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 20-04-2020

Farm Details:
Area available: 15.36 ha (2.16 ha out for bales)
Current Stocking Rate (MP): 3.78
Farm Cover: 751 kg DM/ha
Growth Rate: 72 kg DM/ha/day
Demand: 66 kg DM/ha/day
Average Concentrate Supplement: 7.6 kg/head/day
Average DIM: 65 days

Current Daily Feed Budget: Cows are being allocated 18 kg DM of grass and an average of 7.6 kg of a high energy concentrate (cows > 60 DIM on 7.5 kg, cows < 60 DIM on 8 kg). The herd are being offered on average 7.6kg of a 14% protein concentrate, a 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. Grass DM was 19.1%. Estimated grass intake was 16.4kg DM/cow.

Spring Grazing Plan: The AFC on 20th April was 851 kg DM/ha (range: 50-1904 kg DM/ha) with cover/LU of 257 kg/cow. We have closed off 2 paddocks (2.16 ha) with a cover of 1550 kg DM /ha for over sowing with white clover. These paddocks were reseeded in June 2019. They will be cut for bales first early next week. This has reduced the AFC to 751 kg DM/ha and our cover/LU is now 199 kg DM/cow. We plan to spray off 1.8 ha of the milking platform early next week for reseeding. The average daily growth for the previous week was 72 kg DM/ha.

Pre-breeding scan: On Thursday 16th April, pre-breeding examinations on the cows that calved >21 days took place. In total, 56 cows were examined. Each cow was checked for endometritis using a Metricheck device which was also combined with ultrasonography of the uterus and ovaries. The mucus was scored on a 0-3 scale (Figure 1) with cows scored 2 or greater deemed to have endometritis. The uterus was scanned and graded on a scale of 0-4, with cows scoring 2 or greater deemed to also have endometritis (Savc et al, 2016). Using this combined method, the prevalence of endometritis in the examined population was 5% (3/56). Cows deemed to have endometritis were treated. The type of treatment was based on whether a CL (corpus luteum) was present on the ovaries or not. Cows with a CL present received an injection of prostaglandin. Cows with no CL present were given an intrauterine infusion of cephapirin. All treated cows will be re-checked to see if further treatment is warranted. Based on the presence of a CL as an indication of the resumption of cyclicity, 86% (48/56) of those examined had at least one CL. One cow had a CL present and a mucus score

of 2 so she was treated with prostaglandin and given an intrauterine infusion of cephapirin (metricure) in the days following this**.** Two cows were diagnosed with a follicular cyst and both were treated with gonadotropin-releasing hormone (GnRH) analogue. They will be rechecked to see if further treatment is warranted.

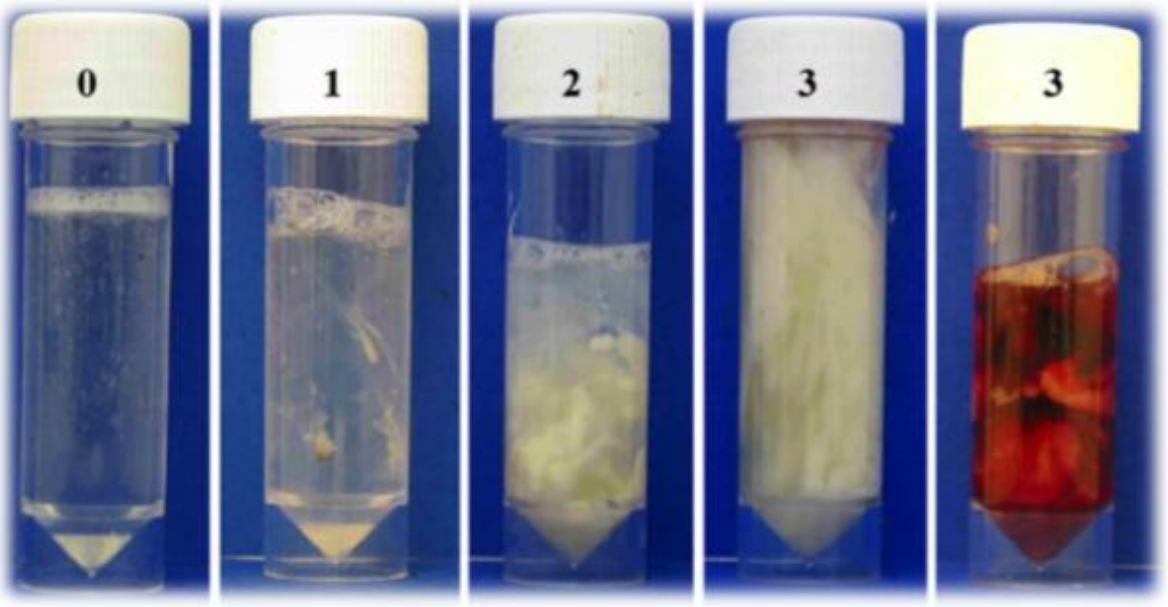

Figure 1. Vaginal discharge scoring for Metricheck (Williams et al., 2005)

- Score 0 = clear or translucent mucus;
- Score 1 = mucus containing flecks of white or off-white pus;
- Score 2 = discharge containing ≤50% white or off-white mucopurulent material;
- Score 3 = discharge containing ≥50% purulent material, usually white or sanguineous

BCS: The average BCS of 58 cows that were assessed for BCS on Thursday 16th April was 3.0. Of these cows, 3.5% (2/58) had a BCS of ≤ 2.5 and 8.6% (5/58) had a BCS of ≥ 3.5.

Milk Production: Average production from 13th-19th April was 34.7 kg/cow at 4.13% fat, 3.4% protein, 2.7 kg MS and SCC was 70,750. This milk yield is higher than milk production from this time last year (33.3 kg/cow) and milk recording details are calculated with results from 8th April.