Dairy Farm Trial, Lancashire UK

December 2017 – April 2018

Trial Protocol:-

Aim - to use components of the "NRG System" to influence energy balance in a dairy herd and to monitor the effects.

A college herd of 170 cows in milk, that was commercially managed, was used for the trial. The herd was housed in cubicles for the winter, being fed a TMR/PMR with access to Out Of Parlour Feeders (OOPF) with MultiDos Liquid Feeder.

Four components of NRG System were used here;

- **"NRG Liquid Feed"**, (20MegaJoule ME/L flavoured liquid)
- **"AfiLab"** in-milk-line analysis and software
- **"Hanskamp OOPF"**, modern walk through out of parlour feeder
- **"Hanskamp Multodos"** Liquid Feeder on the OOPF, liquid feed delivery.
- (The fifth component, Feed Passage Coating, was not present.)

Dry Cows and maternity pen had no access to OOPF.

After leaving the maternity pen a few days after calving, concentrates (at pre-trial levels) and "NRG Liquid Feed" at the following levels were fed:-

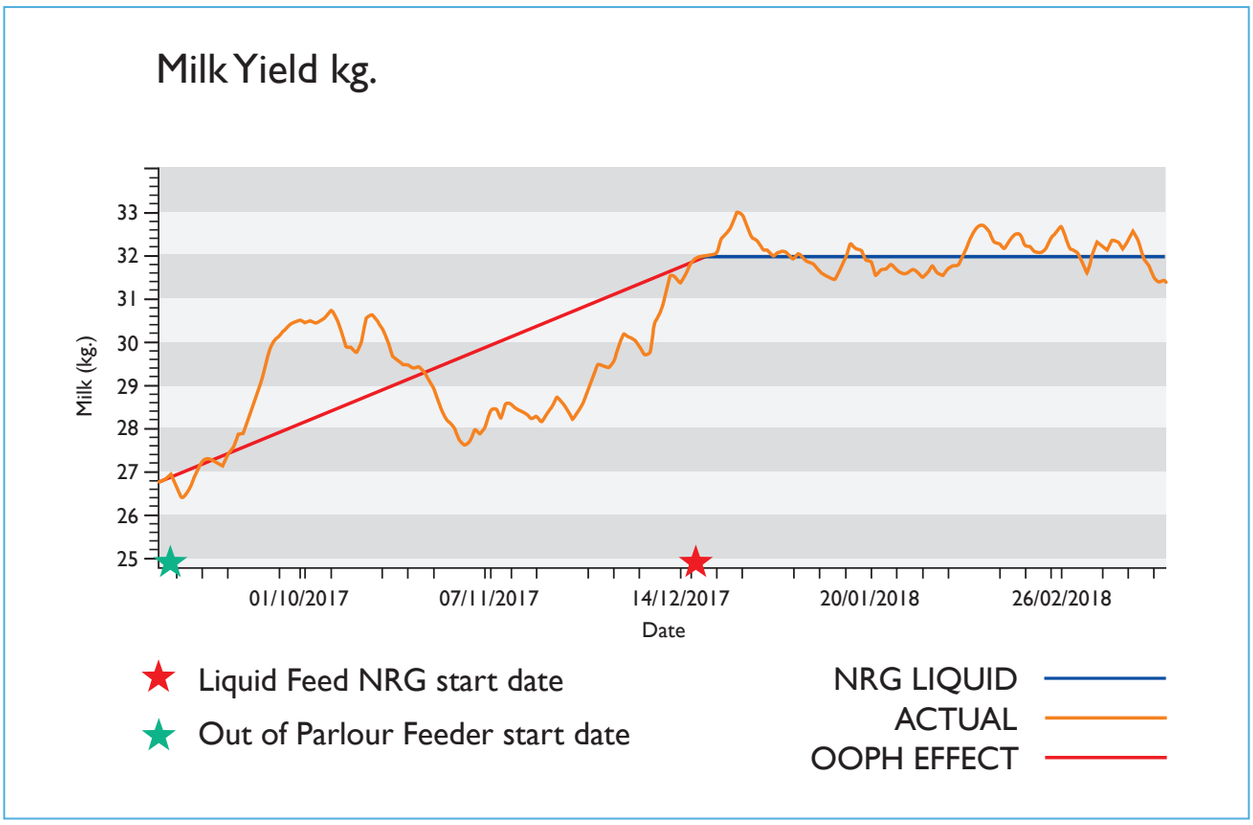
Lactation 1- 350 ml per day, split between the OOP feeds
Lactation 2 and above - 450 ml daily, split between the OOP feeds

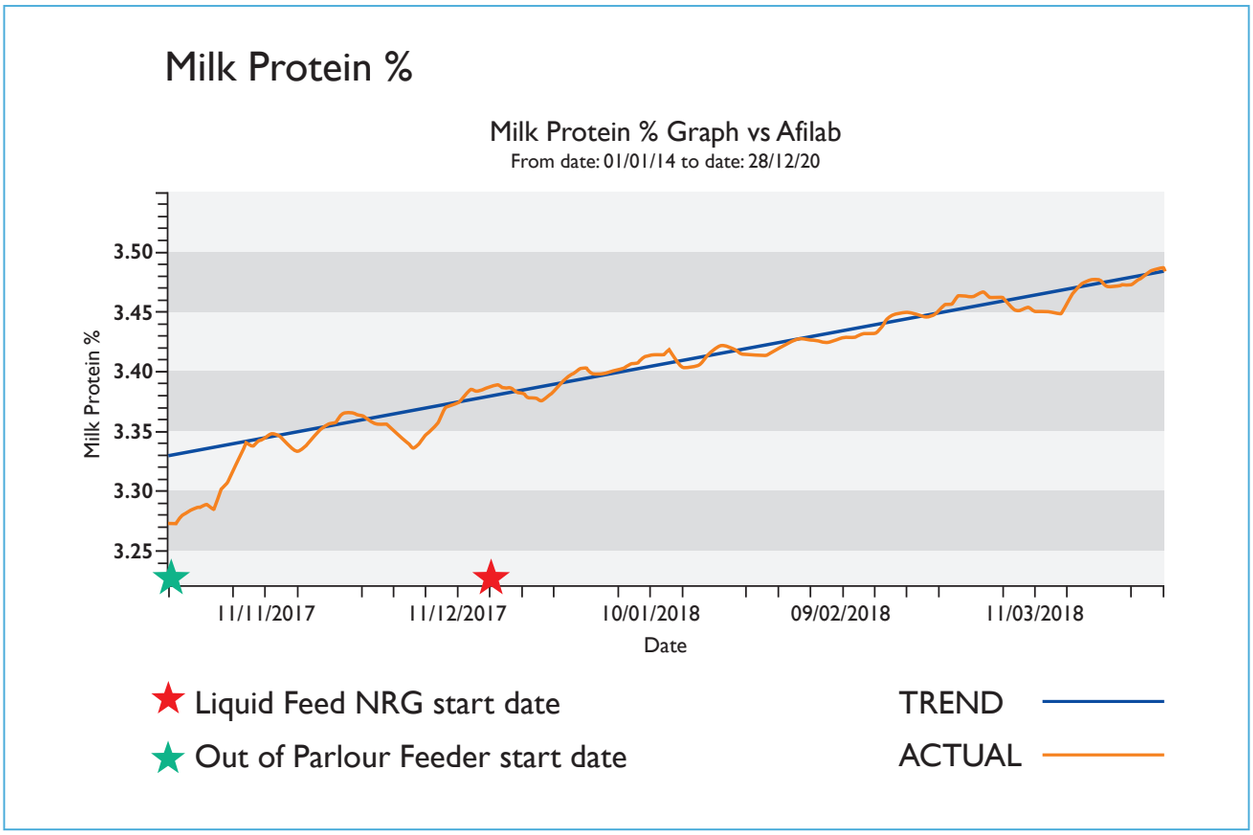
This continued until day 20 of lactation, or longer as they exceeded a certain milk yield; i.e 35L/day for lactation 1, 45L/day for later lactations.

The college's Afilab system was used to analyse milk, target the feed and present the results.

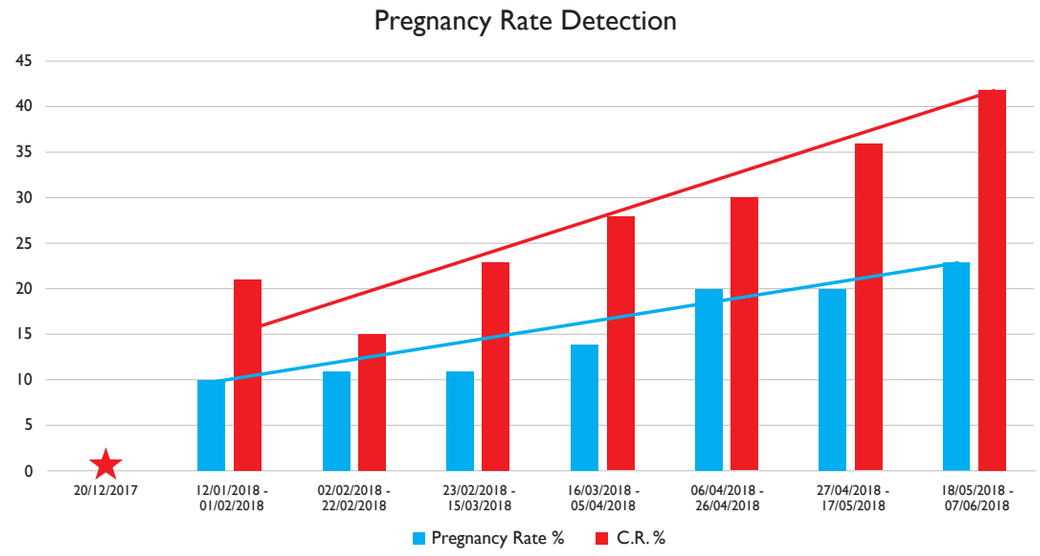
Results:-

"Afilab" presented data as graphs:-





Fertility

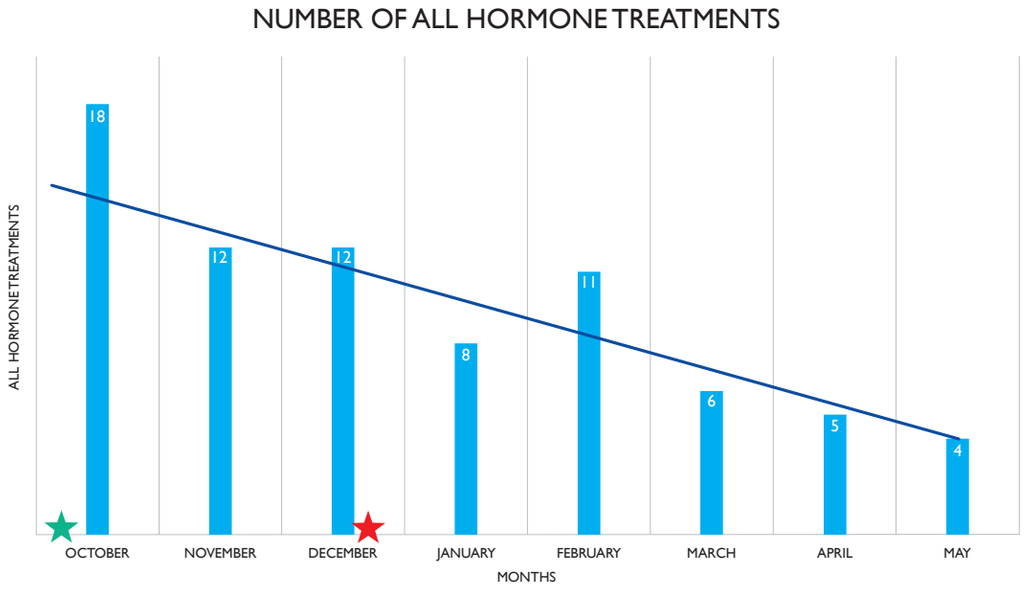


★ Liquid Feed NRG start date

CONCEPTION RATE

PREGNANCY RATE

Hormone Use



★ Liquid Feed NRG start date

★ Out of Parlour Feeder start date

TREND

G Shepherd Animal Health

Advice, Quality & Value

From this trial on a college dairy farm under commercial conditions, we can see how the herd's performance changed over time.

Conception and pregnancy rates both improved after an expected lag phase. The 20% increase in conception rate, when extrapolated forward improves the calving index by 40 days, saving over £20000 annually, without considering reduced cows culled.

Hormone medicine use reduced by over 50% saving 10 treatments per month approximating to saving of £1200 per year in cost of veterinary time & medicines.

This herds milk contract did not pay extra for the 0.1% increase in milk protein content, but this shows that energy supply and utilisation were improved.

The introduction of OOPF concentrate feeding showed improvement, but the gains continued following use of the NRG liquid feed.

Milk yield kg/cow/day showed a variable curve prior to NRG Liquid Feeding, but remained consistently high during the period that it was fed.

Improved yield across the herd of 5L/cow/day contributed a considerable extra income to the herd, although this would be offset by extra nutrition cost for 3 of the extra litres above the 2L of energy from the NRG Liquid. We calculalate the benefit to be £38000.

The sum of these benefits total to £59200 after extra concentrates deducted.
The cost of NRG Liquid for 170 head of mixed age cows for 120 days is £16320

The return on investment of the above benefits was 3.63:1

No measures of improved health, welfare and longevity have been made. No cost's have been considered for the OOPF's or Liquid feeders