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Welcome to the September/October issue of our newsletter.

We hope you have had a productive summer. With autumn and winter on the horizon, we have decided to take a closer look at sheep scab for this issue. Prevalent between September and April, we detail the signs to look for, diagnosis and treatment.

If you can measure it, you can manage it! KPIs for fertility in dairy herds is key to profitability and sustainability. Knowing your numbers helps highlight areas for improvement. In this issue, we help you decide which KPIs are relevant to your herd and farm.

We hope you find these topics useful. Let us know, when we are on farm next, what topics you think would be useful for us to cover here.

Best wishes,

The team at Kernow Vets

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Fertility KPIs in dairy herds

The best KPIs are accurate and relevant. Knowing your numbers can highlight areas for improvement



Sheep scab

The annual cost of sheep scab in the UK is £8.3 million. How to spot it, treat it and prevent it in your flock

Fertility KPIs in dairy herds

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'If you measure it, you can manage it' someone once said!

This maxim is true for fertility in our dairy herds. There is a bewildering array of metrics available to measure the performance of your herd's fertility. This article will discuss these metrics and the targets that are achievable. It is best to discuss targets with your vet based on your system and objectives. We are more than happy to help.

Fertility management is key to the profitability and sustainability of a dairy herd. Efficient reproductive management is important to maintain profitability. Knowing your numbers can help pinpoint areas to improve. For example, a low submission rate can highlight deficiencies in heat detection or expression.

The best KPIs are accurate and relevant. They should show an improvement when fertility is good and vice versa. Fertility measurements often have an inherent 'lag' or delay to them because the egg that is ovulating today, started its journey 60 days ago, and the cow's environment, nutrition and health status can impact the egg at any point in that 60 days. There is also a delay of at least 30 days until a pregnancy is confirmed.

Calving Interval:

The period between one calving and the next. This can be a crude and historical measure of fertility performance which can be easily manipulated by excessive culling. Averages can also hide wide extremes in performance. A 365 day calving interval is important for block calving herds. This metric isn't really that useful as it is such a historic measure.

- Target: 380 days (Range 355-440 days)

Calving to 1st Service:

A measure of average time from calving to first service. This can help identify transition issues or heat detection problems. If this is too low, then cows are being served too early which can compromise fertility. If too high, then cows will not get in calf in a timely fashion.

- Target 50 days
- Range 40-80 days

Calving to conception:

A measure of time between calving and conception. This is a little less historic than Calving Interval and can show recent performance. A high calving to conception interval can show poor transition management or a prolonged delay in service post calving. As with the previous two metrics these are expressed as herd averages which can hide wide differences between individual cows.

- Target: 80 days
- Range 60 -100 days

Conception Rate (or Risk):

Number of pregnancies gained as a percentage of services administered. This can be further divided into sub sections: parity, service number, month of service, bull etc. These sub sections can be revealing when carrying out a performance review. For examples, is there a certain bull underperforming or is there a time of year when conception drops.

Conception rate can hide some wider issues with heat detection and reduced submission. If you only serve to 'dead cert' bulling cows then your conception rate can be excellent but, this doesn't take account of the eligible animals that have been missed.

Cows Pregnancy/Cows Served x 100

- Target 40%
- Range 25-55%

Submission Rate (or Risk):

Number of cows served expressed as a percentage of available cows to serve (open cows). This is a good measure of how many of the open cows were inseminated. Different software packages have different definitions of an 'open' cow but the definition should be a cow that has passed her Voluntary Waiting period, that has not been inseminated (or selected to be barren).

Cows Pregnancy/Open Cows x 100

- Target 70%
- Range 45-80%

21 day pregnancy rate:

This is an important metric as it combines the submission rate and the conception rate. The conception rate can be artificially high if you only serve the cows that are expressing heat well. That metric doesn't account for the animals missed (i.e. not submitted). This is a good KPI as it is relevant and changes as fertility improves or declines.

Cows Pregnancy/Open Cows x 100

- Target 22%
- Range 12-30%



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100 day in calf rate:

How many cows get in calf by 100 days in milk? This is a common metric in block calving herds where the time pressure to get cows in calf is much more apparent. There is no reason why this time pressure shouldn't exist in all year round herds and this metric can focus the mind to make sure cows are conceived in a timely manner.

- Target 45%
- Range 20% - 65%

Average Days in Milk:

This is a useful measure to determine how 'fresh' the herd is. Again, seasonal block calving herds will have a different target to an AYR herd.

- Target >200 days
- Range 160 - 250 days

Pregnancy Hard Count:

Don't forget that counting the pregnancies is an important metric. If you are aiming for a consistent number of cows calving each month, and want to keep the herd size the same, then you can quickly calculate how many pregnancies you need each month. For example, a 200 cow herd with a 20% culling rate will need 160 calvings per year from the cows. Therefore, just over 13 pregnancies a month are needed.

KPIs are useful tools to measure a herd's performance. It is important to set KPIs that are achievable and that you can measure.

We can help you set these goals and track performance over time to assist you to get the best from your cows. Give us a call if you'd like assistance with reviewing or setting new KPIs for your herd.



Sheep Scab in your flock

Sheep scab is caused by the highly contagious mite, *Psoroptes ovis*. The mite causes an intense allergic reaction on the skin, although shorn sheep can carry the mite with no clinical signs. Disease is most often seen between September and April, as the mite likes warm, moist areas on sheep with a full fleece.

Sheep scab causes serious welfare issues, and has a massive economic impact on the UK sheep sector. The annual cost of sheep scab is estimated at £8.3m, and most of this comes from control measures. Sheep scab impacts the condition of ewes, reduces growth rates of lambs, damages the wool and, in severe cases, can lead to fitting and death.

There have been attempts in the past to eradicate sheep scab but, all of these have failed. The disease was notifiable in Great Britain until 1992 and the number of cases have risen hugely since deregulation. Sheep Scab has been made notifiable again in both Scotland and Northern Ireland in recent years. Throughout the UK, it is a legal requirement to treat any flocks containing infected

animals and local authorities can force appropriate action to treat sheep scab if necessary.

Spread

Sheep scab is most commonly spread directly from sheep to sheep. It can survive for up to 17 days off the sheep so, indirect spread is possible, making common grazing a high risk area.

The mites can also be picked up from anything the infected sheep has rubbed against, like fence posts and hedges. Shared equipment and handling facilities are another area where mites can be transmitted. The mite is not zoonotic so will not infect people.

Sheep scab can be introduced to a flock when bringing in new animals. A strict quarantine protocol on farms and good biosecurity will reduce this risk. The SCOPs website has great information regarding quarantine protocols and treatments that cover both internal and external parasites. We would be happy to help with this.

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Clinical Signs

Sheep can be infected for weeks without developing clinical signs. Always assume that the whole group is infected, even if not all sheep are showing signs.

Clinical signs include:

- Fence rubbing
- Restlessness
- Head tossing
- Biting/stamping feet
- Loose/soiled fleece
- Crusting red lesions
- Poor body condition
- Dull/depressed
- Progress to fitting/death when severe



Other causes of itchy sheep that need to be considered:

- Lice
- Rain scald
- Lumpy wool
- Bacterial/fly dermatitis
- Scrapie

Diagnosis

Sheep scab cannot be diagnosed from a visual exam. It is possible to get a dual infection with lice and scab, so any itchy sheep should be checked for scab, even if lice have already been diagnosed.

To confirm sheep scab, a skin scrape is taken from the edge of a lesion on the affected sheep and examined under the microscope. It is possible to miss a case of scab by taking a scrape from the centre of the lesion or just looking at wool. It can also be difficult to find mites in the early stages of disease.

A blood test is available to check for exposure to sheep scab. The result will be positive after two weeks of infection. This test is very useful for early diagnosis before clinical signs appear and for testing sheep post-quarantine. We can do all the testing needed to diagnose any issues within your flock. Give us a call.

Treatment

Treatment should only be used following a diagnosis of sheep scab to prevent unnecessary costs and reduce the development of resistant parasites.

There are two ways to treat sheep scab - organophosphate (OP) plunge dipping and injectable macrocyclic lactones (ML). It is vital to treat all in-contact sheep even if they are showing no clinical signs. If the sheep are kept on common ground then a treatment with residual action is a good idea to prevent reinfection.

Coordinating treatment times with neighbours should also be considered.

OP Plunge dipping

- Only effective if the dipping is done correctly (showering or jets will not work)
- Kills mites within 24 hours
- Residual action that lasts for several weeks
- Also controls blow fly, keds, lice and ticks
- Certificate required to use OP
- OP is ecotoxic and must be disposed of correctly
- Health risk to operator if mishandled
- Contract OP dippers are becoming more common

Macrocyclic lactone injection

- Injection treats sheep scab and internal worms
- Takes up to 7 days to kill mites
- Short acting so reinfection possible
- Does not cover for any other ectoparasites
- Risk that use of injectable ML for scab will increase resistance in internal worms
- Must not use 1% cydectin in sheep that have been injected with Footvax

Treatment should be reviewed for each individual farm. MLs are also anthelmintics and there is growing resistance to these medications in gut worms. There have been reports of sheep mites developing resistance to MLs. To reduce the risk of resistance, these medications should only be used when absolutely necessary.

Control

Good biosecurity, an appropriate quarantine protocol and prompt investigation of itchy sheep are all vital for controlling sheep scab. A vaccine is being developed which in the future may be a valuable asset to sheep scab management.

Key biosecurity points to prevent sheep scab introduction to a flock:

- Quarantine new arrivals and either treat for sheep scab, or blood test after 2 weeks to check for exposure first
- Clean and disinfect any equipment/handling facilities the new sheep have had contact with
- Clean and disinfect protective clothing
- Ensure all fencing at boundaries is well maintained and double fenced



The SCOPs website has lots more information about responsible parasite control in sheep.

Please give us a call if you have any questions or want to discuss sheep scab management on your farm.