

Reflections on Flock Health



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With a background in sheep farming in Inishowen and a career which began as a veterinarian in rural practice in Donegal and Scotland and continued as a farm animal academic clinician in the UCD School of Veterinary Medicine, I was delighted to be given an opportunity by West of Ireland Registered Pedigree Suffolk Sheep Breeder's Club to indulge in some personal and historical reflections on some sheep health themes.

One of the most remarkable observations over my career has been the introduction and establishment of diseases in the Irish sheep flock, of diseases that were considered exotic; diseases such as sheep pulmonary adenocarcinoma (Jaagsiekte) which was first recorded in 1985 in County Tyrone, anecdotally linked to movement of sheep from Scotland where this disease was endemic and one of the most common clinical cases that I saw as student at the University of Edinburgh Veterinary School. Subsequently, we saw the appearance of caseous lymphadenitis (CLA) characterised by weight loss and lymph 'gland' swelling (O'Doherty et al., 2000), severe lameness caused by contagious ovine digital dermatitis (CODD) (Sayers et al., 2009) and climate change-related emergence of Schmallenberg virus (Collins et al., 2017). Memories of the Foot and Mouth Disease outbreak of 2001 and the emergence of Blue Tongue outbreaks in the UK underline the importance of biosecurity at both national and individual flock level. Sheep diseases which are not present in Ireland but which present a constant biosecurity threat include Maedi Visna, which is under regular biosecurity surveillance by veterinarians in the Department of Agriculture, Food and the Marine.

The announcement in the UK House of Commons in 1996 of a new variant CJD disease in humans, linked to BSE in cattle, generated scientific scrutiny of the 'old' ovine nervous disease scrapie (Healy et al., 2004). Furthermore, because of the potential dreadful human health impact, scientific and policy discussions ensued, which actually included consideration of complete culling of the UK sheep flock, if the BSE prion protein had crept into the sheep population with concern around an inability to distinguish it clinically from scrapie – all of which led to routine genetic testing of pedigree rams. Whilst on the subject of diseases with a genetic basis, it is important that we study diseases with suspected genetic aetiology such as the arthrogryposis (crooked lamb syndrome) reported in a population of pedigree Suffolk sheep at the beginning of this century (Doherty et al., 2000).

In this challenging year of the COVID-19 pandemic, biosecurity and the concept of 'one health' – that complex interface between human and animal health is in sharp international focus. Biosecurity of course is a strategy to prevent the introduction of infectious disease onto a sheep farm and to control its spread within the farm should disease occur. Biosecurity is about risk reduction; no biosecurity plan will be 100% effective. Biosecurity also relates to those diseases of sheep, which are transmissible to humans such as enzootic abortion and orf. However, before we consider those infectious diseases we want to keep out of our sheep farms, we should first reflect on the disease status of our own flocks. The first question to ask is do we know the infection status of our flocks as it applies to the list of the 'biosecure' diseases such as enzootic abortion, CLA, CODD, sheep scab, resistant

internal parasites, orf etc. This is a fundamental flock health management issue. If we do not know the infectious disease status of our flocks, then we need to begin the process of establishing this status; this is particularly significant for pedigree flocks but it also applies to commercial flocks.

Social distancing has been a societal mantra since March 13th, 2020 as has the notion of quarantine. Quarantine literally meaning '40 days' (the period merchant ships were held at anchor before being allowed to disembark in commercial centres such as Venice) is an ancient concept that emerged in medieval Europe during the Black Death plague. Purchased sheep represent the greatest biosecurity risk and should be quarantined and observed for between 3 and 7 weeks. We purchase animals that appear healthy but should hold them for a period in case they are subclinical or incubating a disease. This allows them to be closely observed; to be tested for infectious disease as appropriate; to be vaccinated for infectious disease as appropriate or to be treated for a disease or resistant worms. The sheep industry needs to raise awareness of biosecurity, as it is critical when purchasing replacement or foundation stock, including rams, that farmers are cognisant of the health status of the incoming sheep.

It would be impossible for me to pen an article like this without mentioning foot lameness in sheep, which I am sure is a priority for pedigree breeders of Suffolks, as well as all sheep farmers because of its impact on fertility and production. Foot lameness caused by virulent footrot in sheep remains at an unacceptably high level in many flocks and is a cause of economic loss and an animal welfare concern because of the painful pathology. We have understood the infectious causes and epidemiology of virulent footrot for many years but challenges still remain regarding control at the level of the flock. We must apply control methods based on scientific evidence and one of the most interesting facts to have emerged in this context is that routine whole flock claw trimming is detrimental in the context of control.

A basic footrot control plan requires recording (simple prevalence determination by counting the number of lame animals, aiming for close to zero tolerance following an initial target of <5% affected). Data recording is a fundamental element of flock health planning and it need not be overly complicated or sophisticated as I learnt as a young vet student from my father who meticulously

recorded production and health data in his pocket diary! It also requires the removal of chronically lame sheep, segregation and antibiotic treatment of clinical cases; quarantine for new entrants; correct use of 10% zinc sulphate footbaths and the use of vaccination as appropriate.

Stomach worm control is another issue that has seen some significant changes in approach over the years. We are now in a world of sustainable control of parasites to reduce the huge problem of anthelmintic resistance, with the correct emphasis on the use of pooled faecal egg counts to inform targeted selective treatment. Veterinarians and agricultural advisors have a responsibility to deliver clear communications on this issue. As a young boy, I remember that my grandfather would not dose lambs that appeared healthy, in good body condition and with clean tails – this folk wisdom has been lost and I would not be telling the truth if I state that I not recommended some farmers to dose lambs every 3-4 weeks, something we now regard as bad practice; as professionals we need to reflect and learn from this because it created confusion.

In the context of the subject of flock health, one cannot over emphasise the importance of routine vaccination against the killer clostridial diseases and pneumonic pasteurellosis and I will conclude this reflective piece with another reference to Donegal folk memory. The terminology for disease can tell us something about its place in folk memory and is inextricably linked with the history of the disease itself. In this regard published folklore texts sometimes offer an insight into changing patterns of animal disease. Material collected from Co. Donegal by Ó hEochaidh revealed that a rapidly fatal condition, known locally as 'galar bréan' (rotten disease) was commonly described in grazing sheep at the beginning of the 20th century. Affected sheep passed redwater 'uisce dearg', and died quickly as a result - 'gheibh na huan seo bás go h-an tobann'. This syndrome is not seen in modern Ireland where copper toxicity in concentrated sheep would be the only significant cause of haemoglobinuria and mortality. The condition which best fits the description of course, is the clostridial disease bacillary haemoglobinuria. The widespread use of multivalent clostridial vaccines in Irish sheep since the beginning of the

1970s has resulted in the disappearance of this disease – something for anyone with an anti-vaccine frame of mind to ponder.