**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 07-12-2020**

**Farm Details:**
Area available: 17.43 ha
Average Concentrate Supplement: 1.5kg/head/day
Average DIM: 295 days
Milking cows: 48/57 cows

**Current Daily Feed Budget:** Cows with >180 DIM would normally be offered 3kg/day of concentrates. However, cows have been offered 1.5kg/day of concentrates since Thursday 3rd December to ensure the herd's BCS profile remains on target. This rate of feeding will continue until dry-off. All cows are now being offered an 18% protein concentrate until dry-off. The herd is also being allocated 15kg DM of silage per day.

**Milk Production:** The average milk production from 30th November – 6th December was 13.6 kg/cow at 5.61% milk fat, 3.77% protein, 1.28 kg MS and 76,000 SCC based on milk recording on 3rd December. The herd's average yield to date is 7600kg/cow (range: 5230kg – 9805kg) and 610kg MS/cow (range: 389kg MS – 756kg MS). The average predicted 305d yields are 7825kg/cow and 632kg MS/cow. Average milk production this time last year was 14.3 kg/cow at 5.04% fat, 3.63% protein (1.24 kg MS) and SCC at 144,000.

**Dry-off:** Cows that yield ≤9kg milk for four consecutive days or that are within 60 days of their expected 2021 calving date will be dried off. Cows that have recorded at least one SCC recording at ≥200,000 during the year will be provided with antibiotic dry cow therapy. Their dry period will be >65 days due to the antibiotic withdrawal period. Of the 52 cows that are due to calve next year, 25% (13/52 cows) will receive antibiotic treatment and sealer while 75% (39/52 cows) will just receive a sealer. As of 7th December, 9 cows have been dried off. On 8th December, 13 more cows are scheduled to be dried off due to their 2021 calving date. One of these 13 cows will receive antibiotic treatment.

**BCS:** On 30th November, the BCS of all 50 milking cows in the herd was assessed. The average BCS was 3.1 with 1 cow being ≤2.5 (2%) and 5 cows being ≥3.5 (10%).

**And finally…** This week's notes will be the final notes of 2020. We will resume weekly notes in the spring and the 2020 annual report will be published on the Systems herd weekly notes website. For more updates, please follow us on Twitter at @UCD_SystemsHerd. Finally, we would like to wish all our readers a merry Christmas and best wishes for 2021.