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 13-07-2020

Farm Details:
Area available: 15.38 ha
Current Stocking Rate (MP): 3.71
Farm Cover: 696kg DM/ha
Growth Rate: 96kg DM/ha/day
Demand: 74kg DM/ha/day
Average Concentrate Supplement: 3kg/head/day
Average DIM: 148 days

Current Daily Feed Budget: With an increase in growth rates, cows are once again being offered concentrates based on their DIM. Cows that are 91-120 DIM (5/57 cows) will be offered 5kg and cows >120 DIM (52/57 cows) will be offered 2.5kg per day. During the recent drought period, each cow was offered on average 40kg of concentrates more than planned. Thus currently, cows will be offered 1kg of concentrates less than planned per day to offset the increased amount of concentrates used during the drought period. Therefore, cows are receiving on average 3kg of concentrates each day. The herd have been split into three groups and are being offered a 14% protein concentrate, 12% protein native formulation concentrate or a 12% protein non-native concentrate in the parlour. These diets will be offered as part of our 2020 nutrition trial until the start of the final grazing rotation in October. Estimated grass intake during this week was 20kg DM/cow.

Grazing Plan: The AFC on 13th July was 696kg DM/ha (range: 50-1594 kg DM/ha) with cover/LU of 176kg DM/cow. Using data from the nearby Met Eireann weather station at Casement Aerodrome, 31.7mm of rain fell in the last week. SMD has decreased from 14mm (5th July) to 1mm (13th July). Two re-seeded paddocks (1.82ha) will be sprayed for weed control a week before they will be grazed. Two paddocks (2.05ha) will be mowed for bales this week. Current grazing rotation is set at 16 days.

Milk Production: The average milk production from 28th June-5th July was 26.2 kg/cow at 4.05% milk fat, 3.50% protein, 1.97 kg MS and 78,000 SCC based on milk recording on 9th July. Average milk production this time last year was 26.5 kg/cow at 4.00% fat, 3.56% protein (2.00 kg MS) and SCC at 59,000.

Breeding season 2020: On 2nd May, the breeding season began and lasted for 10 weeks. The three-week submission rate was 91% (49/54 cows in the breeding herd) and the 24-day submission rate (2nd-26th May) was 98% (53/54 cows in the breeding herd). In the 10th week

of breeding (4th June-10rd July), there was 1 repeat serve. At a recent 30-day scan, 48 of 49 eligible cows were scanned pregnant for the first 6 weeks of breeding (91% of herd). The breeding season concluded on Friday 10th July.

	No. of cows submitted	**Total % of breeding herd submitted**
Week 1	15	28
Week 2	19	63
Week 3	15	91
Week 4	4	98
Week 5	0	98
Week 6	1	100
Total	**54**	**100**

As all cows have been inseminated with dairy bulls during the first 6 weeks of the breeding season, after which five selected beef bulls were used. From week 7 onwards, there were four repeat serves using four of these beef bulls. The beef bulls used were AU4309 (Deerpark Kevin), AU4563 (Johnstown Loyd 1039), AA4235 (Gabriel Mossy 1727) and LM2014 (Ewdenvale Ivor).

The weighted DBI averages (May 2020 evaluation) of the beef bulls are:

DBI €	Calving €	Beef €	Gestation Length PTA	Carcass Weight PTA
128	26	102	-0.25	17.9

BCS: On 15th July, 56 cows were assessed for BCS. Average BCS of the milking herd was 2.97 with 5.4% (3/56) with a BCS of ≤ 2.5 and 5.4% (3/56) with a BCS ≥ 3.5.