Managing Dairy Cows: current management advice from Teagasc

Key messages:

- Grass growth is recovering – it will be important for farmers to get back out grazing this week (forecast is for dry weather and higher temperatures), thereby increasing grass intakes and reducing the reliance on (purchased) fodder
- A good starting point for all farmers would be to walk all of their farm, complete a grass cover and assess areas of the farm suitable for grazing
- Revise your supplementary feed levels, especially given the drier and warmer conditions forecasted, and the expected increase in available grass supplies
- Once ground conditions allow, "catch up" on spring fertiliser nitrogen applications
- Make a plan for the area to be closed for silage, including the fertiliser to be applied; a decision on the exact date of closing should be delayed for another seven to ten days.

The following guidelines are for the next seven to ten day period and will be updated next week.

1. Current grass growth rate

Figures from PastureBaseIreland indicate that grass growth has picked up (see Appendix 1). Soil temperatures have also increased (see Appendix 2); the soil temperature at 100mm across almost 30 sites on Wednesday afternoon (11th April) was over 8.0 °C (approx. 1.0 °C lower on midland and northern sites). Given this information, it is expected that grass growth will improve further over the coming week. Indeed, previous research has indicated that for every 1°C that soil temperature is above 6°C , that grass growth will increase by 15 kg DM/ha.

That said, ground/ grazing conditions remain extremely challenging on many farms around the country at the time of writing. This means that on-off grazing may have to be practised in order to get efficient utilisation of grass. While this brings some extra work, it will allow for increased inclusion of grazed grass in the diet, while getting the sward set up for the remainder of the grazing season (very important!). It is vital that regrowths are protected and that ground which has previously been damaged is not damaged for a second time.

2. Assessing grass covers and grazing conditions

It is vitally important that all farmers walk their entire farm by the end of this week – this is both to assess the quantity of grass available and also the suitability of the farm for both grazing and fertiliser application. This cannot be judged from the farmyard or the roadway!

On heavier, or mixed, soil farms identify the drier areas that can take livestock or machinery; (re)start grazing in these areas and prioritise these areas for fertiliser application.

3. Fertiliser for the grazing area

Many farmers have not got the targeted amount of fertiliser N applied (70 units N per acre by 1st April) and consequently need to "catch up". The next target is to have 100 units N per acre spread by 1st May. Teagasc advice regarding fertiliser application is as follows:

- Where no fertiliser N has been spread to date (and little or none of the area has been grazed) – blanket spread the entire farm (avoid heavier parts if necessary) with one bag Urea (46% N) per acre as soon as practical; follow with a further 40 – 50 units N per acre in approx. three weeks
- Where some fertiliser N has been spread (maybe the first round of N has been applied) – blanket spread the entire farm with two bags 18:6:12 + S per acre
- Ensure that sulphur (S) is part of any fertiliser (straight or compound) spread

Remember, that in most years 90% of grass growth occurs after mid-April, so it is vital that fertiliser is applied now to maximise grass growth for the remainder of the year.

4. Supplementation and transitioning for high levels of supplementation to lower levels

Low grass covers at the start of the second round can increase the risk of displaced abomasum problems. This is due to lack of gut fill (due to restricted intakes) and inadequate NDF fibre content in low-cover grass. Feeding high levels of parlour concentrate (>6kg) to stretch grass supply can exacerbate the problem. Advised actions are:

- There should be at least 1,000 kg DM per ha cover on the next 2-3 grazing paddocks before removing high fibre supplements (forage/pulps) from the diet. This helps to ensure gut fill and fits well with grazing rotation management rules.
- Where second round paddocks have covers at 700-900 kg DM per ha, it is advised to continue feeding hi-fibre supplements until covers increase to target. This may be 3-4kg DM of silage or silage-plus-pulp feed fed at night for a few days until pre-grazing covers reach 1,000 kg DM per ha
- Feed a maximum of 6kg parlour concentrate per day where pre-grazing covers are tight, making up the difference with a 3rd feed as previously described.

As grass covers improve, it will be possible to drop back from high levels of concentrate feeding. This will need to be done gradually over 7-8 days. If cows are transitioning from all silage diets, concentrate can be reduced by 2kg on day 1-2 and by another 2kg in 3-4 days following that. Midday feeds etc. can be phased out when there is adequate grass on the farm to allow daily grazing.

Check that Cal-Mag levels in concentrate are now correct for level of feeding. A daily intake of 60g (3% inclusion at a 2kg feed rate) is required for grass tetany prevention. Specify your target meal feeding rates when ordering feed.

5. Fertiliser for the silage area

Farmers will need to replenish grass silage supplies this summer, for next winter. Therefore it is vitally important that adequate amounts of N, P and K are applied to silage fields at closing.

The recommended rates of N, P and K for first cut silage are:

- N – 100 units per acre (125 kg per ha)
- P (Index 3) – 16 units per acre (20 kg per ha)*
- K (Index 3) – 100 units per acre (125 kg per ha)*

* Higher rates of both P and K required at lower soil indices

As soon as growth allows (probably in ten days on many dairy farms) silage ground should be closed and fertiliser applied. Applying the correct fertiliser, including P and K, will lead to earlier harvesting and higher yields.

Fertiliser requirements for grass silage

First cut grass silage nitrogen (N), phosphorus (P) and potassium (K) requirements for 5t/ha DM and suggested fertiliser programmes.

Soil index P and K	N kg/ha (units/ac)	P kg/ha (units/ac)	K kg/ha (units/ac)	Fertiliser options at silage closing time[1,2,3]	
				No slurry	Cattle slurry 3,000 gallons/ac
1	125 (100)	40 (32)	175 (140)	2.5 bags/ac 0-7-30 3.7 bags/ac CAN	3 bags/ac CAN
2	125 (100)	30 (24)	155 (120)	2.5 bags/ac 0-7-30 3.7 bags/ac CAN	3 bags/ac CAN
3	125 (100)	20 (16)	125 (100)	4 bags/ac 16-4-18 1.3 bags/ac CAN	3 bags/ac CAN
4	125 (100)	0	0	3.7 bags/ac CAN	3 bags/ac CAN

1 Index 3 soils = replacement of silage P and K offtake. For index 1 and 2 soils, apply additional (above Index 3 rates) P and K after first cut to build soil P and K levels. For example, apply as slurry or fertilisers such as 24-2.5-10/0-7-30, 50% K, etc.

2 Assumes 1,000 gallons/ac cattle slurry contains N-P-K = 6-5-32. Urea or protected urea can be used as an alternative N source to CAN.

3 Caution: K application rates >90kg/ha at time of closing for silage may increase risk of grass tetany.

6. On-farm scenarios

The following table outlines a number of potential scenarios on dairy farms at present.

Scenario	Recommendations
1. < 30% of farm area grazed	• Walk the farm; identify next paddocks for grazing; use on/ off grazing to protect re-growths and avoid damage • Blanket spread N (if not already applied) • Skip and close silage ground • Keep an eye on recovery on first paddocks grazed; aim for a cover of 1,100 – 1,200 kg DM/Ha before starting the second rotation
2. 70 – 80% of farm grazed	• Complete the first rotation • Start the second rotation and aim for a 20 day rotation i.e. allocate 1/20th (5%) of the farm each day • Fill the gap with concentrates • Try to create a wedge (many of the paddocks will have similar (low) covers) by skipping every second paddock with a similar cover
3. 100% farm grazed and started second rotation	• Most likely to be grazing 'low' covers, < 1,000 kg DM/Ha • Target a 25 day second rotation (allocate 1/25th or 4% of the farm per day) • Fill the gap – see advice re supplementation • Review on 7 – 10 days with a view to (1) reducing supplementation and (2) removing areas for silage (thereby increasing grazing demand)

7. Planning for winter 2018

It may seem somewhat strange that having just dealt with a fodder crisis, that you should now start to plan for the next winter feeding period. But the fact of the matter is that peak grass growth occurs between mid-April and mid-August and you need to plan to make as much winter fed as possible during this period; and also have all second cut silage harvested by 1st August at the latest.

Farmers should complete the a Fodder Plan for Winter 2018/19 now and use this to:

- Identify the area to be closed for 1st cut silage (Teagasc recommends that the farm can be stocked at 4.0 LU/Ha during the 1st cut silage period). Higher stocking rates (herd demands) are possible on those farms capable of grass growth rates of > 70 kg DM/Ha during May/ June, but a stocking rate of 4.0 LU/Ha is a 'comfortable' place to be; should growth exceed 70 kgDM/Ha during the first cut period, surpluses should be removed as bales.
- Identify whether a surplus or deficit fodder situation is likely for Winter 2018/19. Given that reserves have been totally depleted, farmers must aim to maximise the yield of quality silage (see note above re fertiliser requirements). Where a fodder deficit is forecast, I t is better to source additional fodder early and there is an opportunity to talk to both contractors and other farmers about supplying fodder (silage, surplus bales, whole crop, maize, fodder beet).
- Plan to harvest the 1st cut by 10th June and the 2nd cut before 1st August.

Appendix 1: Grass growth update from PastureBaseIreland (11/04/2018)

Summary of current situation on farms

- Mean farm cover 602 (1071 – 380) kg DM/ha; 195kg DM per LU;
- Mean stocking rate 2.70 LU/ha
- Grass growth 15kg DM/ha (42 – 6kg DM/ha); Grass demand 24kg DM/ha (past 7 days)
- Grass growth on farms measured in the last two days is 22kg DM/ha (40-10).
- % of Farm Grazed – 61% (100-10)
- Mean Grass allocation (8kg DM/LU (15 - 0) – Some farms are not grazing, conditions too wet
- Concentrate input 4kg (8 – 3)- higher levels offered with limited levels of grazing
- Silage 3.5kg (10 – 0) – Some farmers still in full time
- Fertiliser is not up to date on most farms, some farms have no Nitrogen or slurry spread. This is an issue for those farms.
- Grass DM content – 14-17% currently.

Predicted grass growth for next week using the Moorepark Grass Growth Model (with nitrogen up to date);

Curtins-Moorepark Farm; 45kgDM/Ha (Last week measured growth 25kgDM/Ha)

Ballyhasie- Cavan; 49kgDM/Ha (Last week measured growth 30kgDM/Ha)

Table 1 shows the soil temperature from the month of March for three sites for 2018 and 2017. Soil temperatures are recovering and are forecasted to come back on track. Grass growth based on Figure 2 should be close to 25-35kg DM/ha, at present its 15kg DM/ha (from last Monday). We expect this level to rise substantially this week (farmers who have covers completed in last two days are growing 22kg DM/ha). Current soil temperature has recovered in recent days and is now varying around 8°C. In the south we have had very heavy rainfall between Friday and Sunday (50mm), grazing stopped these days and cows will be back grazing in the coming days, however Sunday's rainfall was localised.

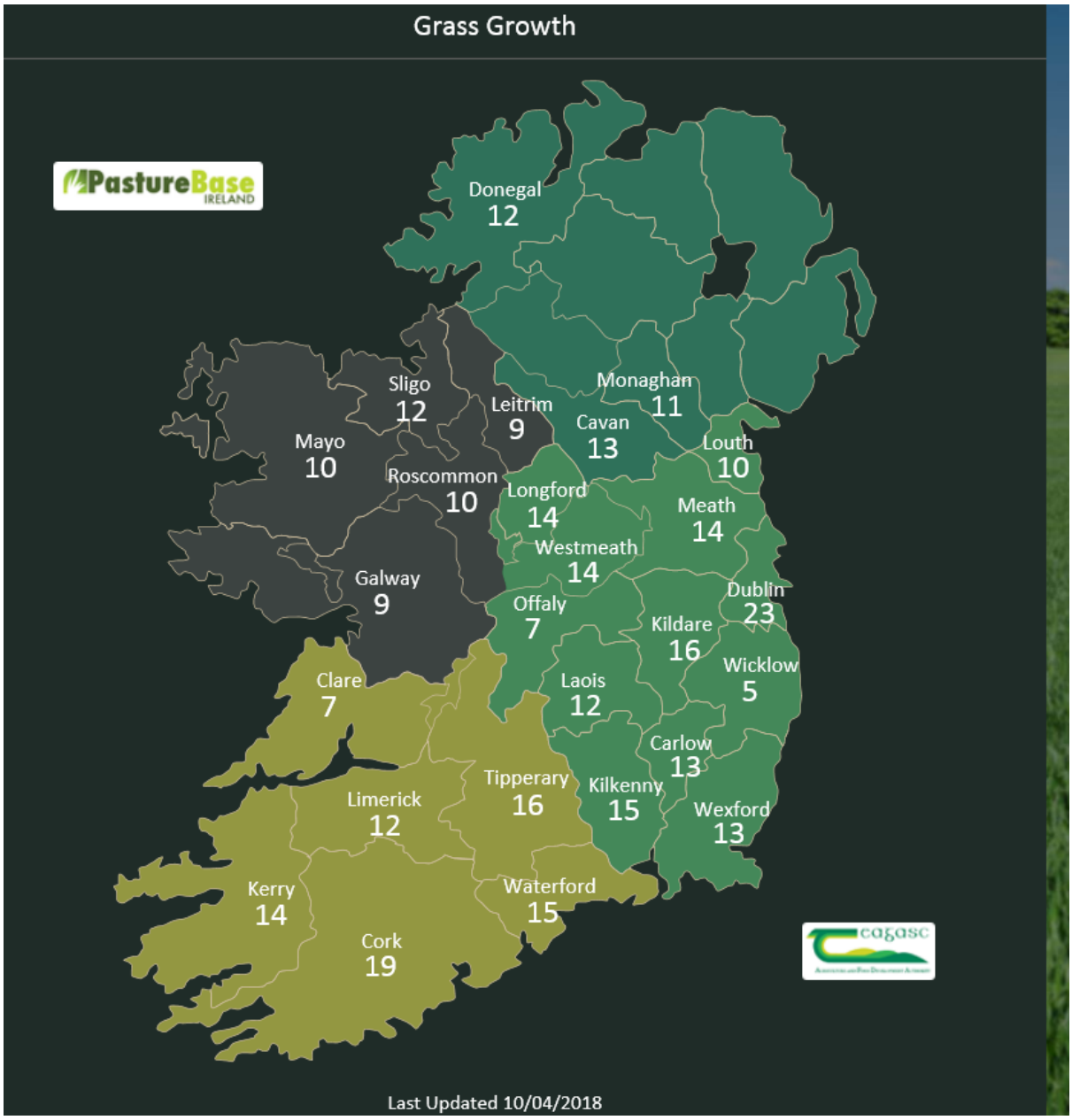
Availability of silage is tight, with many farms importing fodder, and concentrate levels probably are double normal levels. Many farms have been forced indoors over the weekend as ground conditions are poor on many farms as a result of high rainfall over the past number of days. If ground conditions improve, many farms have large areas to graze, which is positive. This week we expect a correction and compensation in growth rates, which ideally should see stock returning to pasture and increased grass allocations.

Moorepark has two technicians visiting dairy farms condition scoring – feedback from is that cow condition is holding on farms.

Table 1. Soil temperatures and rainfall (1/3/2018 – 7/4/2018)

	Athenry		Moorepark		Ballyhaise	
	2018	2017	2018	2017	2018	2017
Mean soil temp (°C)	4.9	8.4	5.2	7.9	4.6	7.4
Rainfall (mm)	87	133	132	112	81	71
Mean soil temp (°C) previous three days	6.3	10.9	8	10.0	6.0	11.1

Figure 1. Current grass growth by county on farms recording data in PastureBase Ireland across the 26 counties



Note – some counties have low growth due to lack of measurement in last number of days

Appendix 2: Soil temperatures

Note: soil temperatures for 30 commercial dairy farms available at https://soiltemp.remotesignals.ie/