



**Penwith  
Landscape  
Partnership**

# Spring Grazing Management

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## Aims

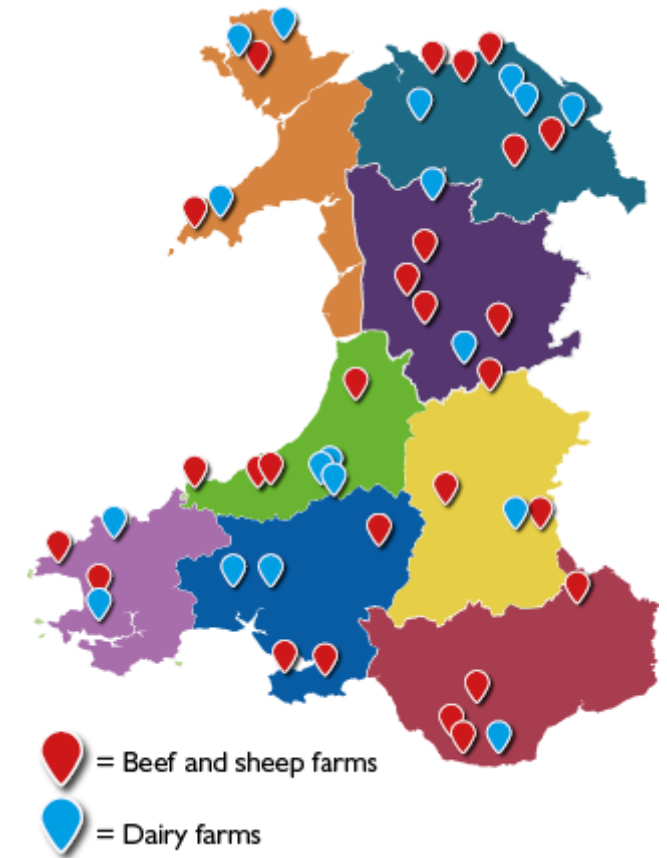
- Graze whole farm by end of April.
- Transition stock to pasture ready for Peak Growth.
- Build/Manage grass wedge.

## Benefits

- Grazing stimulates Grass Growth
- Increased animal performance – high quality diet
- Improve quality
- Increase tillering
- Build a grass wedge for 2<sup>nd</sup> round
- Reduce workload
- Reduce cost

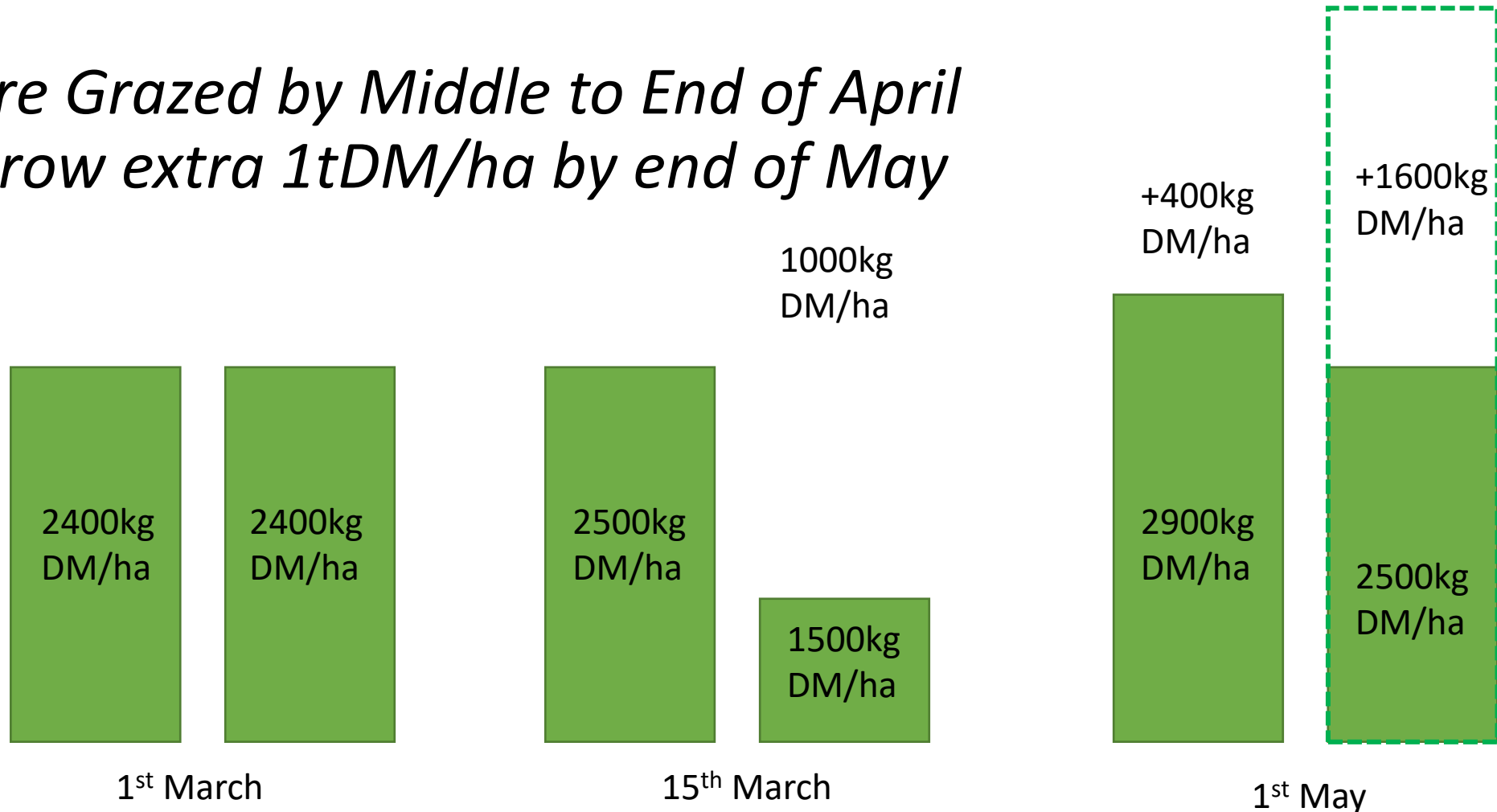
# Pasture Quality

Group	Region	March		
		ME%	Protein %	DM %
Dairy	6			
Dairy	1	12.9	30.5	22.1
Beef and Sheep	1	13	26.6	24.2
Dairy	2	12.4	23.8	21.6
Beef and Sheep	2	12.1	23.2	27.7
Dairy	3	12.9	26.8	22.2
Beef and Sheep	6			
Beef and Sheep	3	13.1	22.3	24.7
Beef and Sheep	4	11.9	32.3	16.7
Beef and Sheep	5	12.9	27.8	17.6
Dairy	4	12.4	28.7	15.7
Dairy	5	13	25.3	21.9
Beef and Sheep	7	12.4	26.1	22.8
Dairy	7	12.5	24.3	19.4
Dairy	8	12.4	28.9	19.7
Beef and Sheep	8	12.6	21.8	23.7
	16			
<b>Average</b>		<b>12.6</b>	<b>26.3</b>	<b>21.4</b>

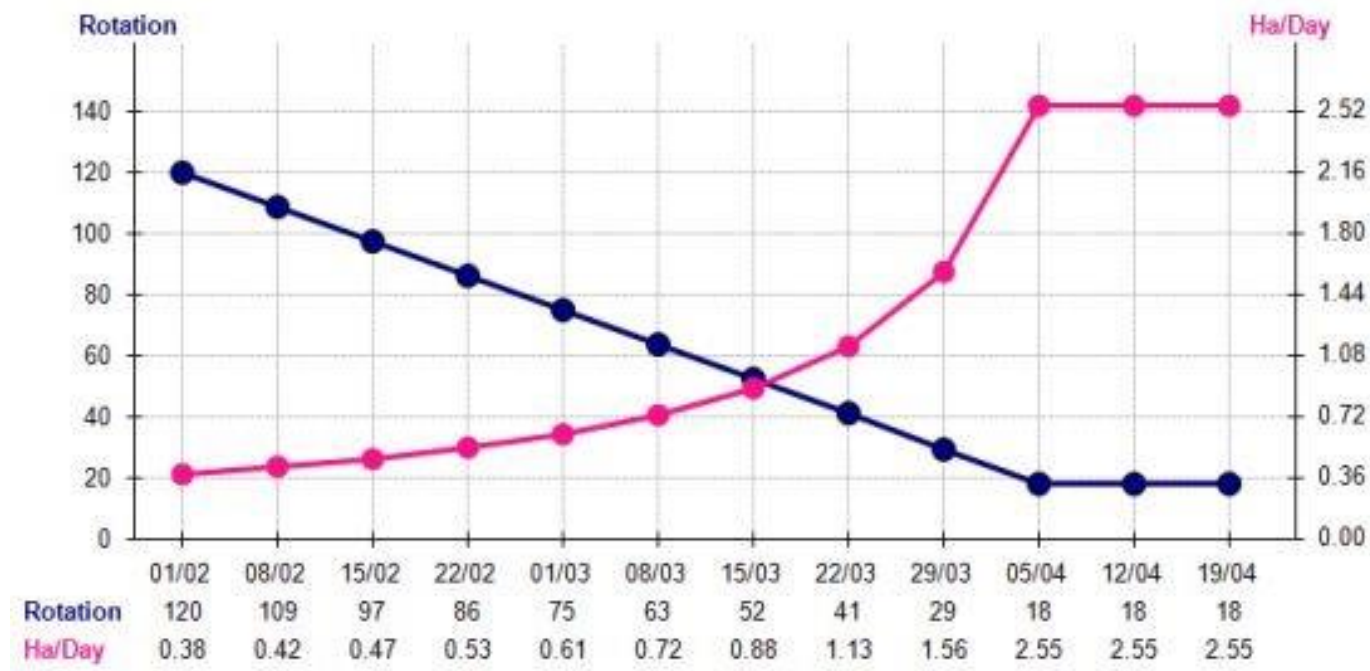
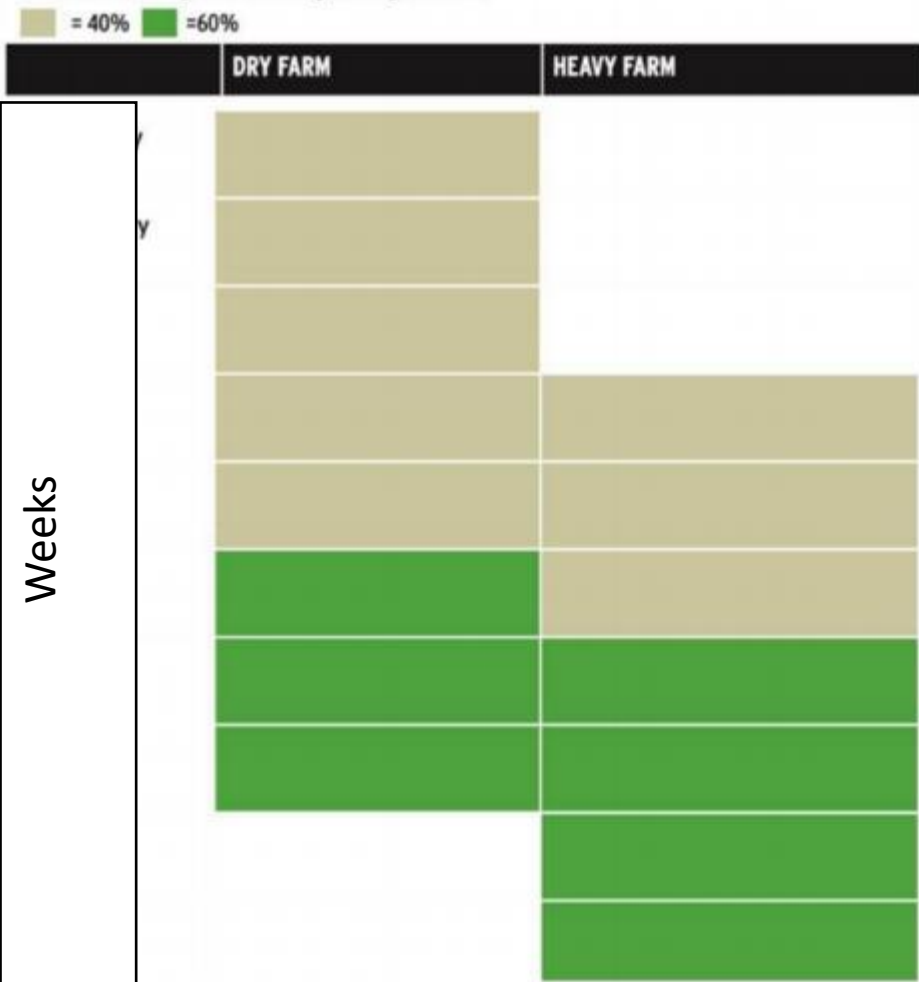


# Rules of Thumb

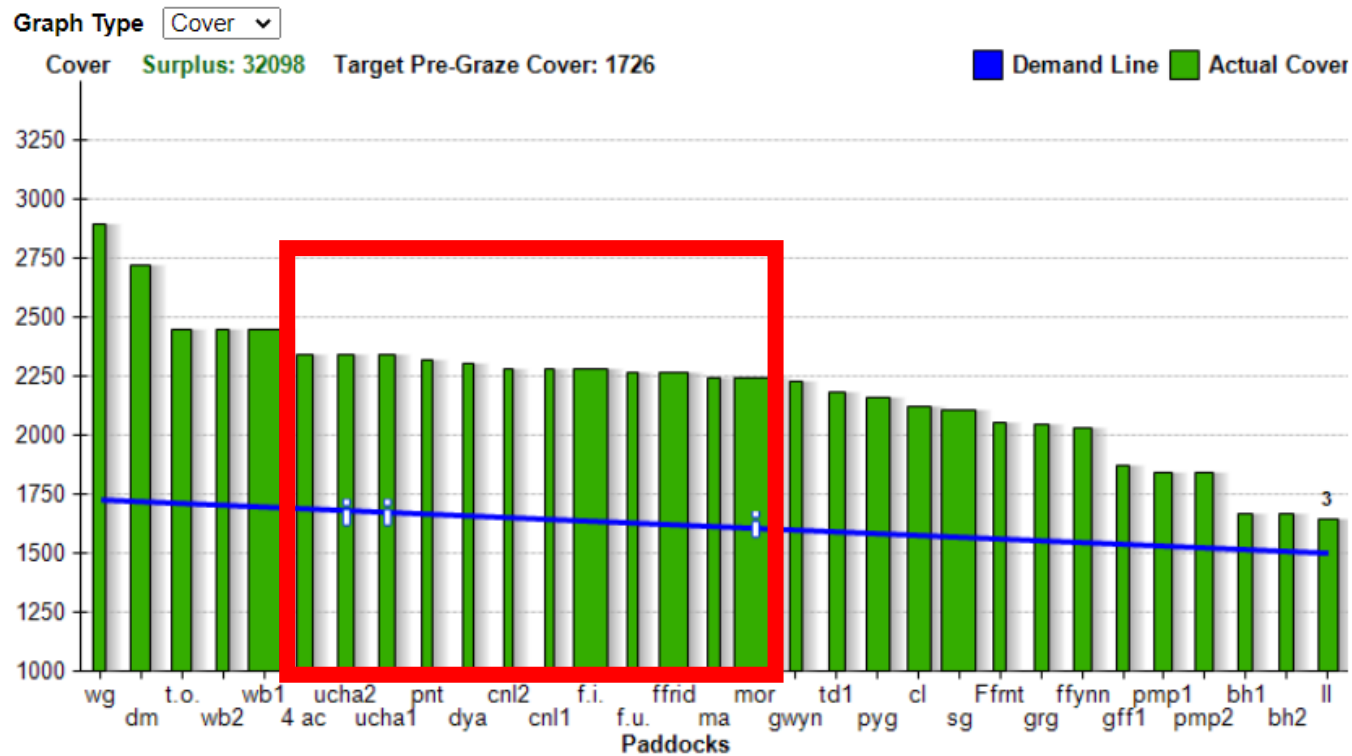
*Pasture Grazed by Middle to End of April will grow extra 1tDM/ha by end of May*



### Turnout during the main grazing season



# Spring – Measure grass - Graze Mid Wedge



1. Lower covers = more area required = less pressure on soil and cows
2. Quicker recovery/higher growth following grazing
3. Easier to train cows to achieve target residual



# Cows



# Cows



- Lactating animals are the highest priority on farm, they should be fed to appetite (where possible).
- It is key that they are “fully fed” up to and at peak lactation (6 weeks post calving).
- Milk produced at peak sets the total volume of milk produced in that lactation
  - Effects annual milk yield per cow / weaning weight of calve.
  - Genetic Potential
- This means maintaining a minimum average pasture height of 10cm. (2400kgDM/ha)

Or

- Grazing covers between 2800-3400kgDM/ha down to 1500-1700kgDM/ha
  - 1ha = 100 cows for 24h
- Beef breeds can reach their peak yield from forage alone.
  - Concentrate feed only justified is when pasture quantity is in-sufficient.
- For some dairy breeds concentrate feed may be justified if the yield response is high.
  - Check the return on investment.



# Ewes

# Ewes

- Lactating animals are the highest priority on farm, they should be fed to appetite (where possible).
- It is key that they are “fully fed” up to and at peak lactation (3 weeks post lambing).
- Milk produced at peak sets the total volume of milk produced in that lactation
  - Effects total weight of lamb weaned per ewe.
  - Genetic Potential
- This means maintaining a minimum average pasture height of 6cm. (1800kgDM/ha)
- Concentrate feed only justified if the pasture height drops below target.



# Growing Cattle

# Growing Cattle

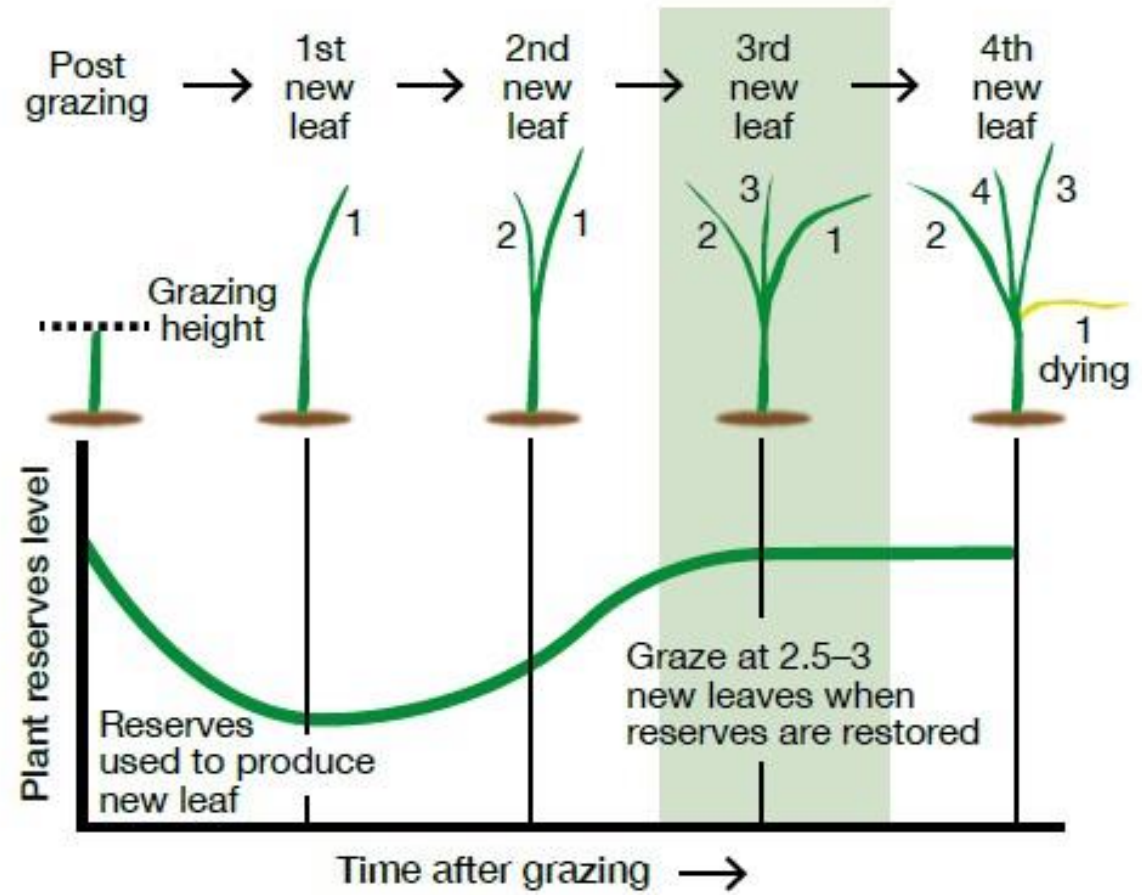
- Growing/finishing cattle or replacement heifers.
- Aim to transition them to pasture so their rumen is fully adjusted before peak pasture growth arrives (May).
  - This means these animals can be fed ad-lib, consuming as much of the low-cost pasture as possible to efficiently convert it into liveweight gain at a very low cost.
- To aid transition process step-down any concentrate feeding over a period of 4 weeks towards 0kg
- Allow the animals time to adjust by letting them out to graze by day and in by night.
- Concentrate feeding at pasture to native breeds (pure or dairy cross) or replacement heifers is not recommended due to current feed cost.
  - Instead, the focus must be on grazing management.
- For continental breeds feeding a source of high energy i.e., grain might be required during the finishing phase to achieve suitable fat cover to meet specification.



# Increasing Pasture Productivity

# Increasing Pasture Productivity

- How long animals spend in one field is the single factor which has the greatest influence on the amount of pasture grown (tonnes Dry Matter per Hectare).
- Moving animals to a new field more often provides the plants with a rest between grazing events, this allows them time to replenish their energy reserves and re-grow ready for the next grazing event.



# Increasing Pasture Productivity

- Moving from set-stocking to rotational grazing can increase the total pasture grown by 4tDM/ha and pasture utilised (eaten) by 3.3tDM/ha!
- This is equivalent to applying 220kgN/ha (5 bags/acre) at a cost of £410/ha (£160/Acre)\*.

Grazing Management Technique	No of Days / Paddock	Annual Yield (tDM/ha)	Utilisation (%)	Pasture Utilised (tDM/ha)	% Increase (from Set Stocking)
Set Stocking	30+	6	50%	4.3	0%
Continuous (Variable)	10-20	8.5	60%	5.1	20%
Rotational Grazing	3-6	10.2	75%	7.6	56%
Adaptive Multi-Paddock Grazing	1-2	10.2	80%	8.2	92%

Source: AHDB. 2020. *Planning Grazing Strategies for Better Returns*. Available online: <https://ahdb.org.uk/knowledge-library/planning-grazing-strategies-for-better-returns>



# Increasing Pasture Productivity

- Each group of animals needs to have access to a minimum of 5 fields or paddocks.
- The field should have a water supply and secure boundary.
- If the group cannot graze a field down to a suitable height within 6 days, the field should be split in half or as required with temporary electric fencing (or other materials).
- If you don't have enough fields then consider combining groups of animals together or dividing more fields in half.

# Increasing Pasture Productivity

- On-Time - 1-5 days
- Rest Period - 20-45 days
- No of Fields/Paddocks (per group of animals)
  - Minimum: 4-6
  - Ideal: 8-10
  - Perfect: 12-16
- Field/Paddock Size (Max) = Area which can be eaten in 5 days with the group of animals
  - Increase by increasing the number of animals in the group
  - Can graze sheep and cattle to achieve larger groups (“Flerd”)

# Increasing Pasture Productivity

**Rest Period (Days) = (No of paddocks x On-time) – On-time**

		Number of Paddocks/Fields (Per Group)							
		4	6	8	10	12	14	16	
On Time (Days)	1	[Black]							
	2	[Black]		[Green]					
	3	[Black]			[Green]				[Yellow]
	4	[Black]		[Green]	[Green]			[Yellow]	[Yellow]
	5	[Green]	[Green]	[Green]	[Green]	[Yellow]	[Yellow]	[Orange]	
	6	[Green]	[Green]	[Green]	[Yellow]	[Yellow]	[Orange]	[Orange]	
	7	[Green]	[Green]	[Yellow]	[Yellow]	[Orange]	[Orange]	[Orange]	

Rest Period	
[Green]	Spring/Summer
[Yellow]	Dry Summer/Early Spring /Autumn
[Orange]	Autumn/Winter

# Increasing Pasture Productivity

$$\text{Rest Period (Days)} = (\text{No of paddocks} \times \text{On-time}) - \text{On-time}$$

		Number of Paddocks/Fields (Per Group)							
		4	6	8	10	12	14	16	
On Time (Days)	1	[Black]							
	2	[Black]		[Green]	18	22	26	30	
	3	[Black]		[Green]	21	27	33	39	45
	4	[Black]	[Green]	20	28	36	44	52	60
	5	[Green]	15	25	35	45	55	65	75
	6	[Green]	18	30	42	54	66	78	90
	7	[Green]	21	35	49	63	77	91	105

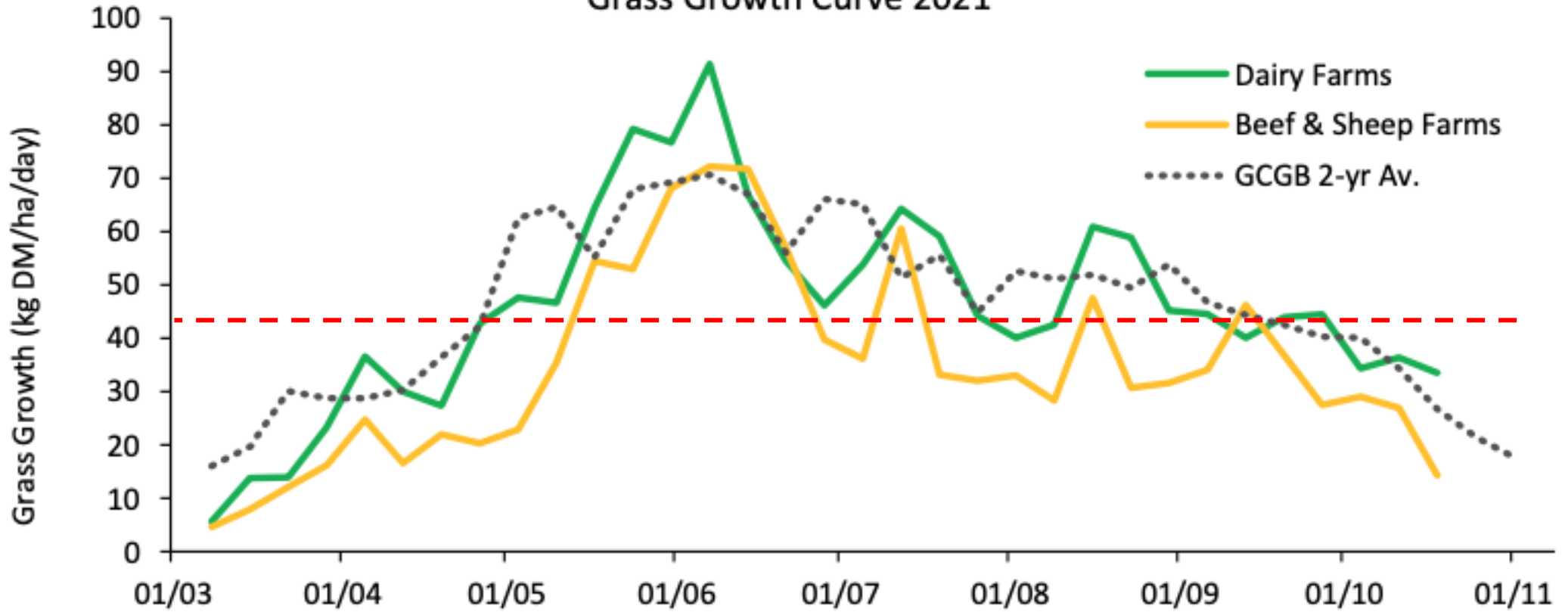
Rest Period	
[Green]	Spring/Summer
[Yellow]	Dry Summer/Early Spring /Autumn
[Orange]	Autumn/Winter

# Increasing Pasture Productivity

Area Required for a group of animals?

Pasture Growth (kg DM/ha)	Ewes/ha	Ewes/acre	Suckler cows/ha	Suckler cows/acre	Growing cattle/ha	Growing cattle/acre	LSU/ha
12	5	2	0.8	0.3	1.8	0.7	0.6
16	7	3	1.1	0.4	2.4	1.0	0.8
20	9	4	1.3	0.5	2.9	1.2	1
24	11	4	1.6	0.6	3.5	1.4	1.2
28	13	5	1.9	0.8	4.1	1.7	1.4
32	15	6	2.1	0.9	4.7	1.9	1.6
36	16	7	2.4	1.0	5.3	2.1	1.8
40	18	7	2.7	1.1	5.9	2.4	2
44	20	8	2.9	1.2	6.5	2.6	2.2
48	22	9	3.2	1.3	7.1	2.9	2.4
52	24	10	3.5	1.4	7.6	3.1	2.6

Grass Growth Curve 2021





# Nitrogen

# Artificial Nitrogen

## Soil Health

- Soil Testing (Full Mineral)
- PH Correction
- Soil Structure Assessment & Correction
- P&K Correction

## Fertiliser

- Artificial N - timing, rates
- Slurry Management, timing and rates
- Foliar Application of N



# Artificial Nitrogen

## Grazing Management

- Reduce on-time per paddock (don't eat the re-growth)
- Appropriate rest periods
- Worth 1000-3000kgDM/ha/year (more than most people were growing with N fert!)

## Farm Business

- Assessment of farm stocking rate and feed demand (kgDM/ha) compared to natural production potential of land.
- Removal of animals not performing
- Reduction in stocking rate (sell trading stock)
- Review of Alternative fodder sources (rent land, buy silage bales)

# Artificial Nitrogen

- Return on Investment linked to Response Rate
- For artificial nitrogen to provide an economic return at current prices the response rate (kgDM grown per kgN applied) needs to be better than 12.5:1.

Pasture growth rate	Pasture growth (kg DM/ha/day)	Response (kg DM/ kg N)	Time for full response (weeks)
Slow	10	5	10 - 14
Moderate	20 – 40	10	6 – 8
Fast	50 -70	15	5 - 6
Rapid	80	20	3 – 4

# Artificial Nitrogen

To achieve this requires good conditions:

- New or Improved Leys
- PH>6
- P&K Index 2 or above
- Soil temperature above 8 degrees
- Apply what the plant needs.

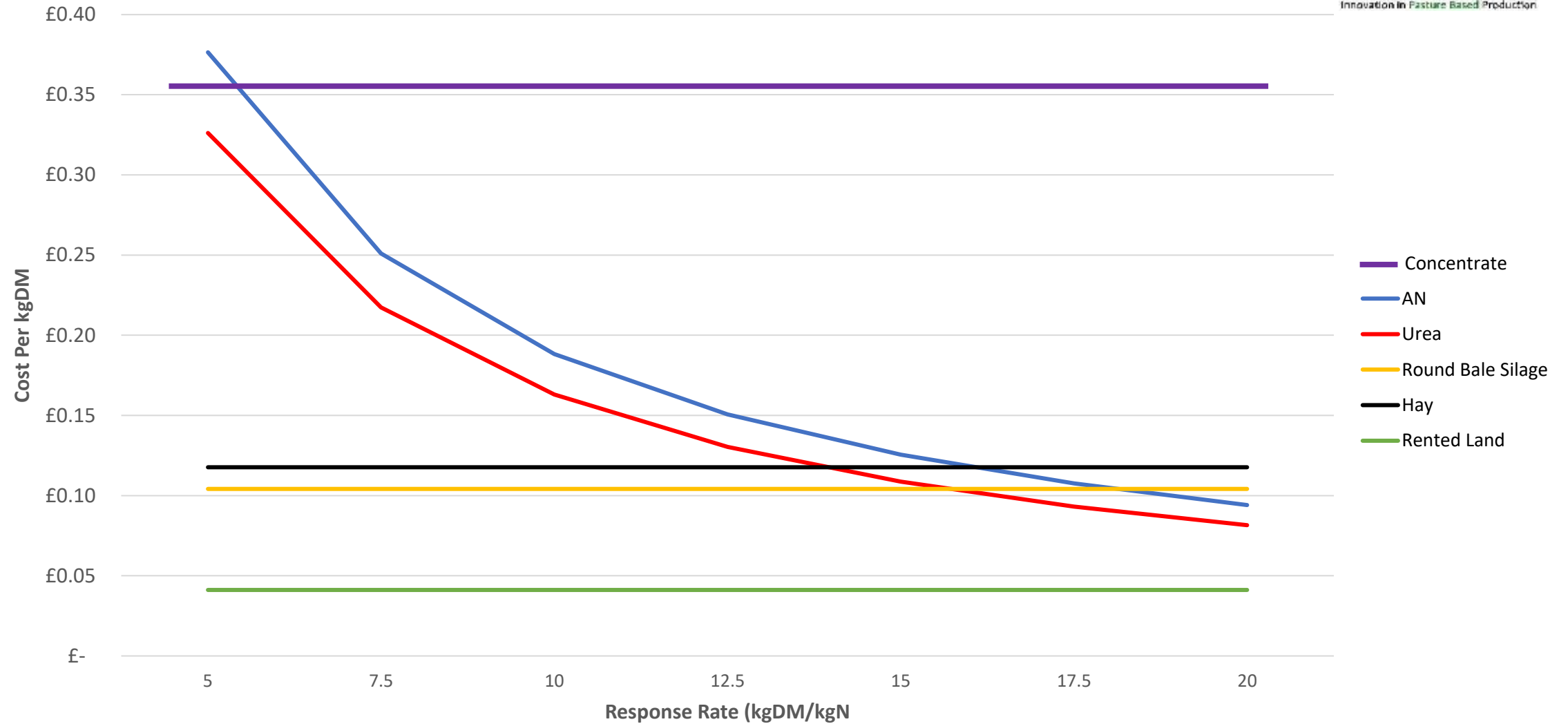
Recommended application rates based on soil temperature are:

- 8-10°C Max 20kgN/Ha
- 10-12°C Max 30kgN/Ha
- >12°C Max 40-50kgN/Ha

# Artificial Nitrogen

Response Rate (kgDM/kgN)	Cost (£/kgDM)	
	AN	Urea
5	£ 0.38	£ 0.33
7.5	£ 0.25	£ 0.22
10	£ 0.19	£ 0.16
12.5	£ 0.15	£ 0.13
15	£ 0.13	£ 0.11
17.5	£ 0.11	£ 0.09
20	£ 0.09	£ 0.08

### Cost of Supplementary Feed



# Artificial Nitrogen

- You can measure soil temperature using a garden thermometer.
- Best time to measure is 10am from a representative part of the field at depth of 100mm (4”).
- It is also recommended to leave a strip un-spread to assess the impact the application had.
- If pasture is measured using a plate meter the strip can be used as a “control” area to calculate the actual benefit.

With nitrogen, as with all farm inputs in 2022 ask yourself - “if I use this input, what will my return on investment be?”



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