



Living With.... A Summary of Diseases

Neil Howie MRCVS

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Living with...

'Controlling disease, or just wasting money on vet's bills?' So led Professor Kenton Morgan's article which initiated our series 'Living with.....', in which authoritative scientists have explored the relationships between infectious agents, management, health and diseases which affect the nations dairy herds.

This article, nearly two years later, will attempt to pull together some of the common threads our authors have referred to and in doing so I hope that some of you will be encouraged to do what I have done – and get out your back copies of the Journal from Issue 1 of 1999 and read them as a set.

Kenton Morgan asked, rhetorically I hope 'Is it possible even, that since the introduction of antibiotics into farm animal medicine, there has been a 50 year period of veterinary surgeon abuse?'

I don't think he meant that you have spent 50 years abusing vets, although we are feeling particularly vulnerable at the moment!

He did mean that the ready availability and effectiveness of antibiotics have allowed the industry – and I think vets and farmers share in this – to rely on treatment and salvage rather than prevention as our predominant disease control strategies.

One common thread through our series is that each of the infections except Tuberculosis is controllable, if not eradicable, by vaccination.

Another feature is that each of the authors clearly describes how managers have to make an effort to manage stock in other ways which allow animals the best chances of avoiding infection and resisting becoming diseased if they do become infected.

Here is an important concept. Disease is abnormal state or function of the whole or part of an animal. Infection with a particular organism does not necessarily cause disease, and each of our authors refers to the importance of 'symptomless carriers'.

Equally, the isolation of a particular organism, or antibodies to an organism, from a diseased animal does not necessarily mean that organism caused the disease, as both Malcolm Banks and Phil Jones record in their articles on IBR and Salmonellosis.

All the authors refer to 'stress', often associated with calving, as a factor in tipping the balance between an animal coping with a level of infection without symptoms in favour of the infection, so that it becomes a shedder of infection, with or without showing symptoms of disease.

This highlights one of Kenton Morgan's themes. Herds should be treated as entities, made up of component cows. Systems management should be in place to allow each and every cow the best chance to fulfil it's potential without succumbing to disease.

Disease then becomes an indicator of systems failure. OK, reach for the wonders of modern pharmacology to try to restore the individual to health, but most importantly assess and review the system to reduce the chances of herd-mates following the sick cow down the path of failure.

While around calving time lets remember that Phil Jones the Johnes man and Phil Jones the Salmonella man both referred to the importance of the very new born calf becoming infected with their favourite bugs. Lets think about the hygiene of calving areas and how overall herd disease control can be enhanced by investment in both the infrastructure and human effort associated with calving.

I remember well, from my Nuffield Scholarship trip, that cows in Sweden typically calve in boxes cleaned to near sterility. We have clients successfully calving cows in sand bedded boxes, where bacterial infections are kept to insignificant levels. Conversely, I see too many problems where cows calve in communal straw bedded areas, and calves are expected to find their mum and get a good suck.

Colostrum, colustrum, colustrum! (Downside Johnes-it may be carried in colustrum- be prepared to cull the last born calf of any case!)

Just as newborn calves may ingest organisms so may older animals. Chris Lewis in his article on Leptospirosis refers to the seasonal pattern of disease; probably associated with the increased risk of ingestion of the organism at pasture. Salmonella and liver fluke are associated with poor feeding and

drinking hygiene. Can you eliminate all areas where stock can drink water which they or others may have urinated or defecated in?

That means fences and water troughs – and water troughs need cleaning regularly. That's effort, not money! John Bourne refers to the possible need to restrict feed contamination by badgers as part of TB control. Do you feed young stock hay or straw in racks – or are they expected to 'graze' the inevitably soiled bedding?

Fertility management constitutes the major contact between vets and cows. Each of Joe Brownlie, Chris Lewis and Malcolm Banks refer to BVD, Lepto and IBR causing sub fertility. All our diseases save Johnes and TB can cause abortions. The evidence is that the nations dairy herds are getting less fertile. We still see too many cows which have aborted. Our subject diseases will be responsible for much of this disease, and as each of our authors relates, the cost of sub fertility and abortion could be massively reduced by effective disease control programmes.

Vaccination could be important in each case, but only as part of a programme of enhancing herd protection by reducing exposure and increasing resistance.

One management aspect which causes vets distress is that farmers forget why things get better! Diagnosis of an infection usually results from investigation of a disease. Control measures are put in place, and the disease hopefully reduces in incidence – even disappears for a while. Farmers forget why things get better, consultants encourage cost cutting – management relaxes and hey presto – disease re-occurs. Eradication is a fine objective – but get real – absence of disease does not mean the infectious agent has been eradicated. Don't drop your defences – it's not just your vet trying to make a sale!

During the course of this series I have seen three classic 'cow flu' herd outbreaks like I haven't seen for years. The Veterinary Laboratory Agency reports an increase in Lepto outbreaks over the last couple of years.

Most herds where we know there is salmonella will have flare ups if they do not vaccinate.

There is a natural peak and trough pattern to diseases. When a herd experiences an outbreak the massive explosion of infectious agent in the environment exposes many of the herd members to infection. Whether or not they get diseased – as Joe Brownlie explains well in his BVD article, the exposed animals generate immunity. The immune animals produce offspring which meet very little challenge and a largely naïve herd develops until, wham, in comes infection from who knows where

and another storm of disease hits before you can do anything about it. Ironically that will probably stimulate re-introduction of a vaccination programme, at the time it is least cost effective. Use preventative medicine pre-emptively – not reactively, or as Kenton Morgan suggested, you will be wasting money on vet's bills instead of controlling disease.

If you are going to use vaccines, as Chris Lewis wrote, use and store them properly. Many vaccines need two doses at the start of the course – and if so, one dose is a useless waste of money. Amazingly many people waste money that way, and do not have their herds protected the way they think they have. Design the vaccine regime for your herd – and stick to the programme!

The science measuring the status of herds relative to Lepto, IBR and BVD has been enhanced by the ready availability of screening using a combination of blood and milk testing. Johnes, Salmonella and TB remain difficult. Use the veterinary support to assess the status of your herd, so that the need for effectiveness of control measures can be quantified.

The CheCS schemes will carry these programmes forward to enhance the nations herd assets. Biosecurity is a buzzword. It's all about protecting a herd as an entity from infections it does not currently have. If the only way of infectious agents being introduced was with cattle biosecurity would be relatively simple – do not buy in! (One of our IBR outbreaks probably came to the farm with a bull, which did not sell at a collective sale). However, several of our authors refer to other animals – including wildlife spreading infection.

I must finish this series with one plea. I believe badgers are involved in bovine TB. However, the biggest risk to areas of the UK in which TB is not endemic and where badgers are not currently infected is the movement of infected cattle from the TB infected areas. Farmers must share in the responsibility for controlling this risk. Insist on private tests on cows you buy in from risk areas as soon as practicable after they arrive.

Make biosecurity and preventative medicine a shared responsibility between dairy herd owners and veterinary advisers. Make health management integral to overall herd management. The result should be the enhancement of the herd as a healthy productive asset in which owner, staff and advisers can all reflect.