



Background: The main aim of the **Systems Research Herd** at UCD Lyons Farm is to evaluate the feasibility (including profitability) of a higher input/output grazing system within a limited land holding scenario. The focus is on maximising milk solids output from the existing land holding which involves high output from individual cows and high stocking rates on the MP. This will occur most efficiently through maximising the use of grazed grass/home grown forage in the system and the strategic use of supplementation thereafter. Such a system might facilitate the successful expansion of the farm business without the need to buy or rent extra land, to buy stock, to acquire extra labour or to provide extra cow facilities. For the study purpose, stocking rate and concentrate inputs are fixed. For more details on the Systems Research Herd visit <http://www.ucd.ie/agfood/welcomemessage/systemsresearchherd/>.

Lyons Systems Research Herd Notes Week 12-06-17

Farm Details:

Area available: 13.76 ha (3.89 ha closed for silage/reseeding)
Current Stocking Rate (MP): 4.36
Farm Cover: 756 kg DM/ha (173 kg DM/cow)
Growth Rate: 80 kg DM/ha/day
Demand: 78.5 kg DM/ha/day
Supplement: Concentrate 5.0 kg/cow/day
Average DIM: 111 (range 49-143)



Grass Supply:

AFC on 12th June of June was 756 kg DM/ha (range 160 to 1500 kg DM/ha). We will continue to measure twice a week to manage quality and allocations.

2 paddocks (1.95 ha or 11% of MP) remain out for silage which will be cut this week hopefully. Grass seed sown on June 2nd is germinating and is beginning to grow in the warm damp conditions we are currently experiencing.

Feed Budget:

24 cows are now being fed 3.5 kg of concentrate as they have reached 120 DIM, with 1 cow on 8 kg of concentrate and the remainder (35) on 6 kg. This step down coincides with the passing of the most important period of the breeding season. Grass allowance has been increased to 18 kg DM per day to try and challenge the cows to eat as much grass DM as possible. Grass DM last week was 16.6% on average. Based on measurement of post-grazing herbage cover, grass DM intake last week was 17 kg/cow/day.

Fertiliser:

185kg/ha (151 units/acre) of Nitrogen has been spread on the MP to date. 250kg/ha (2 bags/acre) of 18-6-12 was applied to the reseeded ground.

Milk Production:

Average production is currently 31.0 kg/cow for the week 5th to 11th of June, at 4.12% fat and 3.42% protein (2.3 kg MS). SCC is 81,000. Fat, protein and SCC figures are based on milk recording results from the 23rd of May. Milk yield to date at 100DIM was 3043 kg (231 kg MS). 2016 yield to date at 97 DIM was 2893 kg (229 kg MS). We noted that there did not seem to be an issue with milk fat depression this year, and a preliminary look at the data shows that 8% of cows had milk fat < 3.3% in late May this year, compared with 19% at the same time last year.

EBI:

Below is the current EBI data for the systems herd, following the re-evaluation on 16th of May 2017.

EBI(€)	Milk (€)	Fert (€)	Calv (€)	Beef (€)	Maint (€)	Health (€)	Mgt (€)
129	43	49	37	-8.5	4.4	1.9	1.7

Milk (Kg)	Fat (Kg)	Prot (Kg)	Fat (%)	Prot (%)	Calv Int (days)	Surv (%)
63.6	9.3	5.9	0.1	0.1	-2.4	1.6



BCS:

Average BCS on the 9th of May was 3.0, with a range of 2.5 to 3.5. 88% of the herd was in the range 2.75 to 3.25.

Breeding Season 2017:

Breeding started on April 24th and will continue for 12 weeks. By the end of the 7th week of breeding, 97% of eligible cows have been served.

Once a Day Milking:

13 cows (22% of the herd) were put on OAD milking due to low BCS in early April. They are now all BCS 2.75 or above, and were put back on TAD last week. A preliminary look at the figures after 9 weeks on OAD milking indicates that BCS increased from 2.42 to 2.88. Yield dropped from 36 kg (2.7 kg MS) to an average of 31 kg (2.2 kg MS), and SCC increased from 38,000 to 46,000 for these cows over the 9-week period. One week after being put on back on TAD milking, average daily yield has increased by 3 kg in comparison to the yield in the last week of the OAD period.

Published Data:

Recent research published by our group in the Irish Veterinary Journal: "The prevalence, temporal and spatial trends in bulk tank equivalent milk fat depression in Irish milk recorded herds" is available at <https://irishvetjournal.biomedcentral.com/articles/10.1186/s13620-017-0092-y>.