

## Dairy Co Research Day 27/3/13

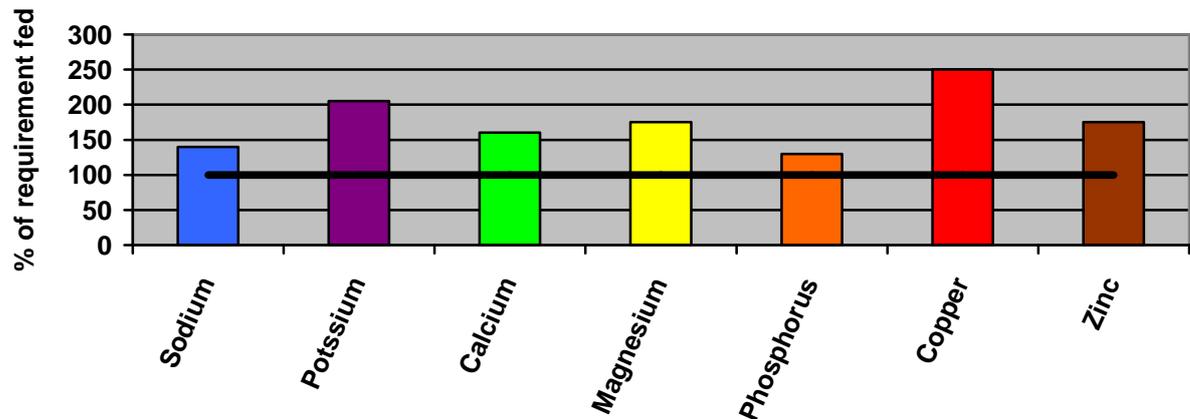
Dairy Co have established several Research partnerships with the Agricultural Universities and held an open day at Reading University's Cedar Centre

The farm extends to 580 hectares and supports 560 high yielding cows who are housed for most of the lactation on sand beds. They are selling 9500 litres a cow to one of the supermarkets and have a calving index of 396 days,

The projects that were reported on were

- 1) a lameness project based at Nottingham University, where it has emerged that none of the usual veterinary treatments have been validated and four different protocols are being trialled. The major finding to date is that regular use of Locomotion scoring ( every 2 weeks) and prompt intervention for cows that are developing lameness ( Locomotion score 2) will pay off limiting milk production loss but more importantly effecting a cure at that early stage. Only cows with locomotion scores of two are being treated in the trial. One of four treatments is randomly selected for the cow. The four treatments are :- Trim only, Trim with block on sound claw, Trim with a broad spectrum antibiotic, Trim with block on sound claw & a broad spectrum antibiotic . One fact that I was unaware of is that the cow has a cushion of fat in the foot and if she is losing weight in early lactation will lose that cushion and then she will be more likely to develop lameness.
- 2) Work done on soil compaction at the SAC in Dumfries both by cattle and machinery , with typically the compaction at twice the depth by machinery but more run off and less drainage of rain water after cattle compaction. The majority of damage done by machinery occurs in the first pass.
- 3) Work done at IGER at Aberystwyth on more productive and drought tolerant grasses with the first Fescue x Italian hybrid Aber Niche having been released. The latest ryegrasses are expected to produce 20% more output for the same fertilizer inputs.
- 4) Work again at Nottingham looking into Strep Uberis infections and identifying the individual strains of Uberis ( some herds have a single strain others have several) and looking at the differences between the management systems. The DairyCo Mastitis control plan is a key part of this study, emphasis is placed on identifying when the infection occurs ie. The dry period or mid/late lactation and how many infections re-occur in the same lactation.
- 5) Work looking at Mineral levels and all the herds tested were "over-supplementing" the major minerals in particular Copper which if regularly over fed can kill the cow, but conversely too little can also cause problems. It was stressed that only one person should be responsible for providing additional mineral sources to cows and youngstock as quite often one person could be adding a mineral block to a group of animals when

they were in fact already receiving 100% of their mineral requirements via a TMR. This chart shows by how much the study group were typically over-supplementing



The most reliable way to assess the mineral supply in the diet is to have a forage analysis taken. Also, an often overlooked area, especially in the case of calcium, is the water supply!

6)

Work at Reading comparing forage analysis in the Lab using near infrared spectroscopy (NIRS) to more accurately predict the nutritive value of grass-clover silages. 90 grass-clover samples will be collected from farms. The farmers are asked to estimate the clover content of the sample they have provided and this appears to be vastly overestimated against true value. All the samples are logged, coded and analysed for DM%, they are then mixed, chopped & stored frozen ready for feeding. Different silages are fed to sheep and cows with all of the manure and urine collected and analysed to find the true digestibility of different forages. The ME can then be predicted from the organic matter digestion. It has often been theorised that protein in particular is being under reported ie analysis states the protein is 16% when actually it is nearer 17%. Hopefully, the outcome of the trial work will enable more accurate ration formulation for diets based on grass/clover silages and increase the efficiency of production. Reading are also looking at Lucerne as a Protein crop comparing Autumn against Spring sown crops ( Autumn 2012 plantings will probably have to be resown) One of the farmers present suggested that the best way to achieve a successful establishment was to plant Italian ryegrass in the autumn , take 2 silage cuts and then drill the Lucerne once the soil has warmed up.

- 7) On farm strategies to reduce the transmission of Johnes disease in British dairy herds. A study of Johnes transmission routes based around CCTV monitoring of groups of calving cows. Each group typically had around 17 animals that were due to calve. The protocol for the farm was to remove new born calves within three hours of birth. All calves would receive colostrum within the 1<sup>st</sup> hour (either dams or dried substitute.) The study involves six commercial farms which initially screened all adult cows quarterly for the

Johne's antibody. Data will be collected on calving management such as cleanliness of dam & calving area, time taken for calf to stand, suckling behaviour etc. Blood samples will be taken to assess colostral antibody transfer at 10 days of age. By 2014 when the heifers calve down for the first time information on health & fertility will have been collected and then during the 1<sup>st</sup> lactation data on mastitis, lameness, milk yield, SCC and fertility will be amassed. Initial impressions indicate that a far greater percentage of calves cross suckle than previously thought. Also, CCTV footage highlights calves "grazing" mucky flanks etc in search of the elusive teat! The project aims to identify the best practice preventive measures with a focus around calving. How these management practices impact on the health and productivity of dairy heifers and the extent to which implementing preventive measures reduces the spread of Johne's disease

- 8) Out wintering replacement dairy heifers, eight farms on different soil types looking at different management styles and forages for out wintering heifers.
- 9) Investigating links between gut bacteria and digital dermatitis. Digital Dermatitis has bacteria called Treponemes it is present in all DD lesions and thought to be the cause of DD. Treponemes are typically found in the gut but do not cause disease in the gut. DD treponemes are the same family as those found in the gut but slightly different in type. The project will test faecal samples, mucin casts, DD lesions, rectal & oral tissue in the lab to identify any links.
- 10) Control of Cryptosporidiosis in calves. The aims of this study are to identify if different Crypto species infect calves at different ages, to see if other types of C.parvum exist in cattle and if so do these cause more severe types of scours.
  - ▶ Faecal samples from 25 calves were collected 3 times a week
  - ▶ Birth to 6 weeks
  - ▶ 3 months
  - ▶ 6 months

DNA was extracted to determine the presence & type of C.parvum. 64% of calves had C.parvum by week 6, reducing to 24% by 3 months then increasing to 63% by 6 months. Nine different types of C.parvum were identified, 1 main type, 11aA15G2R1 was found in 66% of calves.

- 11) Social components of welfare & productivity. Cows can recognise between 50 – 70 individuals. The aims of this study are to identify how an individual cow's position in the social group relates to her welfare & productivity. What are the health & production consequences of social group disruption? How does management group size affect the structure of social relationships? To identify if sub-groups exist within main groups?

12) Using nitrate soil sensors to increase sustainability. A large proportion of N in fertilizers is lost to the environment during & following fertilizer application. This represents an economic loss to the farmer. Study aims to investigate how real-time, in-situ nitrate sensors may improve the efficiency of N inputs. The sensor consists of an electrode attached to a data logger placed in soil or water to record continuously the nitrate concentration over a period of time. Field trials hope to commence this spring/summer.

13) Growing grass with nutrients from separated slurry. Little information is available on the performance of swards grown from separated slurry. The two year trial will include experiments to evaluate

- a) Grass grown using separated slurry
- b) Use of separated slurry in grazing swards
- c) Can separated slurry be used effectively in dairy grazing pastures to supply nutrients for grass growth & support the performance of mid-late lactation dairy cows?

Approx 200 farmers present and mostly by the look of them actively engaged in the industry and Dairy Co will doubtless judge that the levy money (£600 per 1 million litres) is being well spent.