 Lyons Systems Research Herd Notes

Background: It is widely recognised that grass-based systems offer a competitive advantage and will predominate in Ireland. However, grazing systems that have been developed to utilise large quantities of grazed grass have in the main been based on low-output per cow. In this scenario, high levels of profitability are possible through avid cost control and comparatively high stocking rates for grazing systems. There are now reasons to consider the development of grazing systems that are based on high-output per cow. These reasons include (i) concerns about increasing dairy cow numbers and environmental emissions, (ii) facilitating farm expansion post EU-milk quota removal for land limited and fragmented farms, (iii) lack of available skilled labour on farms to deal with expanding animal numbers. The rationale for this research is that a high output grass-based spring milk production system can be profitable when built on a foundation of good grassland management and meeting both milk and fertility targets and has a place in a sustainable Irish dairy industry.

For more details on the High Output Systems Research Herd visit
http://www.ucd.ie/agfood/welcomemessage/systemsresearchherd/.

Lyons Systems Research Herd Notes Week 24-05-2021

Farm Details:
Area available: 13.58ha (3.85ha out for silage)
Current Stocking Rate (MP): 3.9 LU/ha
Cover/LU: 230kg DM/LU
Farm Cover: 698kg DM/ha
Growth Rate: 69kg DM/ha/day
Demand: 66kg DM/ha/day
Average Concentrate Supplement: 6.8kg/head/day
Average DIM: 90 days

Current Daily Feed Budget: The herd are being offered on average 6.8kg of a 14% protein concentrate with non-native ingredients, a 12% protein concentrate with non-native ingredients, a 12% protein concentrate with native ingredients or a 12% protein concentrate with native ingredients supplemented with methionine. These diets will be offered as part of our 2021 nutrition trial until the start of the final grazing rotation in October. Cows at ≤60 DIM are offered 8kg/day (4/57 cows), cows at 61 - 90 DIM are offered 7.5kg/day (22/57 cows) and cows ≥91 DIM are offered 6kg/day (31/57 cows). Cows are also allocated 17kg of grass DM and grass DM is 17.1%.

Grazing Plan: The current AFC is 698kg DM/ha (range 50 – 1400kg DM/ha). Growth has only slightly increased due to the high levels of rainfall. Between 17th-23rd May, 32.5mm of rain fell at the nearby Casement Airport. However, this has not severely affected cleanouts as residuals are quite good and post-grazing conditions are still acceptable. These will be monitored closely in case the weather deteriorates further. One paddock will be mowed and baled this week with further surplus paddocks being taken out as needed to maintain grass quality. Cover/LU is high at 230kg DM but this figure will be reduced when we take surplus paddocks and the re-seed ground is removed from the rotation later this week. Target rotation length is set at 21 days.

Milk Production: Average production from 17th-23rd May was 34.7 kg/cow at 4.04% fat, 3.59% protein (2.65kg MS) and SCC is 46,000, based on milk recording results from 20th May. Last week the average MS production was lower at 2.47kg. This was in part due to a low milk fat % of 3.52. This may have been caused by a variety of factors including grass quality. Milk production from this time last year was 32.4 kg/cow at 4.06% milk fat, 3.47% protein, 2.41kg MS and SCC was 90,000.

Breeding season 2021: On 1st May, the breeding season began. It will last for 12 weeks; 10 planned weeks with an additional 2 weeks, if necessary, based on scans. Breeding is done by AI and will be done twice a day. Bulls selected are FR5860 (Saintbrigid Frank Joseph), FR6139 ((Ig)Lisduff Perception), FR5857 (Olcastletown Tiernan), FR6061 (Munta Mystic), FR5668 (Peak Chilton-Et), FR4573 (VH Praser), FR5971 (Viaductview Fiveo), FR2400 (S-S-I Headway Alltime-Et) and FR5239 (Hanrahan Olympus). This year we will be breeding 55/57 cows. Two cows are being omitted from breeding due to poor udder confirmation and locomotion and consistent SCC issues.

The weighted EBI averages of the bulls are:

EBI €	Milk SI	Fert SI	Calv €	Beef €	Maint €	Manag €	Health €	Milk kg	Fat kg	Prot kg	F+P kg	F%	P%
281	116	108	44	-9	4.1	2	17	360	22	18	40	0.13	0.09

These bulls were selected for high milk fat and protein milk PTA to ensure the milk fat and protein % stay positive in addition to selecting for a good health and high fertility sub-index values. Nine bulls were selected to increase bull team reliability. Heat detection is being done using Moo Monitors and scratch cards which will be read in the collecting yard.

In the third week of the breeding season (15th – 21st May), 17 cows were submitted for breeding (31% of breeding herd). Therefore, the 3-week submission rate is 95% (52/55 cows). The three cows that have not shown heat were scanned. Two of these cows had a corpus luteum so they were treated with prostaglandin to induce heat. The third cow had no sign of cyclical activity, so she was put on a PRID program.

	No. of cows submitted	% of breeding herd submitted
Week 1 (1st-7th May)	16	29
Week 2 (8th-14th May)	19	35
Week 3 (15th – 21st May)	17	31
3-week submission rate	**52**	**95**

BCS: On 19th May, 56 cows in the herd were assessed for BCS. The average was 3.06 with no cows having a BCS of ≤2.5 and 5.3% (3/56) having a BCS of ≥3.5.

EBI: This week, the May EBI evaluation was published. The average genetic evaluation of the herd is as follows:

EBI	Milk	Fertility	Calving	Beef	Maint.	Health	Mgt
202	71	78	42	-9.9	12	6	4

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(Top 1%)	(Top 1%)	(Top 5%)					
Milk kg	**Fat kg**	**Prot. Kg**	**Fat %**	**Prot. %**	**Calv int.**	**Surv %**	
166	13	10	0.11	0.08	-3.8	2.4	