DAIRY HERD HEALTH & PRODUCTIVITY SERVICE

# Newsletter 2021, Q3 Aug 2021

## "Odd" cases of milk fever

All dairy farmers will recognize a classic case of milk fever, typically in an older cow around the time of calving. However, the DHHPS gets sporadic reports of "atypical" cases of milk fever (hypocalcaemia) at other times during lactation, and even in the days after drying cows off.

Blood calcium levels in dairy cows are maintained by a complex interaction of hormones and Vitamin D, and anything that upsets this delicate balance may cause issues. For example, it is well recognized that high yielding cows who are bulling can develop milk fever, thought to either be a result of short-term reductions in DM intake, or the effect of hormones such as oestrogen on the mobilization of calcium from bones.

High yielding dairy cows are at particular risk given their high requirements for calcium: a high yielding cow needs over 100 grams of calcium per day to maintain positive calcium status, given how much calcium will be lost in the milk. Whilst calcium stores in bones can buffer any deficit in the short-term, it is proposed that prolonged negative calcium status in high yielding cows will deplete body reserves.

Grass tends to be high in calcium (around 5 g/kg DM), and so cows getting out to grass will usually meet their calcium requirements from grazing. However, diets based on maize silage or wholecrop will have much lower calcium intakes, and so supplementation will be necessary. What role Vitamin D plays in these situations is also of interest: Vitamin D is either supplied from the diet (mostly forages like grass) or made in the skin following exposure to sunlight. It follows that high yielding fully housed herds fed diets based on maize silage will therefore potentially be low in Vitamin D and calcium, unfortunately in the cows with the highest calcium requirements…..

Other issues include fodder beet leaves, which contain high levels of oxalate, a compound that binds calcium resulting in hypocalcaemia when grazed *in situ*. Similar issues have been reported from New Zealand associated with cows grazing pastures with fat-hen (*Chenopodium album*).

It is also possible for stressful events (such as sudden changes in diet and/or social group) to precipitate cases of hypocalcaemia. This is potentially why some herds report cases of hypocalcaemia in cows just after drying off, when a combination of reduced DM intakes, drop in calcium intake and gut upsets may all play a role.

Potential approaches to dealing with milk fever cases in mid or late lactation dairy cows:

- Check that these cases are indeed milk fever (hypocalcaemia) cases. Get your vet to take a blood sample from affected downer cows **prior** to any treatment, and check on calcium, magnesium and phosphate levels.
- Check for underlying issues such as excessive negative energy balance, fatty liver, liver fluke or low magnesium status that might be behind the problem. A DHHPS metabolic profile is one quick and easy way of doing this.
- Check the balance of major minerals (calcium, magnesium and phosphate) and Vitamin D in the milking cow diet. In high yielding herds, supplementation with limestone flour should provide 0.8% calcium in the total diet, and target 25,000 IU per cow per day of Vitamin D (particularly important in fully housed herds).

We are interested in looking into such cases of "atypical" hypocalcaemia further, and seeing what risk factors may be present. If you have had cases in your herd, then we would be interested in hearing further details from you.

Dairy Herd Health and Productivity Service, Division of Veterinary Clinical Sciences, Royal (Dick) School of Veterinary Studies, University of Edinburgh, EBVC, Easter Bush, Roslin, Midlothian EH25 9RG

Tel: 0131 651 7474 Fax: 0131 651 7473 DHHPS@ed.ac.uk www.ed.ac.uk/vet/dhhps

**Tackling a Digital Dermatitis Flare Up – Head on!**

In March 2021, it became apparent that one of the dairy units that we work with were identifying increasing numbers of lame cows with severe M2 Digital Dermatitis leisons. It was agreed that surveillance for DD in the parlour (hind feet only) should be introduced, and a "blitz" DD treatment using topical oxytetracyline spray should be started on cows that were identified as having active M1, M2 and M4.1 leisons.

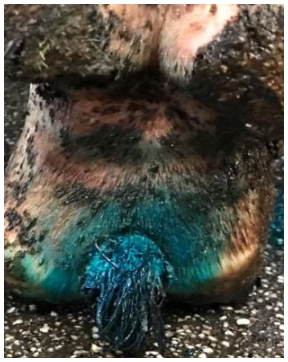
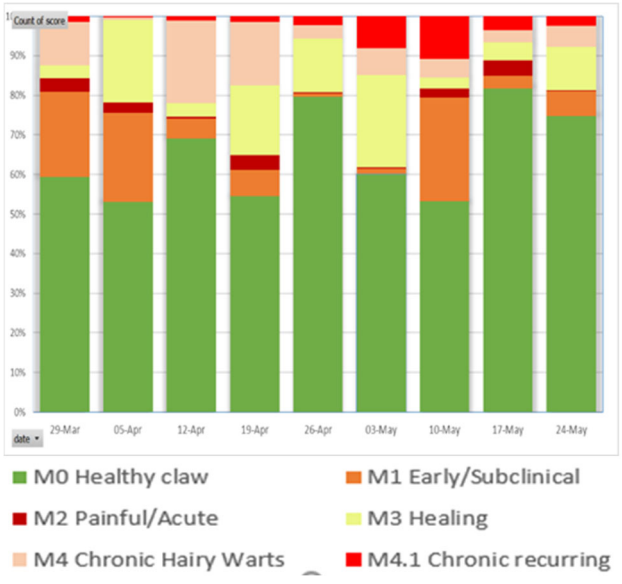


***Photo on left:*** *a cow with a M2 digital dermatitis leison. An accumulcation of high numbers of cows with M2 leisons will be behind an outbreak of Digital Dermatitis.* ***Photo on right****: a cow with a treated M4 leison. M4 leisons are a reservoir for disease as bacteria are encysted deep within the skin.*




Parlour surveillence started at the end of March, and continued once weekly for 9 weeks. On entry to the parlour, the cows' feet were carefully hosed off with water (ensuring the udder was not sprayed). The cows' hind feet were then inspected, aided by a small hand held torch and mirror. Any hindfeet identified with M1, M2 and M4.1 leisons were sprayed with topical oxytetracyline spray for the next 3 consecutive days (six milkings). Cows undergoing treatment were not foot-bathed for 5 days to allow the leisons to heal and scab over, but their feet were washed with the hose before being treated with oxytetracylcine spray.

The graph summarizes the findings of the parlour digital dermatitis scoring in this herd. Whilst there is quite a bit of variation from week to week, the number of cows with active leisons decreased on weeks 2 and 3, but then there was unfortunately a flare-up in the middle of May. This unit had implemented a good programme in terms of digital dermatitis detection and treatment, but obviously something was not working as planned given the flare-up in active M1, M2 and M4.1 lesions in the herd.

**ACTION PLAN FOR THIS UNIT- Immediate**

- **Improve slurry management** - specifically slurry gathering at the end of the passageways in the main milking cow shed. These areas need to be scraped clear of dung at least twice a day. **The cows' feet need to be kept as clean as possible.**
- On this unit, 3% copper sulphate concentration was being used. **Copper sulphate needs to be mixed up to a concentration of 5%.** On this unit, a 300 litre footbath (3m x 1m x 10cm) is in use, which means 15kg copper sulphate in every fresh footbath.
- Footbathing frequency in the milking cows to continue once a day, 5 days a week.
- Commence dry cow and heifer footbathing at least twice weekly
- Continue with parlour surviellance of DD at 4 to 6 weekly intervals

This plan will be reviewed in 6 – 8 weeks time. The next step would be a review of footbath design, in particular installing a **4 metre long footbath** to ensure each foot gets submerged twice in the footbath at each pass**.**

**DHHPS services during COVID-19**

We continue to operate as close to normal a service as possible during the current coronavirus situation. DHHPS@ed.ac.uk is the best way to contact us: this email address is monitored daily.