PPD Questions

You have a client with 250 cows, calving evenly spread throughout the year. The herd averages 9,000 litres per cow per year and has a calving rate of 25%, which is also the replacement rate. The calving interval is 480 days. The dry period is 8 weeks. The first 5 weeks are spent in a ‘far-off’ group and cows move into a ‘close-to’ group 3 weeks before their expected calving date. In-calf heifers are integrated into the main herd 3 weeks before their expected calving date (i.e. into the pre-calving group).

1. Assuming the close-to group is housed on straw (loose housed), how much bedded area should be available for the pre-calving group on this farm?
   A. 97m²
   B. 130m²
   C. 115m²
   D. 160m²

2. If the pre-calvers are housed in cubicles, how many cubicles are required for this group?
   A. 15
   B. 13
   C. 18
   D. 20

3. How much feed space is required for the pre-calvers?
   A. 8.6m
   B. 9.6m
   C. 5.1 head locks
   D. 22 head locks

4. What rumen fill score is the target for pre-calvers?
   A. 2.3
   B. 4
   C. 4.5
   D. 5

5. Which of the following statements are false?
   A. When a cow is moved into a new group, her feed intake is likely to be affected (reduced) for up to 7 days while she establishes her space in the hierarchy
   B. A dry period of less than 8 weeks is likely to negatively affect the subsequent lactation yield and/or udder health
   C. All cows will experience a reduced dry matter intake around calving and this makes a period of negative energy balance almost inevitable in any fresh-calved dairy cow
   D. The diet of dry cows in the far off dry period is unlikely to have a great impact as long as the diet is correct in the period 3 weeks prior to calving

References

Tick-borne disease in sheep – a changing landscape

Many of the diseases we witness are governed by landscape and climate. This is true for ‘tick-borne disease’ (TBD) that relies on the tick as a vector between hosts. The tick’s habitat is a deep vegetative mat, such as is found on bracken, moor and heath. Bodcid nicosia is the major sheep tick in the North. Haemaphysalis and Dermacentor can affect areas of southern England and Wales.

Ticks live in the deep moist vegetation, taking a blood meal from various hosts (bird, rabbit or sheep) each year (Figure 1). In total they feed for only 10-14 days over their three-year life cycle and are active above 7°C, when they ‘quest’ by seeking a host before returning to their vegetative mat.

Spring and autumn peaks are recorded, but it is not uncommon for ticks to tick activity almost all year round; which is not surprising when you consider the many secluded south-facing slopes.

The north west quadrant of the Lake District National Park, where much of the high fell is common land, is grazed by the hefted Herdwick or Swaledale (Figure 2). Sheep are gathered from the fell for key interventions, such as tupping, lambing, clipping and worming.

At these times a head count – historically conducted in local dialect, ‘yan, tyn, tethera, mepher, pimp...’ – will indicate those sheep missing, or as they are colloquially termed, ‘lost to the fell’. The variations can be profound, with areas recognised as ‘dirty falls’ and others as ‘clean falls’. Farmers recognise specific parts of the fell as ‘dirty’ because they are often associated with higher losses from tick-borne disease (Figure 3).

‘Dirty falls’ can witness annual losses of 15 per cent of lambs at foot and 10 per cent of gimmer yearlings returning to the fell. When naive sheep are put to dirty pasture these losses can exceed 50 per cent. Fell farmers report increasing losses in these localities, together with a greater incidence of ‘cracked’ lambs – those lame, light and failing to thrive.

Common tick-borne diseases
Loupion (III) The infectious agent that causes louping ill is a flavivirus that induces signs of encephalitis. Its name comes from the characteristic ‘lopping’ gait that is exhibited when affected sheep are moved. Most, however, are found dead or in a state of terminal neurological extremities that generally indicates imminent death.

Tick pyreemia
This is a blood-borne staphylococcal infection introduced by the feeding tick. Tick pyreemia is a common sequela to tick feeding because the staphylococci are carried on a sheep’s skin. With a high

Figure 1 A typical tick life cycle. The ticks found on sheep are the pregnant feeding adults, at the end of a three-year life cycle spent almost entirely within the vegetation. This final feeding stage (lasting 7-10 days) sees the tick engorge on a blood meal, becoming the size of a pea before dropping off to lay eggs. During this feeding, tick-borne disease can be passed to and from the tick.

Larva feeds on small rodent or bird host
Nymph feeds on large rodent or sheep host
Adult pregnant female tick engorges a final blood meal from sheep, then drops off to lay eggs

0.75 hours

Suggested Personal & Professional Development (PPD)
Tick-borne fever
Tick-borne fever (TBF) is caused by Anaplasma phagocytophila. This invades the white blood cells and ‘drags down’ the body’s immune system, leaving it vulnerable to attack from other infections, such as the other two key tick-borne diseases listed above.

TBF alone is often a transient infection of sheep but the associated pyrexia can leave rams temporarily infertile, or cause abortion when pregnant ewes are exposed. Concurrent infection with looing ill virus will precipitate losses.

It is interesting to note that a common practice on fell farms is to house newly purchased rams prior to use, ‘lest they will fail to leave lambs’. Considering the pyrexia invariably associated with a fresh tup encountering TBF, there is more than a little credence to this folk law.

If your clients are finding ticks on sheep and witnessing losses or the clinical signs above, then it is important to distinguish which tick-borne diseases you are facing. Sheep presented in a terminal nervous state often look much alike and they are best sacrificed for post-mortem investigation.

Tick pyrexia is confirmed by culture of Staphylococcus aureus.

Local survey results
From the early 2000s, farmers in North West Cumbria were reporting a rising concern over tick-related disease. Millets and Veterinary Group decided to investigate the tick diseases in order to map out the dirty fells. During the clipping gatherings of 2003-2005 we sampled six ewes from 24 farms that covered the north-west quadrant of the Lake District National Park. The results are shown in Figure 4.

The looing ill sero-negative fells were consistent with those locations seeing less tick-borne disease and termed ‘clean fells’. In the summer of 2014, Chris Sharman, a local veterinary student, re-ran this study to assess the changing picture.

Tick-borne diseases are a challenge, or in weakened sheep with concurrent tick-borne fever, for instance, it can induce losses or leave ‘light’ chronically lame lambs or ‘cripples’.

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Within neutrophils, A polymerase chain reaction (PCR) test for TBF is available and undergoing validation.

More sheep are wintered off the fells and hence have less opportunity to harden themselves to the tick-borne diseases by accruing gradual exposure and immunity. The result is a two-fold – an increased challenge and a decreased immunity.

The expression of tick-borne disease is a balance of immune status versus tick-borne challenge. The implementation of some environmental schemes has seen the balance shift in favour of the disease. Sheep that are destined to live in areas of tick habit us need to acquire an immunity and become ‘hardened to the fell’. The key is to recognise the naïve animals and buffer the challenge, allowing a gradual exposure rather than overwhelming challenge.

The following points are particularly important:

- Obtain a diagnosis as it is important to know which tick-borne disease is part of the clinical picture.

The aim is to reduce challenge whilst encouraging immunity.
The benefits of an integrated computer system

In its day the traditional practice management system (PMS) was revolutionary for the practice manager, saving time and making systems much more efficient. Client record keeping and invoicing became much easier to manage and the addition of a stock control system potentially saved practices many thousands of pounds.

With the advent of the digital age new facilities and services can now be provided electronically and the role of technology in modern practice is even more significant.

Adding new facilities to an existing PMS is best done as a fully integrated solution and practices that are able to do this will see huge benefits and greater efficiencies.

The ability to create and view staff rotas, record and integrate lab results, add digital images to the client record or have a seamless integration of a pet health scheme are all rewarding but can be more time-consuming, if this involves using different suppliers for the different services.

The dependence on multiple support services is never a good option and certainly does not help the busy practice manager.

Ask any practice manager or owner what they would like to see from a PMS and you will be given a long wish list of facilities and services rather like the list below.

What do you need from your IT provider?

- Accurate and up-to-date client and animal records providing instant access to all aspects of an animal’s health and history.
- An invoicing system that enables stock items and services to be added to the client’s invoice while also providing access to reports, end-of-day and month procedures and loyalty point schemes.
- An appointments system providing proactive planning to level out appointment peaks and troughs while the status of arrived clients as well as emergency patients and others who have arrived without an appointment can be easily accessed.
- SMS text messaging allowing text messages to be sent from a client’s record to remind them about appointments and treatments and the ability for messages to also be sent to vets on the road.
- An easy-to-use system for creating and viewing staff rotas.
- Appointment hospital and daybook modules which have the attendance check facility within them enabling clients to be automated and sent in batches to more than one client at a time, thereby helping to avoid missed appointments and no shows and a choice of contact method so this can be carried out automatically via SMS and email or manually by telephone.
- Targeted electronic client communications allowing the sending of personalised and automated text messages and email reminders and the ability for information to be merged with data held in client and patient records into a text message or email reminder for multiple recipients, similar to mail merge.
- The generation of reminders for any product or service from an initial purchase or recommendation that can be generated for any specified intervals utilising information about a client’s preferred method of communication and allowing the user to select which form of communication is most appropriate.
- An organised daybook which enables large animal and equine practices to organise office visits more efficiently, for example, by arranging rounds to minimise mileage.
- A stock control system where there is immediate access to information about the practice’s stock items and where batch numbers can be tracked as well as allowing expiry dates and stock levels to be flagged. Electronic ordering and stock reports should also be included.

PPD Questions

1. How old is the pea-sized sheep tick we commonly remove from dogs?

2. Name the three major tick-borne diseases of sheep.

3. Where do ticks live?

4. Where would you find Anaplasma phagocytophila in the host?

5. How can farmers manage tick exposure to reduce losses?