as some kind of trouble-maker but hopefully at last people will be told the



Supermarkets review policy

Beef industry faces ruin as bans spread

By CHARLES BREMNER IN BRUSSELS AND OUR POLITICAL STAFF

THE British beef industry was staring ruin in the face last night as the world brycon spread and the European Commission declared the unilateral bans by eleven EU countries legal.

As prices continued to plummet at cattle markets, the Consumers' Association gave the starkest warning yet to stop eating beef and supermarkets urgently reviewed buying and labelling policies.

MPs alarmed by the fallout from the admission that "mad cow" disease might have been caused fatal brain illnesses in people have set up an inquiry into the handling of the affair and summoned ministers to give evidence next week.

to close their borders to British beef and cattle.

Eleven EC states have now done so and they were joined yesterday by South Africa — Britain's second biggest market after France — New Zealand, Switzerland and Singapore, among others.

On Thursday, the Commission had said that the EU bans were illegal, but in a sharp change of tune yesterday it said that the countries had responded to a legitimate concern over public health. That view was backed by the Commission President, Jacques Santer, whose spokesman said: "It's much more than a legal question. This is a very important public health ques-

tion. There was no evidence that "mad cow" disease could be transmitted to people, but said there was a need to review whether existing safeguards were adequate.

The Commission had earlier insisted that it would not be rushed to action, saying: "We are obviously at the peak of the reaction, so there should be no rash decisions." But officials acknowledged that pressure for radical measures was so great that the Agriculture Commissioner Franz Fischler was virtually obliged to agree.

Herr Fischler will have to weigh up delicate political factors in reaching his decision. He will have to consider not only the scientific advice

WEEKEND
Trouble at
the nudist
camp



MAGAZINE
The Prime
of Ms Susan
Sarandon



HOLLYWOOD
CHOICE
TODAY ONE: ARTS & BOOKS

In your great Saturday Telegraph: Magazine, Arts & Books, Weekend, Business, Motor

Slaughter of 'mad cow' herds urged

No evidence of human link, say EU vets as ban on British beef spreads

By Robert Shrimley and David Brown, and Toby Helm and Helen Cranford in Brussels

EUROPEAN scientists called last night for the slaughter of hundreds of thousands of British cattle to stamp out mad cow disease. While backing British Government claims that there was no clear evidence

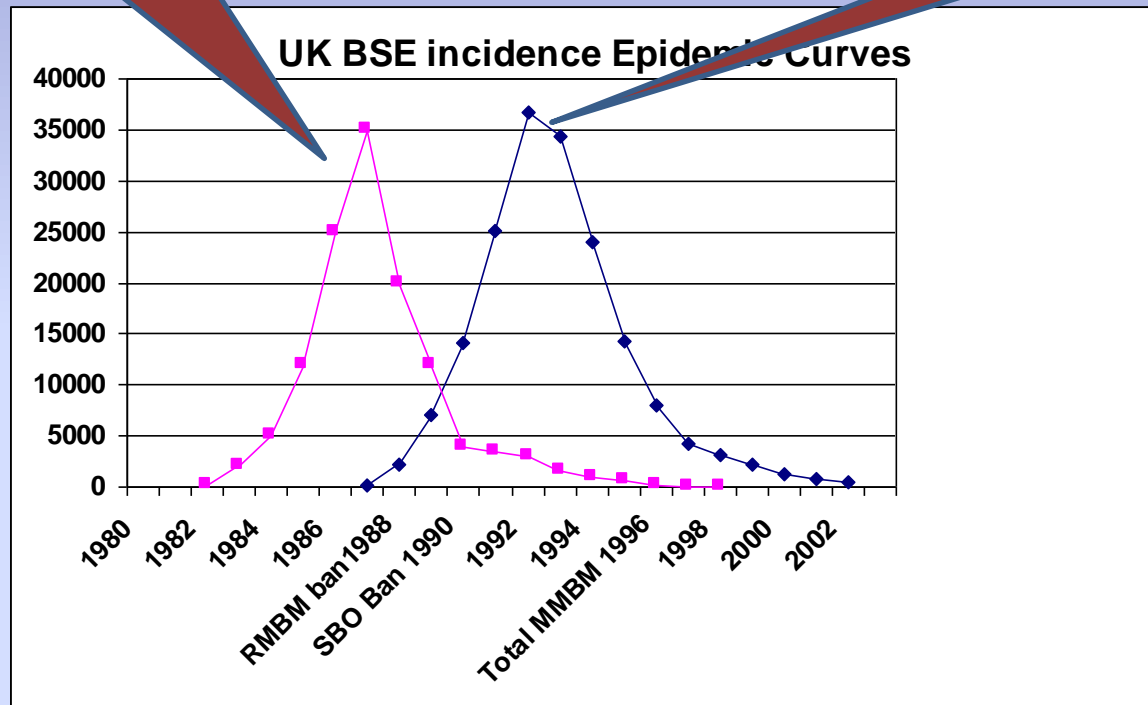
Dunblane pupils put 'long, dark w



BSE Epidemic- peaked at 36,000 per year

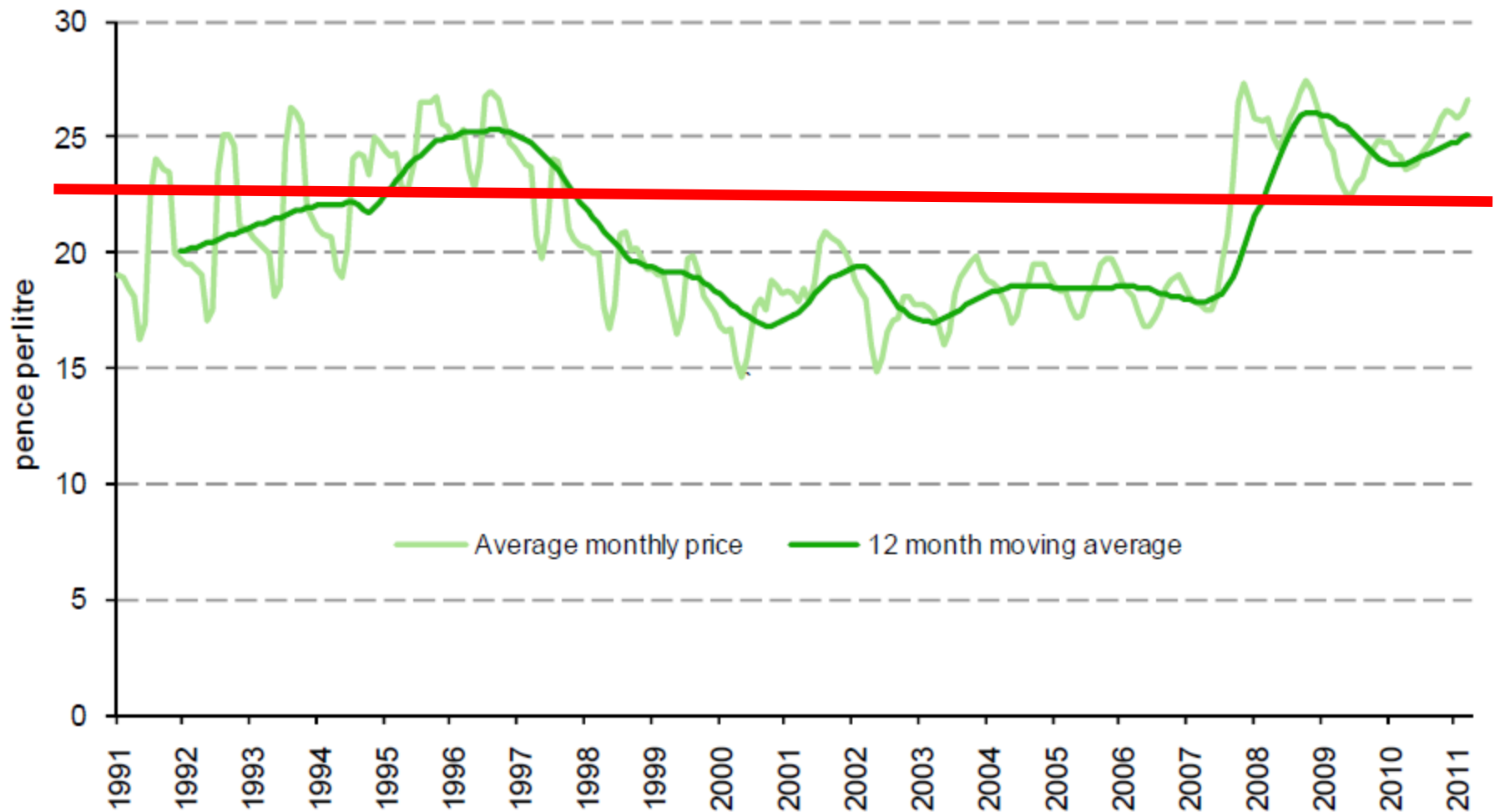
Peak period of infection as calves

Peak clinical incidence



Infection was controlled using management of known risk factors without use of a test in live animals

Chart 1: Farm-gate milk prices, Jan 1991 to Mar 2011
(monthly data including bonus payments)

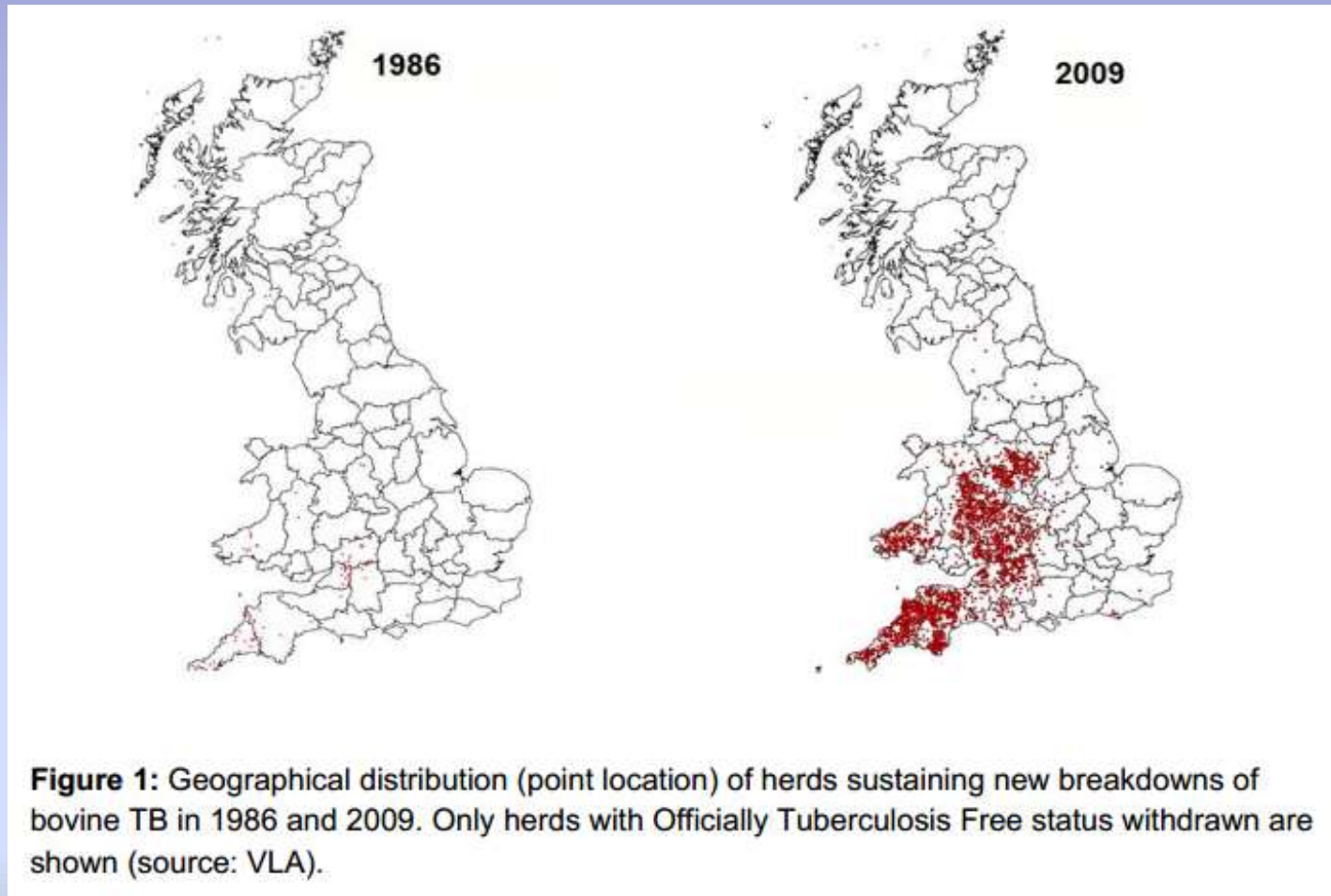


FMD 2001



685,000 cattle killed in
2 months

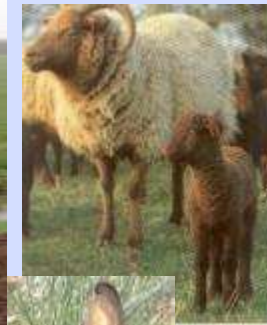
35,000 cattle per year culled due to TB controls



1986

2009

Increased risk of disease entry(biosecurity)



Purchase of “carrier” cattle

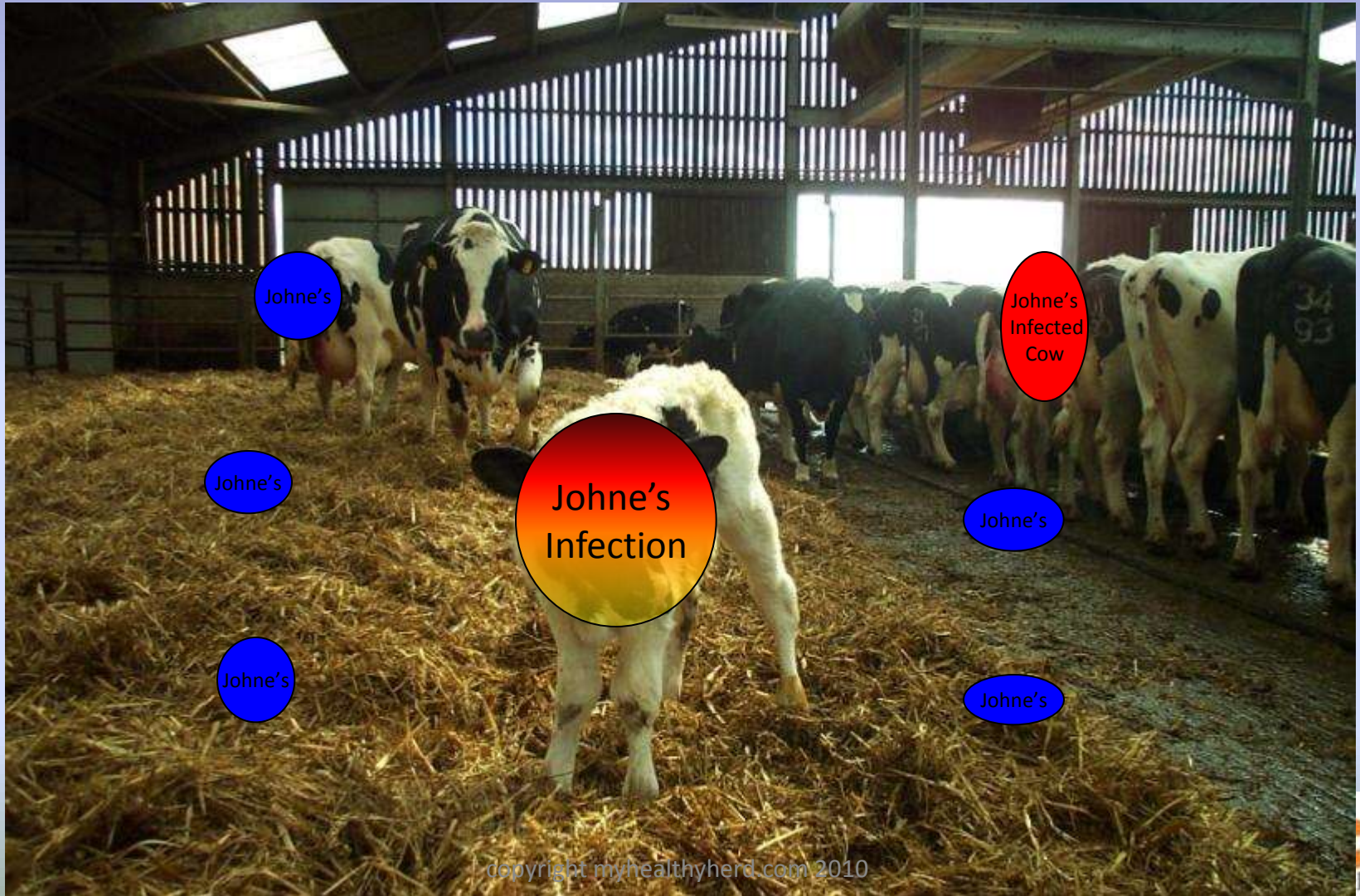
Slurry from other farms

Faeces contaminated water from neighbours' farms

Sheep

Rabbits?

Increased risk of spread Communal maternity pens



“Inoculation points”- the calving pen



copyright myhealthyherd.com 2010

Inoculation points: Feeding pooled colostrum and waste milk to heifer calves



Source: Dick Sibley myhealthyherd.com

copyright myhealthyherd.com 2010



myhealthyherd.com

The Johne's replicator!



Johne's: the clinical case...



Source: Peter Orpin, MyHealthyHerd.com

copyright



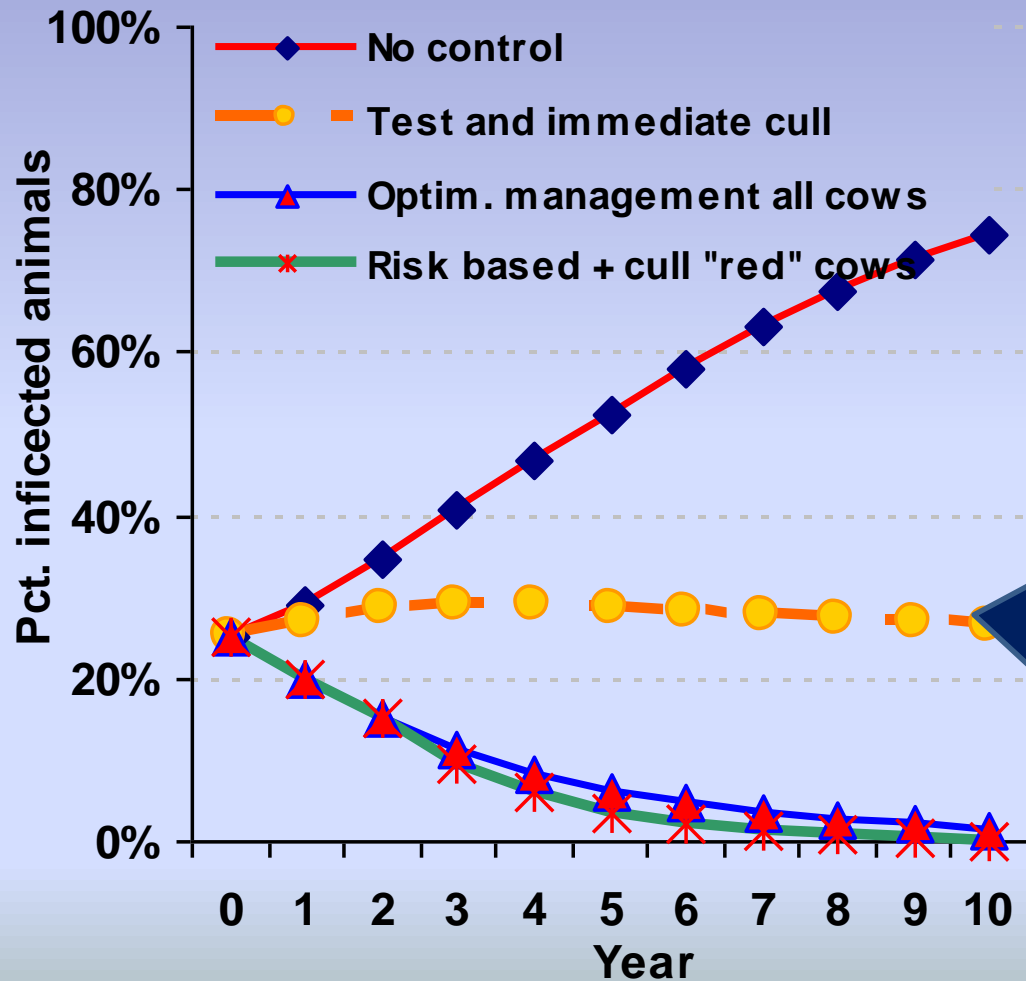
Our only control strategy!

“Test and Cull”

- National surveillance program (CHeCs)
- Rigid rules
- Annual whole herd test
- Cull positive animals
- No supporting risk management program
- Very little uptake.
Culling unpopular



Within herd spread of MAP



Test and cull alone will not control the disease. Risk management is crucial for success



...so what were the barriers to
overcome...

Cattle health- What is the weakest link?



Cattle



Data



Vet



Disease



Time

Finance



Farmers

Cow comfort



Farmer: Vet interaction



- **Knowledge**
- Enthusiasm
- Communication
- **Health Management**
- Client bonding
- **Right fee structures**

- **Aspiration**
- **Resources**
- **Relationship with vet**
- Clarity of direction
- Consistency
- Motivation

Knowledge and confusion

- **Confusion re blood and milk testing**
- Lab rivalry and discord
- Misunderstandings re the routes of infection
- **Lack of structured approach to infectious disease control**
- Limited understanding of control strategies!

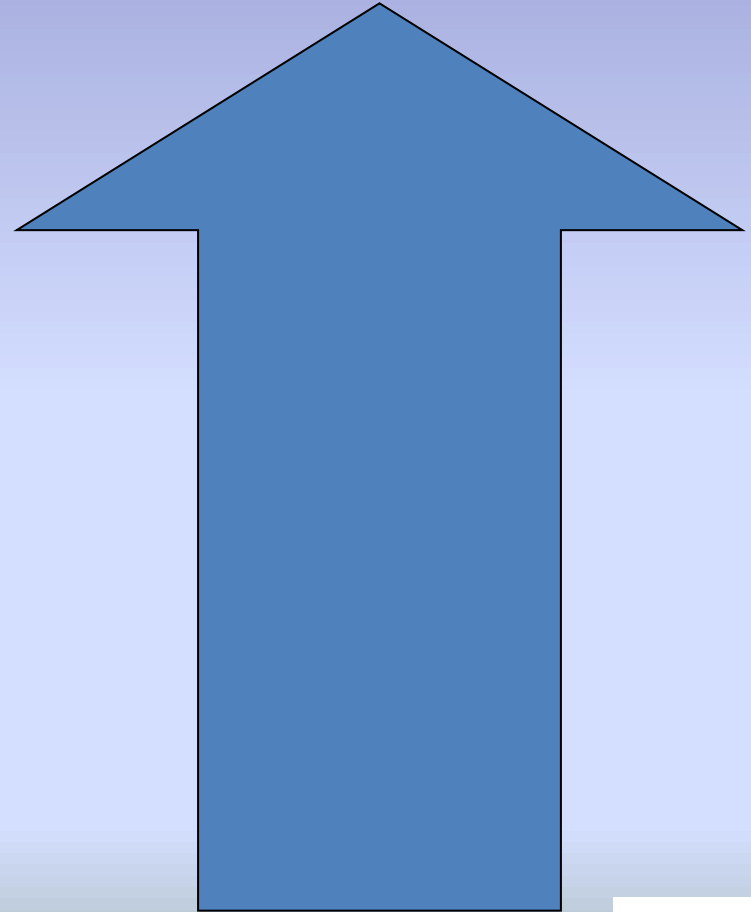


Objectives for infectious disease management

Freedom from disease

Control of disease

Tolerance of disease



Objectives for infectious disease management

Freedom from disease

No pathogen

No active disease

Minimal risks of disease

Control of disease

Presence of pathogen

Minimise risks of infection

Minimise impacts of infection

Aspire to freedom

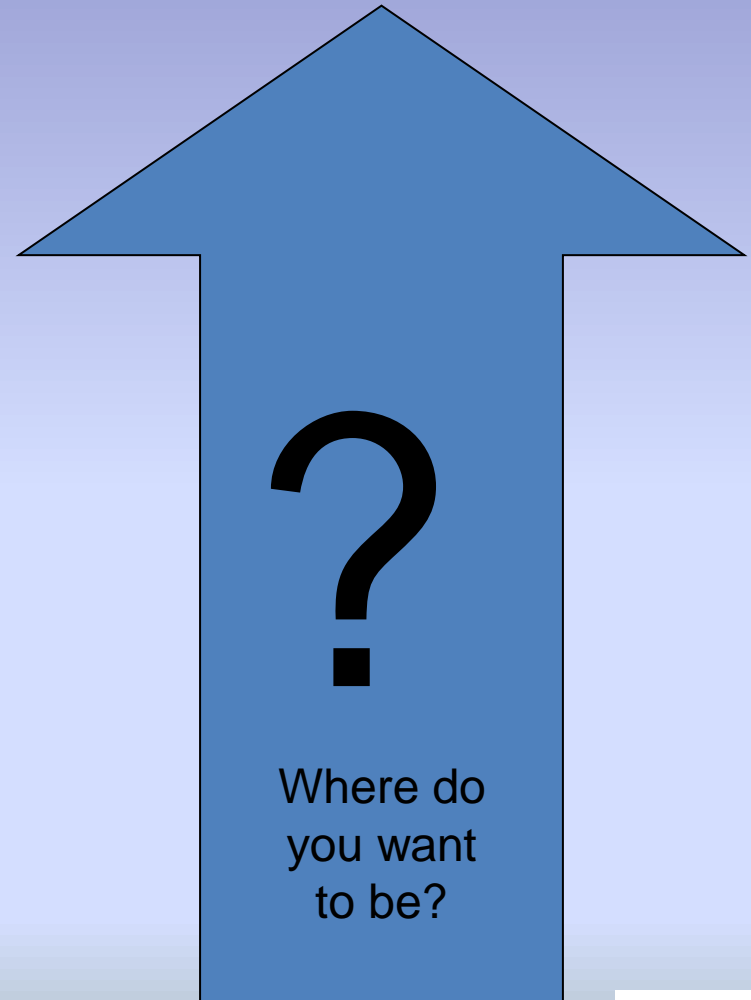
Tolerance of disease

Pathogen present and active

Risks of disease significant

Disease impacting on health

Control not a high priority



Objectives for infectious disease management

Freedom from disease

No pathogen

No active disease

Minimal risks of disease

Control of disease

Presence of pathogen

Minimise risks of infection

Minimise impacts of infection

Aspire to freedom

Tolerance of disease

Pathogen present and active

Risks of disease significant

Disease impacting on health

Control not a high priority

- What are you trying to achieve?
- Agree an objective based on:
 - Priorities
 - Resources
 - Risks
 - Impacts

“Aim to get test prevalence less than 1%”

Michael Collins

Infectious Disease Principles- the four pillars (Dick Sibley)

Disease status of the herd

Biosecurity

Surveillance

Resistance /
immunity

Control in the
herd

The failed Bovine Tb eradication scheme impacted on the JD program

BTb

Disease status of the herd

Surveillance

Biosecurity

Resistance /
immunity

Control
in the
herd

The success of surveillance! BTb New incident breakdown

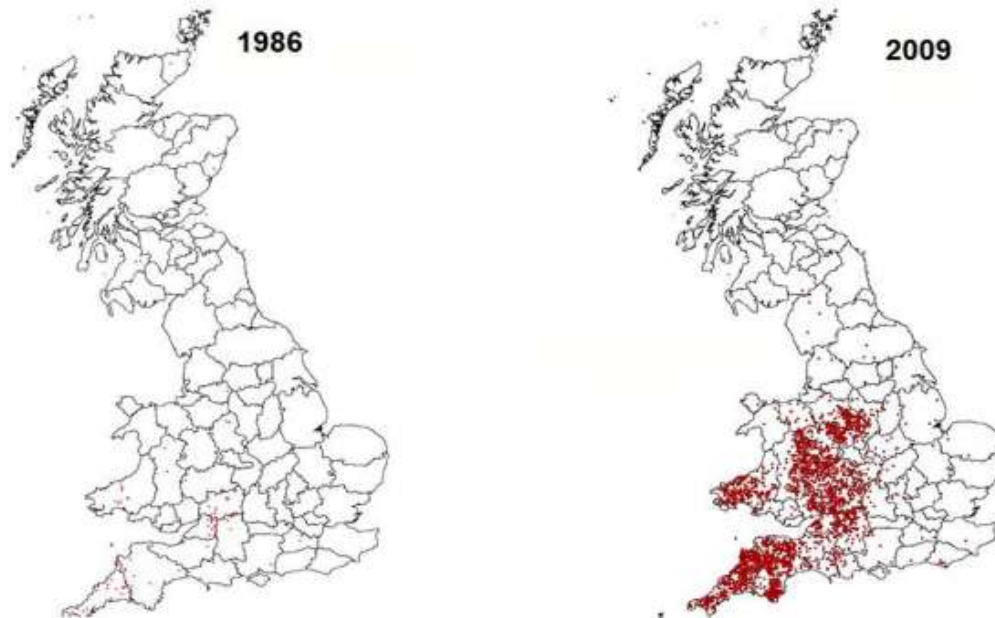


Figure 1: Geographical distribution (point location) of herds sustaining new breakdowns of bovine TB in 1986 and 2009. Only herds with Officially Tuberculosis Free status withdrawn are shown (source: VLA).

Simply strengthening surveillance alone will not control an infectious disease!

1986

2009

The reasons why the UK Johne's epidemic occurred.....

Johne's?

Disease status of the herd

Biosecurity

Surveillance

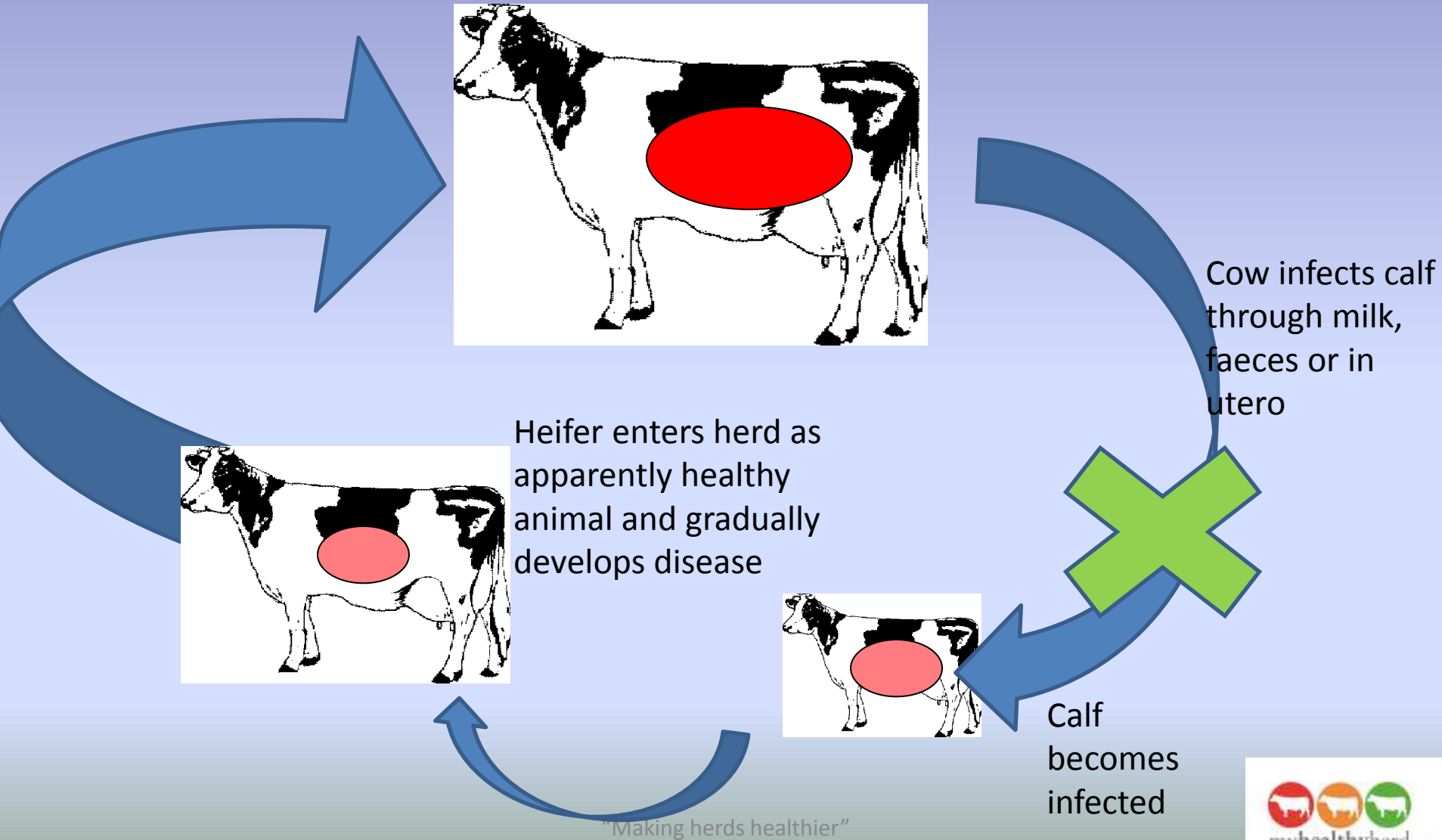
Resistance /
immunity

Control
in the
herd

Infectious Disease control- preventive approaches

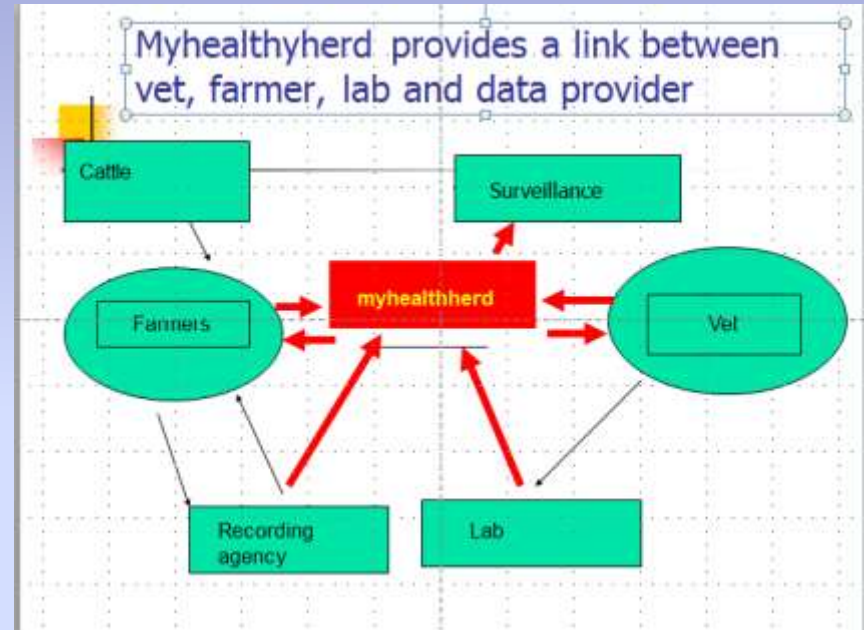
- REDUCING THE RISKS of infections spreading within or between populations by manipulating management, housing and immunity to ensure the “R” or reproductive value is less than 1.
- Reducing the NEW INFECTION RATE by RISK MANAGEMENT is the key to success.
- **Johne’s control is not about just culling cows!**

Breaking the Johne's Cycle



Development of Myhealthyherd (2006)

- Is there a better way?
- Could we adapt an infectious disease program which might work for all farms?
- How could we engage farmers and the industry?





myhealthyherd.com®

“Making herds healthier”



This is the vet's 'herd home' page. You can return to it using the 'home' icon above. For help click on the buttons or try [getting started](#). You are logged in as 'peter.orpin.le86lq' at the 'Park Vet Group' practice. Choose the farm and then the herd you wish to monitor. Click on the quick links or images to navigate.

Which one of your herds are you currently monitoring?

Farm:

Only favourites

[Search](#)

Herd:

Health evaluator

[Fertility](#)

[Udder health](#)

[Lameness](#)

[Metabolic / sick animals](#)

[Youngstock](#)

[Culling](#)

[Overview](#)

General biosecurity management

Cattle

People

Objects

[Health planning](#)

[Vaccination](#)

[Surveillance](#)

Quick links

Getting started

[View / print report](#)

[Herd / farmer details](#)

[View / enter vaccinations](#)

[Surveillance results](#)

[Health plan summary](#)

[Infectious disease](#)

[Admin \(vet\)](#)

[View / upload document](#)

Messages

[Send message](#)

Infectious disease management

	Disease risk status	Vaccine status	Surveillance status	Control /current status
BRD				
BVD				
Johne's				
IBR				
Lepto				
Neospora				
TB				

Johne's progress page



Progress with Johne's questionnaires:

<p>Disease entry risks from cattle</p>  <p>Red - high risks</p>	<p>Disease entry risks from people</p>  <p>Green - low risks</p>	<p>Disease entry risks from objects</p>  <p>Green - low risks</p>	<p>Disease entry risks from Johne's:</p>  <p>Amber - moderate risks</p>	<p>Disease spread risks from Johne's:</p>  <p>Amber - moderate risks</p>
Update View	Update View	Update View	Update View	Update View

Johne's continued:

<p>Biosecurity plan</p>  <p>Plan present</p>	<p>Vaccination status</p>  <p>Red - unvaccinated</p>	<p>Surveillance plan</p>  <p>Plan present</p>	<p>Disease control plan</p>  <p>Plan present</p>	<p>Disease prevalence</p>  <p>Higher</p>
Update View	Update View	Update View	Update View	Update View

Johne's recorded history:

Recent surveillance entries: 4	Update	View
Recent vaccination entries: 0	Update	View

Developing approaches to engage the farmer



Motivation and engagement



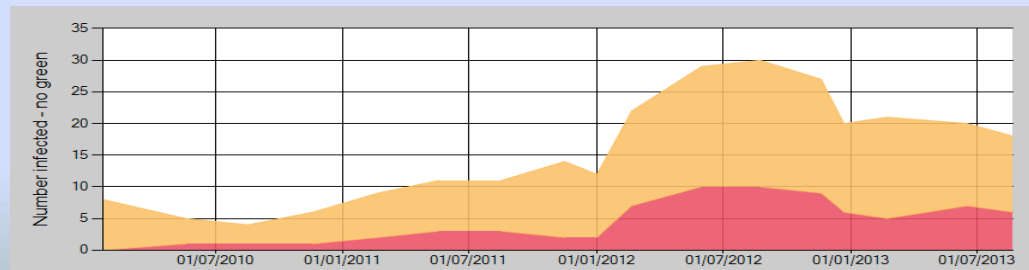
Make changes that improve health



Identify profit opportunities and set priorities for investment



Identify risks



Quantify progress

Johne's Engagement program

- Myhealthyherd was used as hub for engaging farmers in JD control via a private practices, milk processors, regional control schemes
- -3000 dairy herds have completed risk assessments to varying degrees
- Over 1800 herds are now using Risk Based Control (quarterly milk testing and management)



MANAGEMENT REPORT - HIGH RISK COWS

Producer Details MR JOHN COLLISHAW MALT HOUSE FARM PARTNERSHIP MALT HOUSE HECKLING	NMR Herd Number 04/70063/01	Scheme Commencement Date 01/01/2010	Number of High Risk Cows Present At Last Test 22	Page 1 of 2
--	---	---	--	------------------------

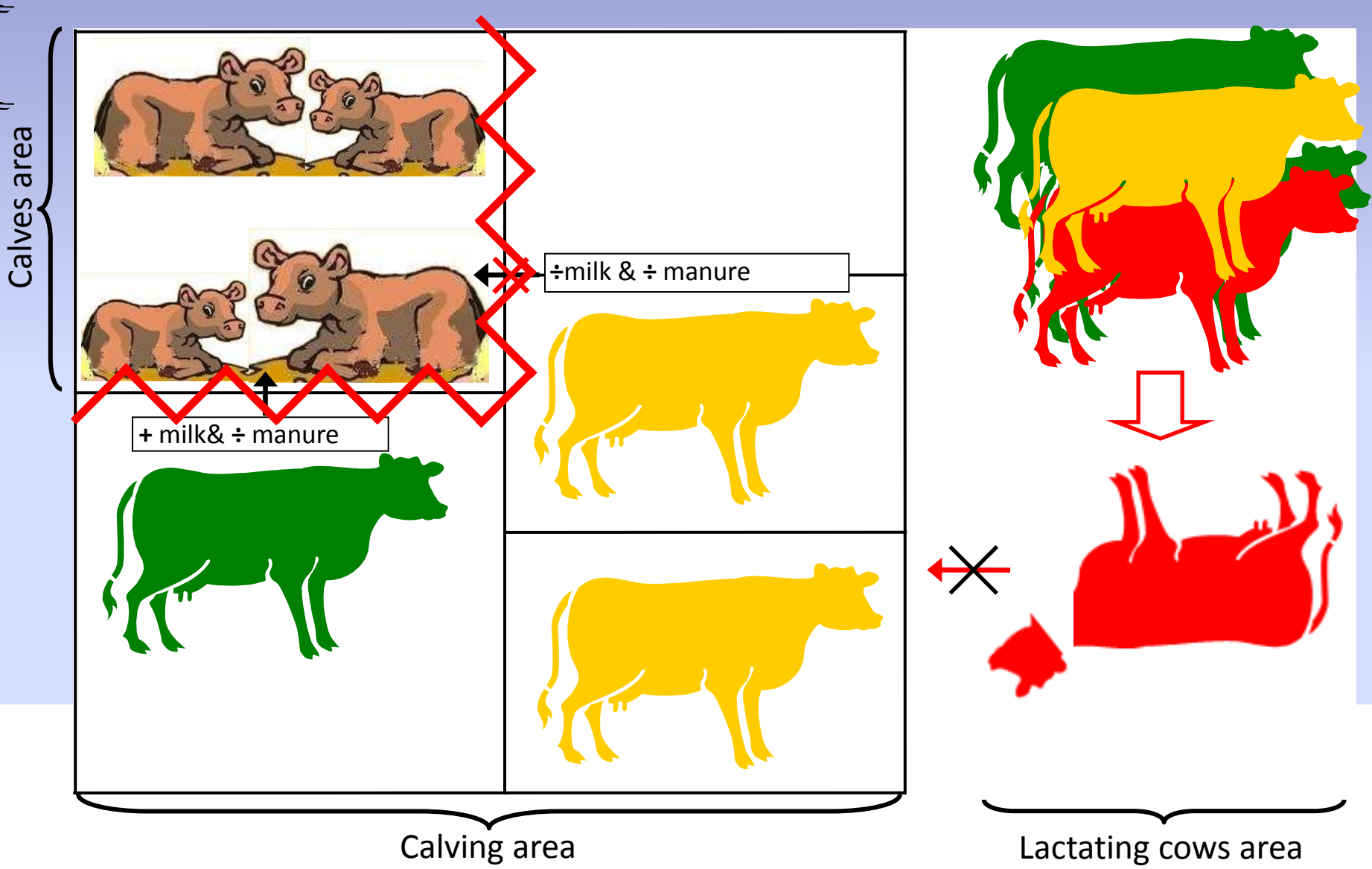
Results based on cows sampled on: (Only valid up to 4 months from specified sample date)

Line No.	Ear Tag	ELISA 18/11/2011	ELISA 28/02/2012	Days in Milk*	Milk Yield (kg)*	Parity	Milk Yield Drop	Predicted Calving Date	Infection Group on 28/02/2012	
29	145707200229	21.78	73.66	109	60.90	4	Very Likely	22/11/2012	J5	+
226	141349700226	32.19	46.96	248	21.60	7	Very Likely	25/06/2012	J5	+
415	145707500415	74.45	124.53	221	36.00	4	Very Likely	02/07/2012	J5	+
429	145707600429	107.01	96.83	177	20.30	4	Very Likely	21/08/2012	J5	+
498	220511100498	30.30	91.06	253	35.40	4	Very Likely	07/10/2012	J5	+
575	145707500575	62.35	127.40	266	14.50	2	Very Likely	05/07/2012	J5	+
741	145707300741	36.35	39.26	399	14.20	1	Very Likely	01/07/2012	J5	+
824	145707200824	187.10	153.80	244	20.00	1	Very Likely	17/08/2012	J5	+
307	145707300307	4.16	41.48	126	33.00	5	Likely	12/06/2012	J4	?
371	145707400371	4.16	56.61	394	14.40	4	Likely	18/05/2012	J4	?
474	145707200474	44.31	-	375	21.70	3	Likely	10/03/2012	J4	?

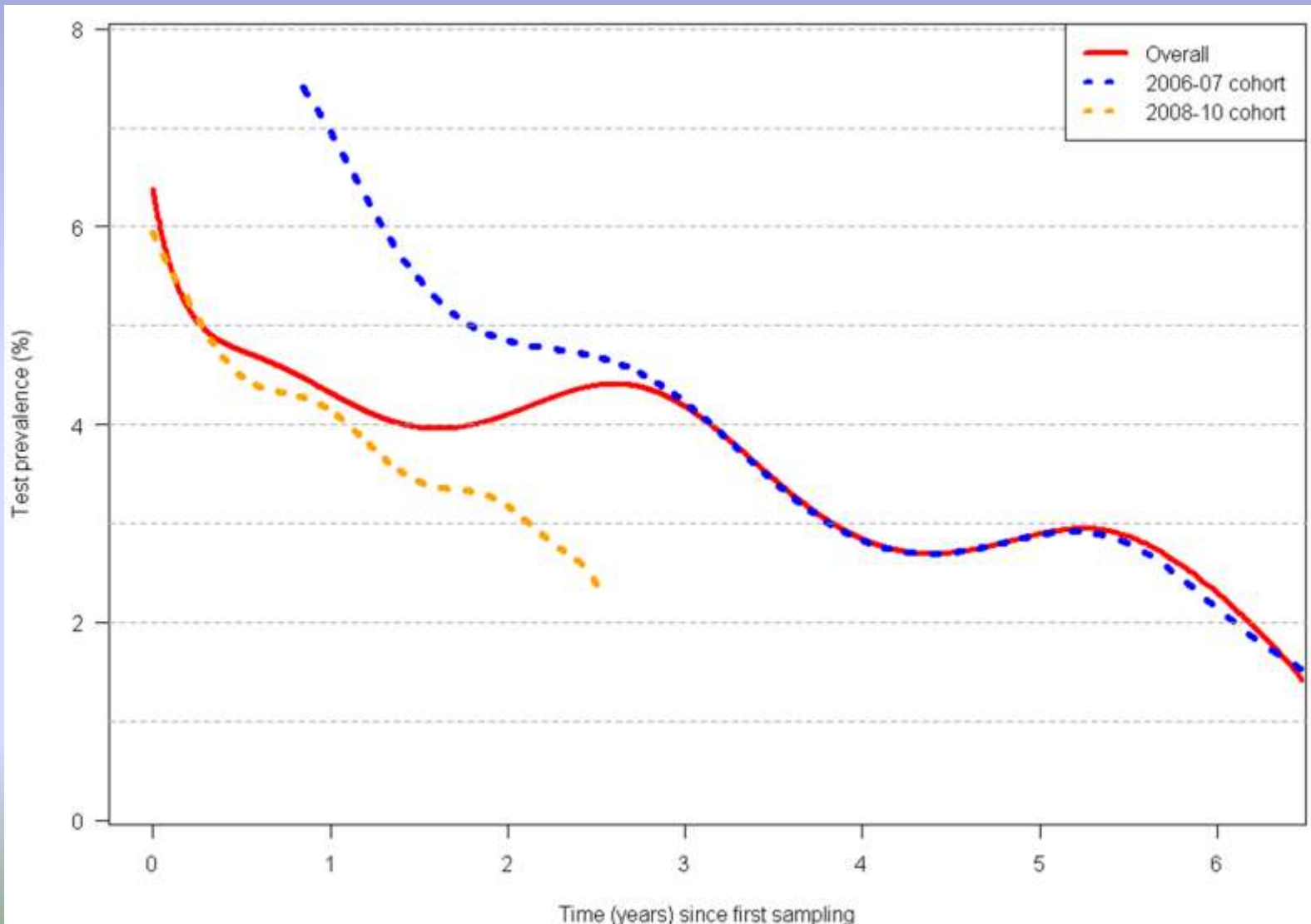
Quarterly milk testing revolutionised control Automatically collected at milk recording + web reporting and graphing

Use of diagnostics in practice

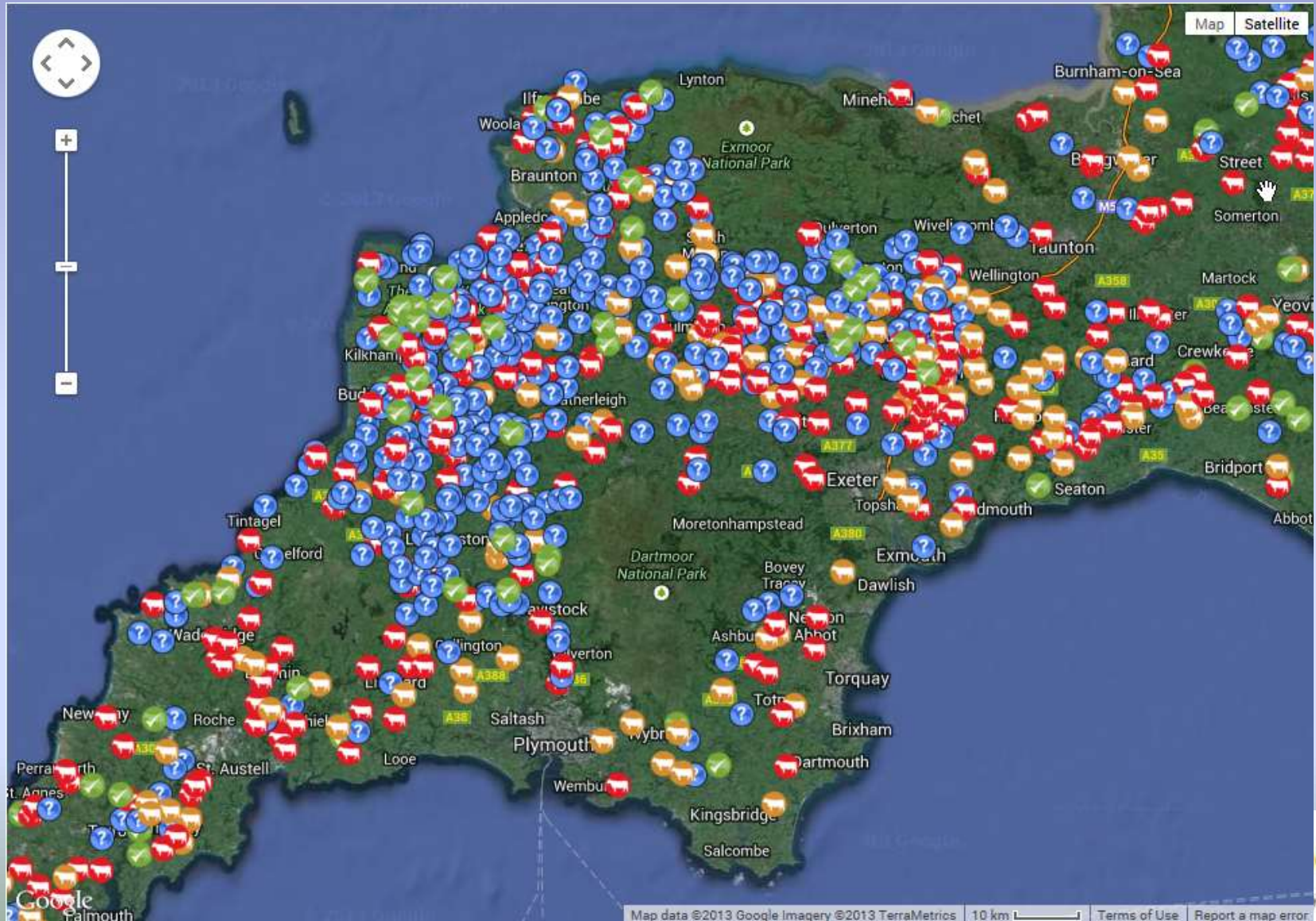
- *management at calvings and milk feeding*



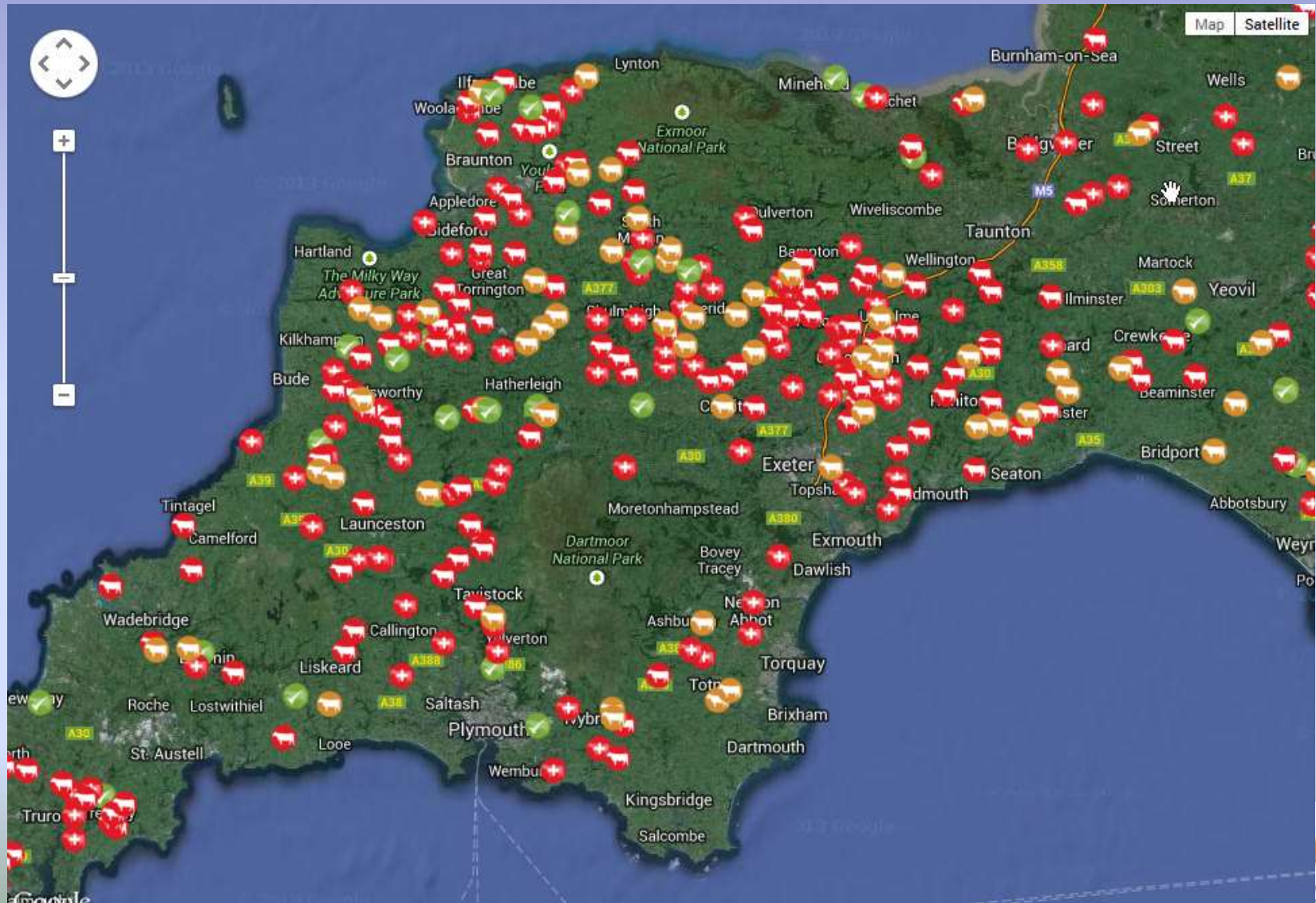
Success of the Danish Johne's program



Johne's biosecurity risks: Dairy herds including the unknowns



Johnes disease status: dairy herds



Johne's Top tips

UK experience

Educate the vets



Farmer motivation and on farm meetings

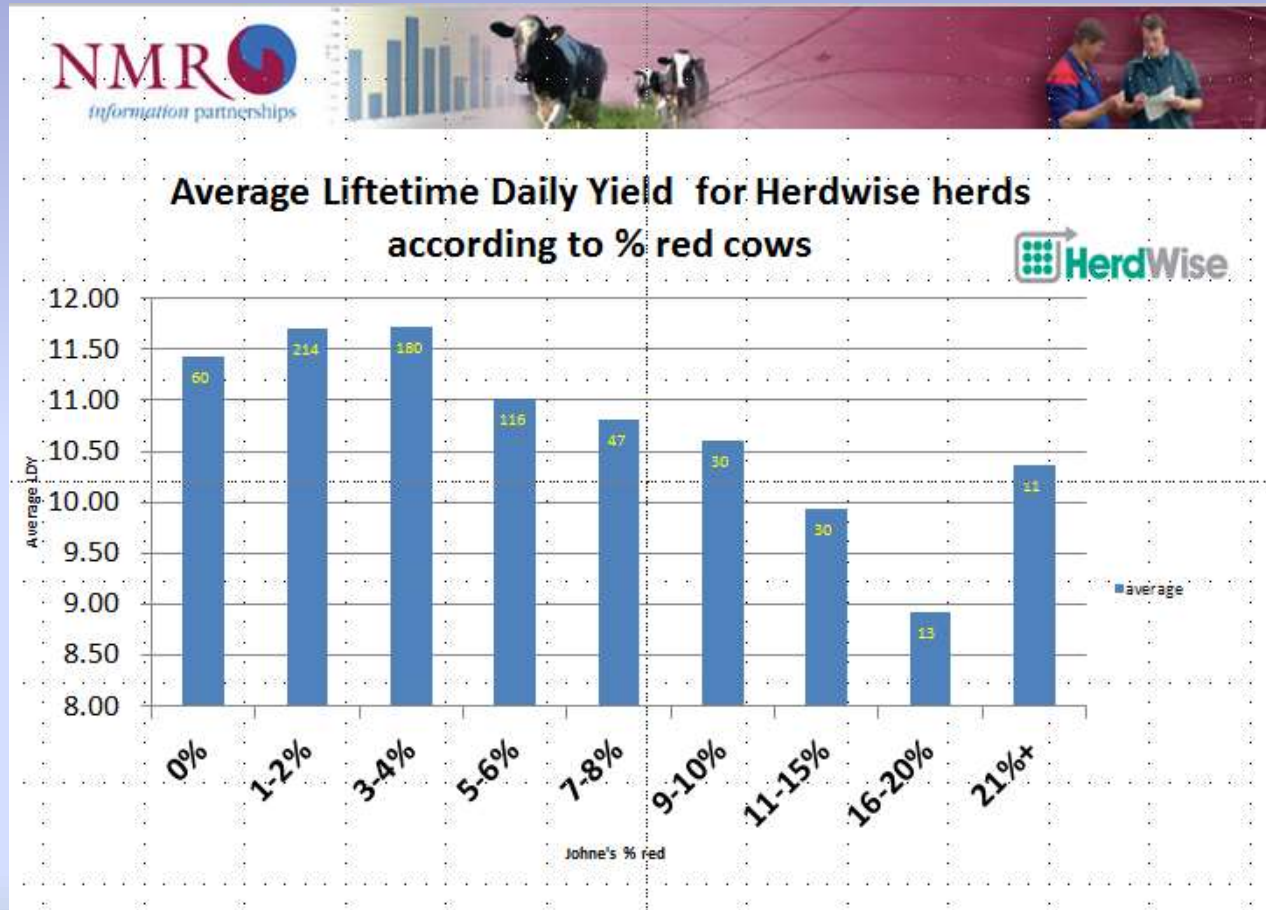


Use images and challenge perceptions

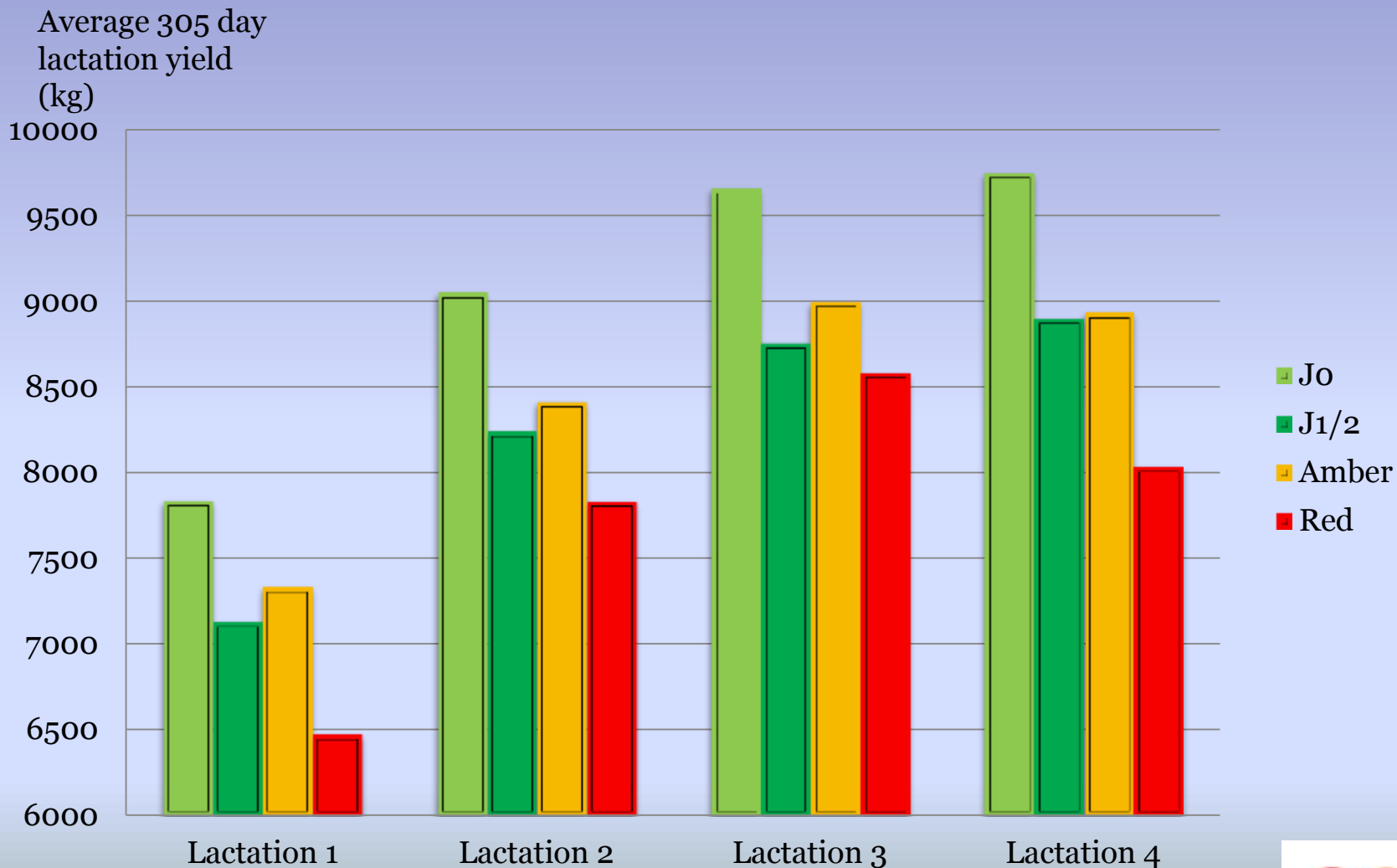
The typical UK pre clinical cow. Under diagnosed Cow culled due to high cell count, poor production prior to onset of clinical signs.



Illustrate the subclinical effects of JD



Average 305 day lactation yield for high, medium and low cows



Risk Assessments-Ask questions

- Where do you want to be in 5 years time?
- What impact do you think JD is having on your farm?
- How can we help protect the calf from infected faeces?

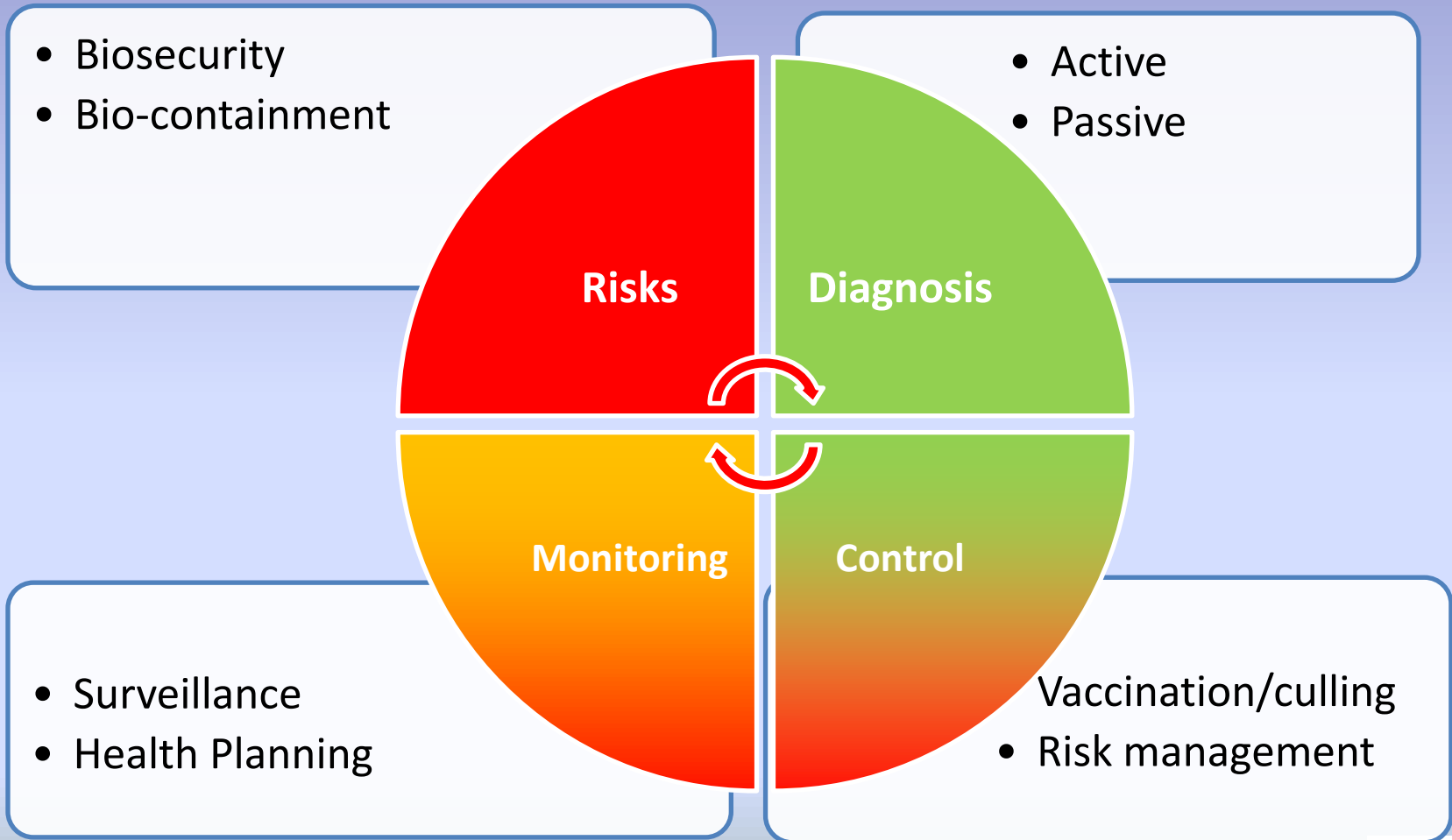
Present a farmer with a problem and he will find a solution!

Ownership of the disease

- Get the farmer to “own” the disease
- He must fully understand the program and invest in effective controls
- “Mission drift” is common- regular reviews are essential

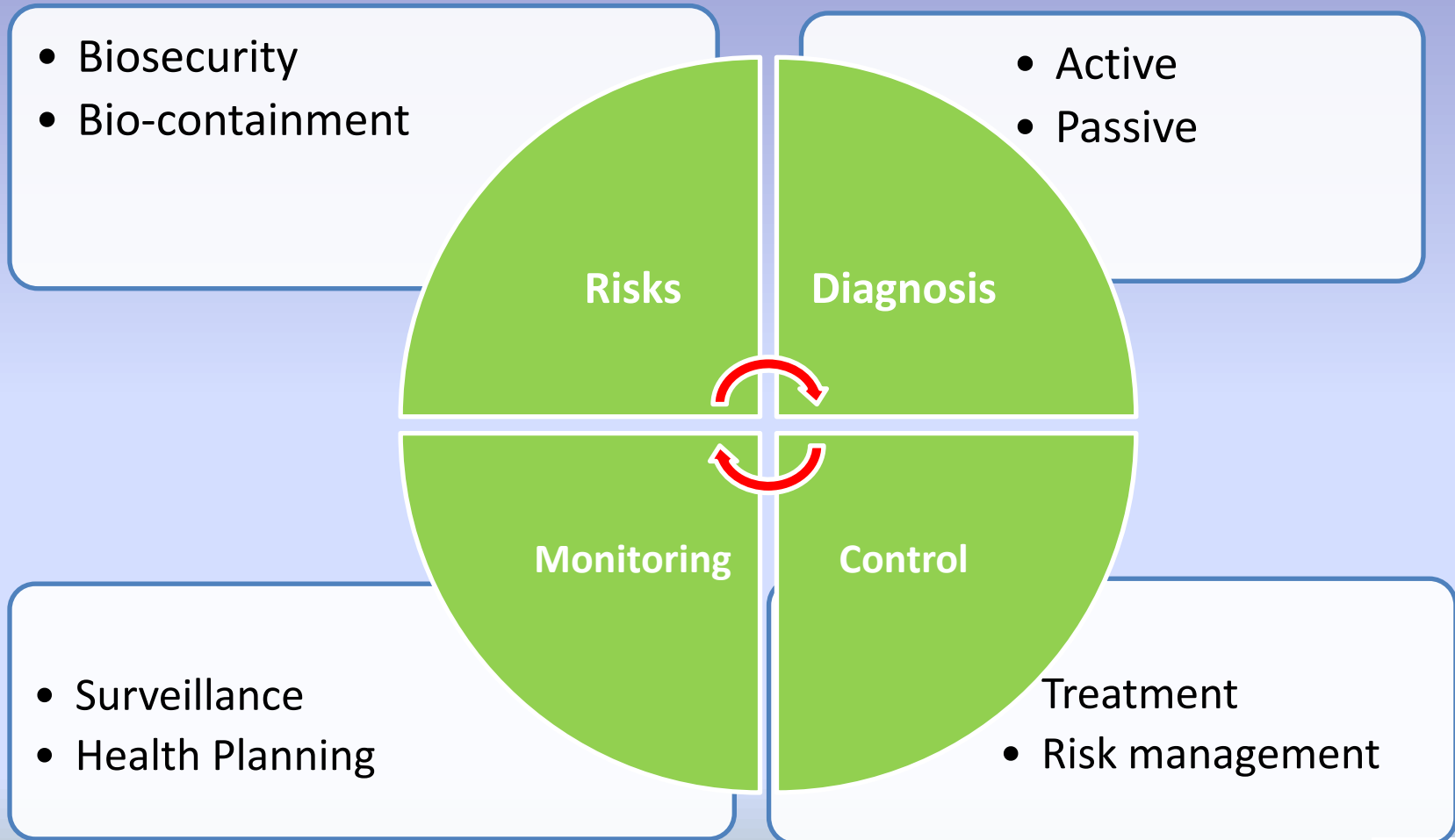
Tests are only part of the process

“Test and Treat”



Don't ignore the negative herds!

“Predict and Prevent”

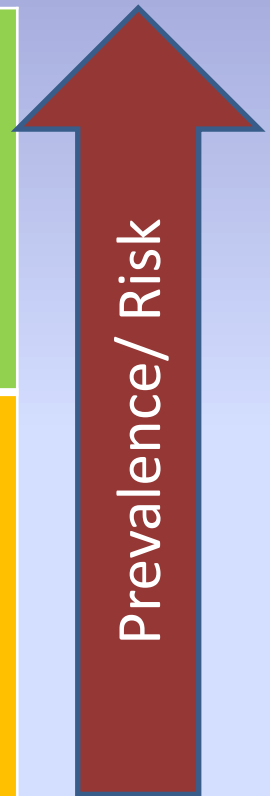


Simple surveillance strategies

- 30 cow Milk ELISA screen of high risk cows selected on basis of milk yield, somatic cell count and mastitis history
- Highly effective 95% sensitivity for identifying infected herds (Hanks 2013)
- Combine with risk assessment to enhance sensitivity
- Repeat screens in high risk herds
- **Use results to help predict likely future true herd prevalence**

Farm specific controls- manage expectations!

<ul style="list-style-type: none">• Vaccination• Breed to terminal sire	<ul style="list-style-type: none">• Risk based control (Quarterly Testing)• IFM and Strategic Testing
<ul style="list-style-type: none">• “Ostrich approach” and wait for disease to develop	<ul style="list-style-type: none">• Improved farm management• Biosecurity protect and monitor



Do it right!



Practice champions

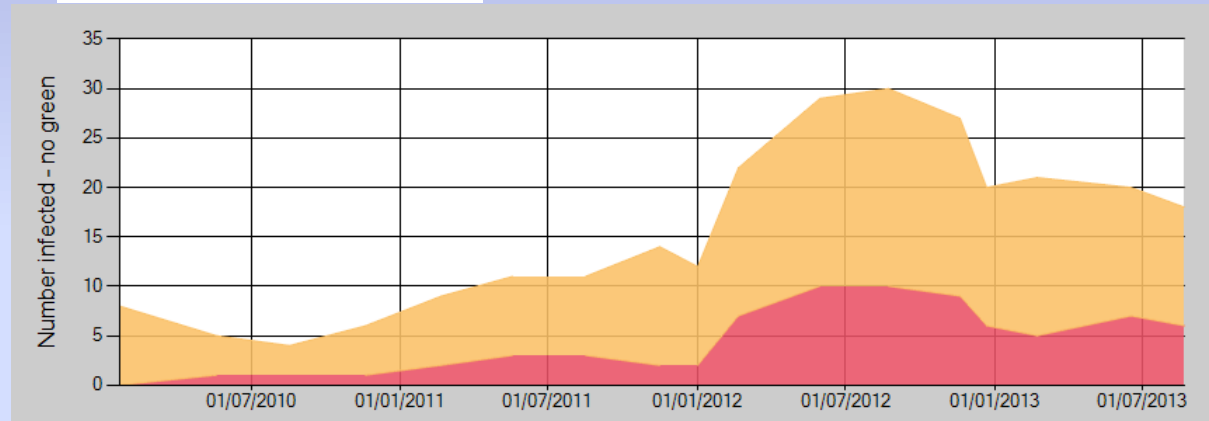


CAROLINE JENKINS

Admin/data input Assistant

Use support staff

Track and store results



Date of test	Test	Lab	Next due date	Laboratory interpretation	Result No. +	Result No. ?	Result No. -	Notes	Clinical interpretation	Status	Report	Edit
28/02/2012	Milk Ab	NML		Unknown	22	0	0	22 positive. 10 red and 12 amber	Disease confirmed		View	Edit
13/10/2010	Blood Ab ELISA	VLA		Unknown	0	0	0		Disease NOT confirmed		View	Edit
05/10/2010	Blood Ab ELISA	VLA		Unknown	0	0	0	animal ID# 426	Disease confirmed		View	Edit
23/08/2010	Blood Ab ELISA	VLA		Unknown	0	0	0		Disease NOT confirmed		View	Edit
19/08/2010	Milk Ab	NML		Unknown	1	2	140	1 red and 2 amber	Disease confirmed		View	Edit

Create a farm specific robust plan that will work for the farmer

“80% control= 100% failure”

* Stocking density		Green - Robust and effective
* Maternity hygiene		Green - Robust and effective
* Separation high risk cows		Red - High risk of failure
* Colostrum hygiene		Green - Robust and effective
* Milk hygiene		Green - Robust and effective
* Post calving hygiene		Green - Robust and effective
* Separation of calves to reduce risk		Green - Robust and effective
* Calf identification		Red - High risk of failure
* Purchasing stock		Green - Robust and effective
* Biosecurity		Green - Robust and effective

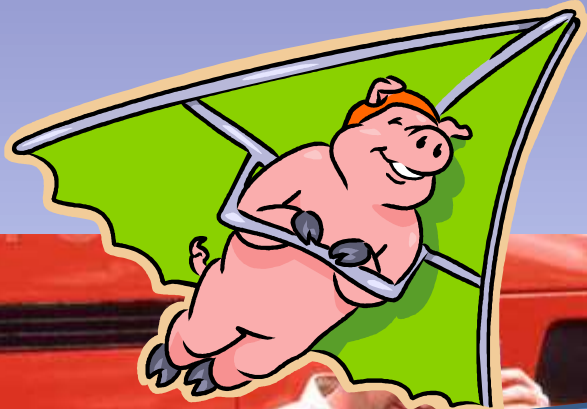
Sell preventive medicine- it won't come to you!



Mr Orpin, I am reading about Johne's . I don't have this disease and I would like to pay you to come out here and advise me on how to avoid getting it. Thank you.

Do we believe in Preventive Medicine?

Can we sell it?



Mr Orpin, I am reading about Johne's . I don't have this disease and I would like to pay you to come out here and advise me on how to avoid getting it. Thank you.

Incorporate infectious disease management into your health reviews

- Quarterly reviews of performance
- Revisit infectious disease programs
- Help identify future problems
- Keep the team on track



Protect the uninfected!

- The cheapest way to control JD is to prevent it entering the herd in the first place
- Effective management of JD disease entry risks is vital

Questions???

pete.orpin@parkvetgroup.com