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 08-06-2020

Farm Details:
Area available: 15.61 ha (1.82 ha out for reseeding)
Current Stocking Rate (MP): 3.65
Farm Cover: 513kg DM/ha
Growth Rate: 16kg DM/ha/day
Demand: 29kg DM/ha/day
Average Concentrate Supplement: 8kg/head/day
Average DIM: 114 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 8th June was 513kg DM/ha (range: 75-1322 kg DM/ha) with cover/LU of 141kg DM/cow. The amount of rain that that fell last week was less than what was predicted. Using data from the nearby Met Eireann weather station at Casement Aerodrome, 5.3mm of rain fell in the last week and the SMD on 7th June was 78mm. 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 1st-7th June was 29 kg/cow at 4.53% milk fat, 3.57% protein, 2.35 kg MS and 48,000 SCC based on milk recording on 3rd June. Average milk production this time last year was 29.2 kg/cow at 4.08% fat, 3.58% protein (2.24 kg MS) and SCC at 52,000.

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) and the 24-day submission rate (2nd-26th May) was 98% (53/54 cows in the breeding herd). In the 5th week of breeding (30th May-5th June), six cows that were submitted on week 2 received a repeat serve. This is 32%

of the 19 cows that were submitted on week 2. At the 30-day scan, 13/15 cows (87%) that were submitted in the first week were found to be pregnant.

	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
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.