

Notes from Dr Chris Morris, AgResearch, Ruakura, who is working on the genetics of Facial Eczema Resistance. He also has MAF Sustainable Farming Fund money for three years to monitor zinc sulphate water-trough protection methods used in the industry, and is in Year-2 of that project. Sponsorship by Agri-feeds Ltd and contributions from DairyNZ industry levy funds are also acknowledged.

“Facial Eczema in Dairy Cattle”

- Facial Eczema (FE) is an expensive animal health problem and a welfare problem, and it costs the dairy industry between \$9.6M and \$95.2M per year, depending on the weather.
- Breeding is the only long-term solution. Three other methods are: 1. avoiding the FE Toxin (by having spare pasture – unlikely, or using supplements), 2. suppressing the toxin by spraying, or 3. protecting animals by using zinc salts, and these three methods all cost the farmer each year.
- All herds in FE-prone regions should have got their control methods in place by now (early February). FE-risk summaries week-by-week are available by region, with FE pasture spore counts and cow liver damage levels (GGTs) monitored. However, FE risk can vary greatly from herd to herd, and even from paddock to paddock, so it is good to be prepared. Agri-feeds and Sporpak offer a spore monitoring service called ‘SporeWatch’.

GENETICS

- FE resistance in dairy cattle is a heritable trait. Heritabilities are at least as high as for milksolids yield, so it is possible to breed for resistance, if cows’ and sires’ relative resistance levels are known. The blood enzyme GGT is used to rank animals for resistance, after any accidental exposure to the FE toxin.
- AgResearch work over the last 6 years has analysed GGT data from cows in 61 herds which were exposed to the FE toxin, and which experienced clinical FE cases. As a result, 228 AI sires now have accurate Breeding Values for FE. A DNA test, called FE’nd, is also available at AgResearch’s Genomnz, for ranking cows and potential replacement heifers for FE resistance.
- Work is still required to find a more accurate version of the DNA test, for use with bulls.

ZINC PROTECTION

Zinc Sulphate Trough Treatment

- The present Ruakura study on Zinc sulphate ($ZnSO_4$) protection of cows against FE by trough treatment began in 2008/09. It was shown that cows drinking $ZnSO_4$ -treated water (with a masking agent) could be ranked on their daily water intake. Some cows were regularly large drinkers, and some small drinkers; it is unlikely to even out over time. Therefore you should plan water-trough treatment to the intakes of the small drinkers, not to the average; otherwise the small drinkers will be regularly underdosed with Zn and underprotected against FE. For example, those 25% of cows drinking the least in a herd are likely to drink 14% less than an average cow in the herd. Perhaps not surprisingly in our trial, high yielders (by milk volume) drank more; but looked at from the other angle, low yielders drank less and thus could also have been underprotected.
- This season, we have been monitoring blood Zinc in trough-treated cows from a number of herds. Samples were taken from cows in December before protection began, and the same cows are being re-sampled in February. So far, the first four herds’ results confirm our earlier suspicions that some Zinc sulphate trough-treated herds may be underprotected (minimal increase in blood Zinc concentration, compared with pre-Christmas levels).

Other Zinc Treatments

- Other Zinc treatments available are Zinc oxide (ZnO) drenching, and the use of Zinc-containing boluses (two are available at present: Time Capsule and Faceguard). Our 2008/09 trial at Ruakura showed that greater increases in blood Zinc levels and more reliable blood Zinc levels were achieved with the use of either daily ZnO drenching or Time Capsule boluses, than with trough-treatment. For Time Capsule boluses, there are four cattle products available, so it is important to know live weights, to get the correct boluses inserted. It is also important to read the labels carefully, to know when the bolus is likely to run out, and to re-dose as required.