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 01-06-2020

Farm Details:
Area available: 15.61 ha (1.82 ha out for reseeding)
Current Stocking Rate (MP): 3.72
Farm Cover: 554kg DM/ha
Growth Rate: 40kg DM/ha/day
Demand: 30kg DM/ha/day
Average Concentrate Supplement: 8kg/head/day
Average DIM: 107 days

Current Daily Feed Budget: Cows are being allocated 8kg DM of grass, 8kg of grass silage DM and 8kg of a high energy concentrate. Usually the amount of concentrates each cow is provided with is based on DIM. However, due to the shortage in grass supply, all cows are being offered 8kg of concentrate regardless of DIM as a short-term strategy. 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.

Grazing Plan: The AFC on 2nd June was 554 kg DM/ha (range: 50-1308 kg DM/ha) with cover/LU of 149kg DM/cow. Using data from the nearby Met Eireann weather station at Casement Aerodrome, 10.7mm of rain fell in May. This is far less than the average rainfall for May in 2017-2019 which was 36.9mm. The SMD on 2nd June was 80mm. Due to drought conditions, 8kg DM of grass silage will be included in the diet until grass growth rates increase. The grazing rotation is set to 25 days.

Milk Production: The average milk production from 25th-31st May was 31 kg/cow at 4.31% milk fat, 3.49% protein, 2.42 kg MS and 42,800 SCC based on milk recording on 27th May. Average milk production this time last year was 30.5 kg/cow at 4.3% fat, 3.5% protein (2.38 kg MS) and SCC at 87,000.

Breeding season 2020: On 2nd May, the breeding season began. It will last for 12 weeks; 10 planned weeks with an additional 2 weeks, if necessary, based on scans. The three-week submission rate was 91% (49/54 cows in the breeding herd). On day 22 of the breeding season, 4 more cows were submitted for breeding. Therefore, the 24-day submission rate (2nd-26th May) was 98% (53/54 cows in the breeding herd). One cow, who was 51 DIM on 1st June,

will be scanned on 4th June. If this cow is found not to be cycling, a PRID will be administered. As of 1st June, 2 cows were bred for the second time.

	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
Total	**53**	**98**

Breeding is done by AI and will be done twice a day. Bulls being used are FR4728 (Kilfeacle Pivotal), FR5593 (Oakglen Cosmic), FR4573 (VH Praser), FR4439 (Killalough Samir), FR5239 (Hanrahan Olympus), FR4785 (Glenaboy Ronald), FR4608 (Fly-Higher Mod Cade-Et), OPH (Olcastletown Phanthom), FR2314 (Gortcreen Sebastain), FR4686 (Mountdudley Joker) and FR5085 (Lars-Acres Super Nerd).

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%
266	105	108	41	-7.9	3.6	4	12.1	244	20.8	14.2	35	0.19	0.1

These bulls were selected based on high milk production and components while maintaining high fertility. Eleven bulls were selected to increase bull team reliability. Heat detection is being done using scratch cards and Moo Monitors which are being read in the collecting yard.