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 18-05-2020

Farm Details:
Area available: 15.61 ha (1.82 ha out for reseeding)
Current Stocking Rate (MP): 3.72
Farm Cover: 504 kg DM/ha
Growth Rate: 39 kg DM/ha/day
Demand: 37 kg DM/ha/day
Average Concentrate Supplement: 7.5 kg/head/day
Average DIM: 93 days

Current Daily Feed Budget: Cows are being allocated 16 kg DM of grass and an average of 7.5 kg of a high energy concentrate. Cows ≥90 DIM (30/59 cows) are on 6 kg, cows ≥60 DIM but <90 DIM are on 7.5 kg (23/59 cows) and cows <60 DIM on 8 kg (6/59 cows). The herd have been split into three groups and are being offered on average 6.8kg of 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. This week cows will be fed out 6kg of grass silage at grass, this may increase to 7-8kg due to decreasing grass growth rates. Grass DM% was 18.1% and daily estimated grass intake was 16.4kg DM/cow.

Grazing Plan: The AFC on the 18th May was 504kg DM/ha (range: 50-1355 kg DM/ha) with cover/LU of 135 kg/cow. Using data from the nearby Met Eireann station, Casement Aerodrome, only 0.7mm of rain has fallen in the last week. Due to this lack of rainfall and the AFC dropping to less than 550 kg/ha, silage will be introduced in the diet on Wednesday 20th May to slow the rotation down and reduce the grass demand on the milking platform. This should increase the grazing rotation to 25 days. Two paddocks (1.82ha) have been ploughed for re-seeding.

Milk Production: Due to health issues and a very low BCS, a cow will be dried off and leave the herd this week. Therefore, the average production from 11th-17th May for the 58 cows in the herd was 32.0 kg/cow. On May 6th, milk recording data was 4.13% milk fat, 3.47% protein, 2.69kg MS and 35,000 SCC. Average milk production this time last year was 32 kg/cow at 3.98% fat and 3.47% protein (2.38 kg MS) and SCC of 90,000. From 20th May, milk recording will be carried out on a weekly basis.

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. As mentioned

previously, one cow has been omitted from the breeding herd due to health issues leaving the breeding herd at 54 cows. In the second week of the breeding season (9th-15th May), 19 cows were submitted for breeding. This means that as of 15th May, 34 cows were submitted for breeding (63% of breeding herd).

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 Moo Monitors and scratch cards which will be read in the collecting yard.