METABOLIC DISEASE

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1. MILK FEVER

Cause

A sudden fall of Calcium levels in the blood due to the cow being unable to meet the increased demands of late pregnancy, parturition, colostrum and early lactation.

Occurrence

Usually in older cattle (>7yrs), normally associated with calving, but can occur at other times, depending on weather, feeding, supplementation and diet. Jersey cows are at higher risk as they have fewer calcium absorption sites in the gut.

Symptoms: Vary depending on stage.

Stage 1:	Dopey or excited
	Stiff legged, wobbly.
Stage 2:	Sit down, dry muzzle, constipated
	Kink in neck.
Stage 3:	Over on side, bloated
	Dead within 10 hours.

Treatment

- Sit cow up to avoid vomiting.
- Administer Calcium solution into vein if possible, or under the skin over the ribs. If possible warm solution first.
- In the Vein lasts 1-2 hours. Under the skin lasts 4-6 hours. Oral treatments last 12 hours.
- When cow is alert and swallowing, give an oral calcium+ magnesium drench or starter drench.
- If not calved, check to determine if needs assistance (common in these cases)
- Check for other problems like mastitis, RFM's, Ketosis

- If a cow does not respond to treatment within an hour then you should call a vet. The longer a cow is down the lower the survival rate. A down cow ends up squashing the muscles of her legs. The muscle cells start to die and this can lead to kidney failure.
- Hip lifters used correctly can be life saving. Sometimes a cow that has just gone down with milk fever is not quite strong enough to get up by herself, but with a little help can be up and away. Never leave a cow unattended in hip lifters, and do not have a cow in them for more than 5 minutes at a time.

<u>After Care</u>

- Remember, a cow with milk fever probably hasn't eaten for a day or so but she still has the same energy requirements of a milking cow.
- Dose with ketol (250mls) twice daily or 1L starter drench.
- Inject 10mls of B12 under the skin to stimulate the appetite.
- Remove calf from cow.
- If the cow is up it is better to milk her out to prevent mastitis.
- Put a cover on her. Feed hay if possible, allow ad-lib access to feed.

<u>Prevention</u>

Fit not fat cows pre-calving.

Magnesium supplementation reduces incidence of milk fever by stimulating calcium mobilisation within the cow.

Add calcium (limeflour) to the diet of colostrum cows and milkers. Dust

pasture at rates of 150-200 grams/cow/day.

Fed hay to springers.

Problem cows can be injected with Vitamin D, 3 - 7 days prior to calving.

Magnesium & Milk Fever

The focus of a pasture based system needs to be aimed at ensuring that sufficient magnesium is available to the cow to ensure that metabolic processes, particularly calcium metabolism, are maintained. Magnesium absorption in the cow occurs mostly via an active transport mechanism in the rumen. The factors that interfere with magnesium absorption are– lush, high protein, high potassium, low sugar diets; i.e. spring grass. Some magnesium can occur passively, but this requires high concentrations of magnesium in the rumen fluid.

The use of more soluble forms of magnesium such as magnesium chloride or magnesium sulphate should be considered as the first and probably most important management decision during the spring. This will overcome both the potassium effect and the pH solubility problem, by allowing the concentration of magnesium in rumen fluid to be elevated more quickly, thus improving the passive absorption rate of magnesium. Additional management practices include;

- Slowing gut transit time by adding a long fibre source such as hay or straw. Again this will allow the concentration of magnesium to increase in rumen fluid and improve passive absorption.
- Acidifying the rumen by the addition of concentrates, molasses or maize silage. This will also increase available sugar levels, possibly improving active magnesium transport, or at the very least improving magnesium solubility.
- Addition of Ionophores (Rumensin^{tm}) can improve magnesium absorption efficiency by around 10%.
- Using less potash containing fertiliser to reduce K levels in plants.

If you have a milk fever problem then the take home message for spring is to look at the type and rates of magnesium supplementation on your farm. Getting the magnesium supplementation right is likely to have the greatest effect on reducing the problem for you.

3. MAGNESIUM STAGGERS (Grass Staggers)

Occurrence

Cows two years and older in winter and spring.

Cause

The sudden fall in blood magnesium with also often lowered calcium level. Predisposing factors include:

- Inclement weather
- Stress
- Lack of supplement

Symptoms

Acute:Sudden violent and often fatal convulsion in the paddock or milking shed.

Chronic: Slight nervousness, restless in shed, slow milk drop.

Treatment

Administration of Calcium & Magnesium mixtures into vein.

20% Magnesium under the skin **only**, don't attempt to sit up while convulsing - Vet can sedate cow.

Prevention

While magnesium oxide has been used successfully for many years (and should continue to be) it is not uncommon to hear of people saying that they give heaps of mag-oxide but still have milk fever and grass staggers. This is because mag-oxide is relatively insoluble and it takes a long time to elevate the concentration of magnesium in the rumen fluid. Adding soluble salts such as magnesium chloride and magnesium sulphate means that elemental magnesium in the rumen fluid is rapidly elevated. This helps overcome some of the interference that spring pasture has on magnesium absorption. It also means that more magnesium absorption can occur passively, usually only a minor component of absorption. The net result is more magnesium available to the cow, which has the added effect of elevating calcium levels and thus preventing milk fever.

2. KETOSIS

Causes:

Some of the more common causes of ketosis include:

- poor transition management & feeding
- poor colostrum feeding
- inadequate feed offered
- poor rumen function i.e. acidosis, lack of fibre, sudden feed changes; high protein low sugar grass, bad weather,
- nutrient deficiencies i.e. lack of minerals, carbohydrates
- activity level e.g. walking distances, fighting, mob changes, fast motorbikes.

There are two recognised clinical presentations of ketosis:

1. Acute or Nervous Ketosis

Cows may be drooling, frothing at the mouth, hyperactive, frenzied behaviour, chewing with no cud in the mouth, tongue flicking like lizards, high stepping, starry eyed and rapid blinking, they may appear blind, have odd vocalisation, are suddenly off milk, they might have profuse diarrhoea ("watery" due to swelling of gut lining) and milk fever. You may only notice sudden unexplained deaths.

2. "Dopey" Ketosis

Dull lethargic "couldn't care less" cows, look tired with head and ears down. They have a dragging walk, poor appetite, the eyes may be partially shut, and appear sunken, with "fat" lower lids. They often have diarrhea and poor milk production.

Treatment:

Ketotic cows are not eating, so they will have complicating problems like low calcium and magnesium. Treatment is aimed at correcting the metabolic imbalances

- Give them calcium & magnesium, and IV dextrose.
- Drench with energy sources like monopropylene glycol (Ketol), starter drench, molasses, by-pass fats.
- Inject with B12 to stimulate appetite and liver function.
- If you have a herd problem consider using products like rumensin.
- Re-establish rumen function. The first priority is feeding bland long fibre e.g. hay or straw.
- Reduce energy output. Stop Milking these cows! Individual cows should not be milked until they have good rumen function i.e. the gut is wider than the udder. Start with once a day milking when resuming milking. Whole herd problems—consider once a day.
- Reduce activity—keep clinically affected cows close to the shed, take feeds to them. Finally, provide covers or shelter, especially during wet, cold and windy weather.