



White clover can deliver on our dairy farms

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Presentation Overview

- Background
- We know it works
- Grazing management
- How do we get white clover on farms
- Take home messages

Need to consider white clover now

- Industry economic gain
- Nitrogen (N) source
- Environmental benefits
- Nitrates Derogation
 - Grass seed mixtures must contain clover
- Target of 20%-25% average white clover content

€68
million
/year

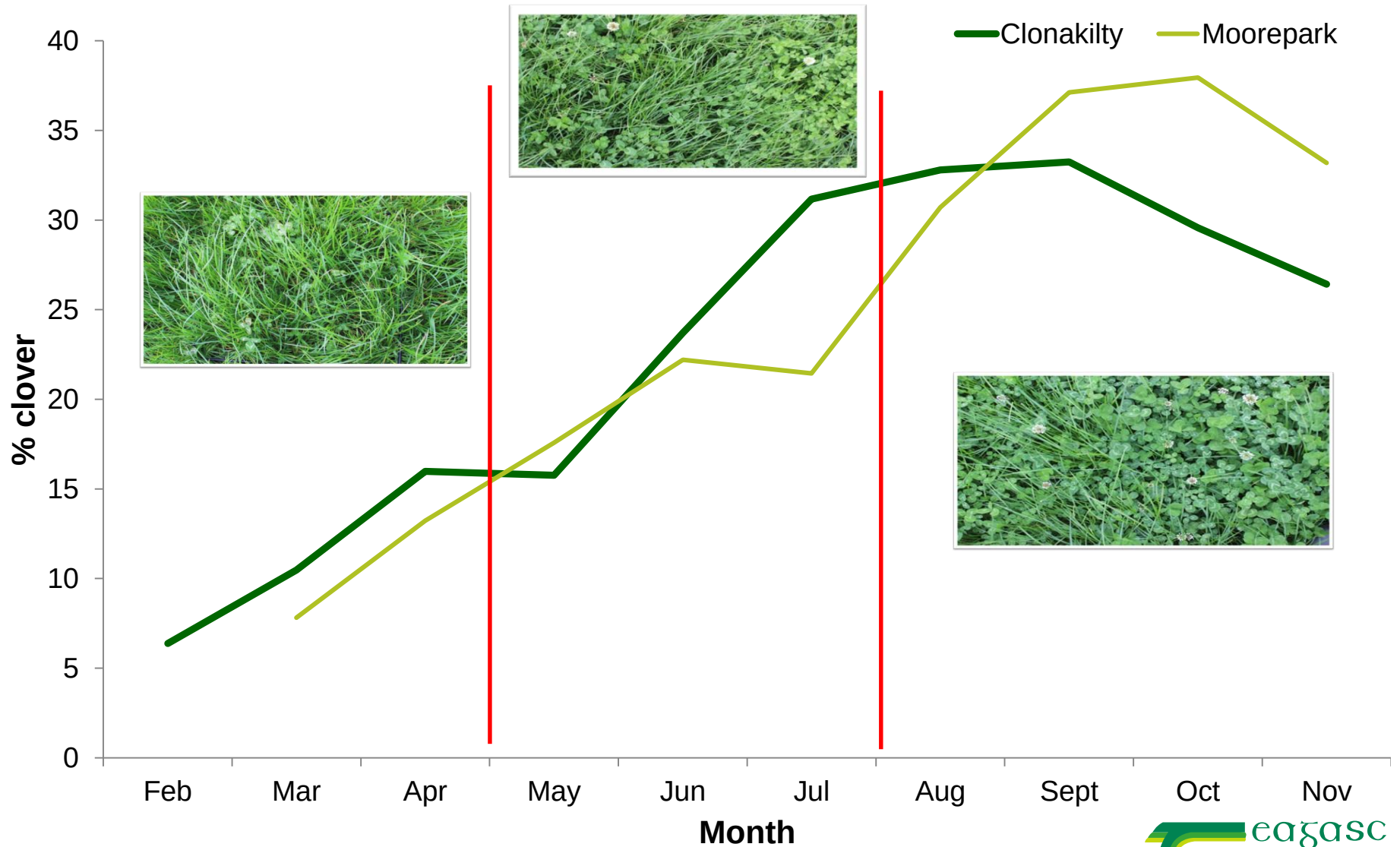


We know it works

White clover farm systems research

- Moorepark experiment (2013 – 2016)
 - Grass only 250 kg N/ha/year
 - Grass + white clover 250 kg N/ha per year
 - Grass + white clover 150 kg N/ha per year
 - Stocking rate - 2.75 LU/ha
- Clonakilty experiment (2014 – 2017)
 - Grass-only swards
 - Grass + white clover sward
 - Stocking rate - 2.75 LU/ha
 - Nitrogen fertiliser application rate – 250 kg N/ha per year

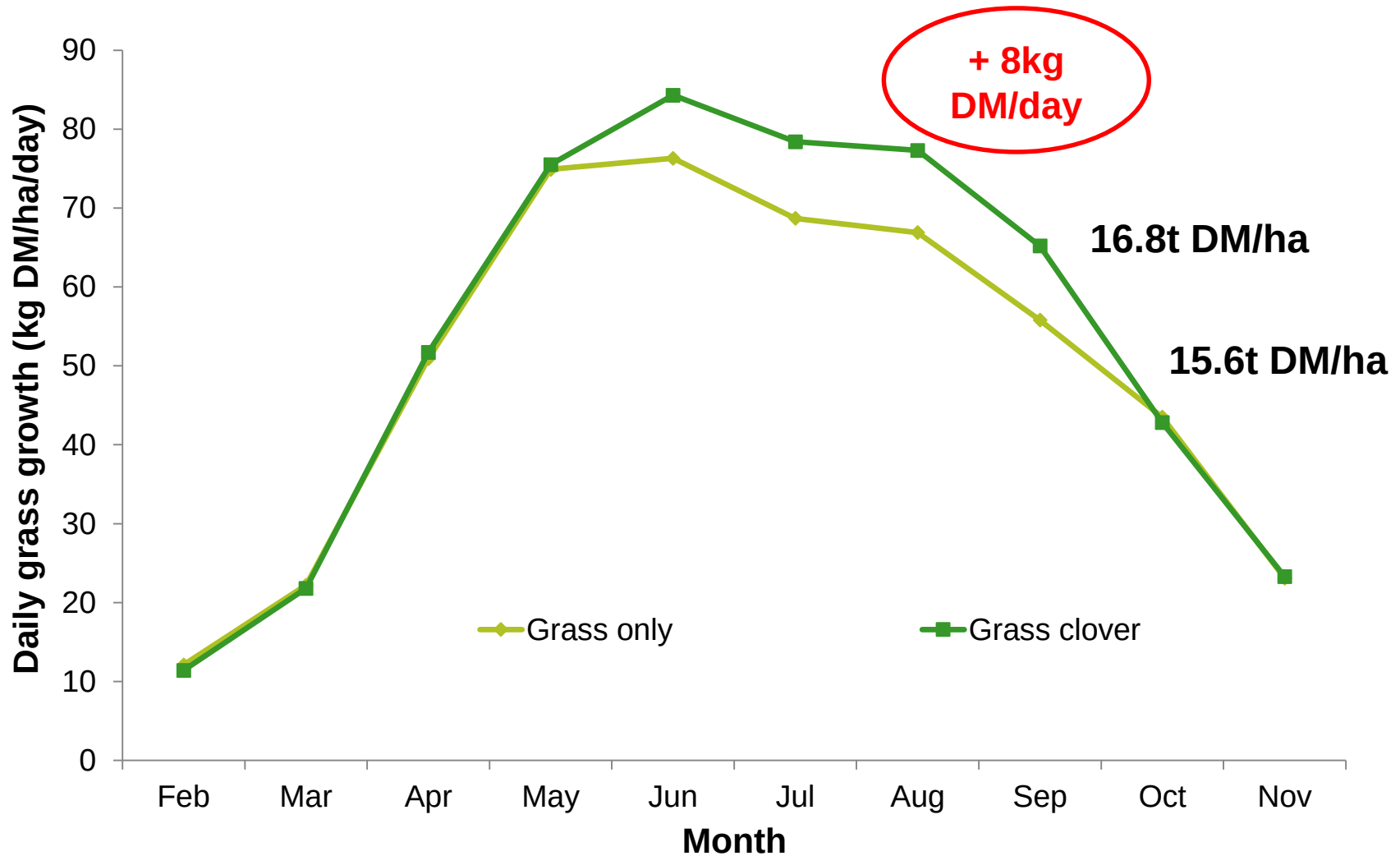
Average sward white clover content



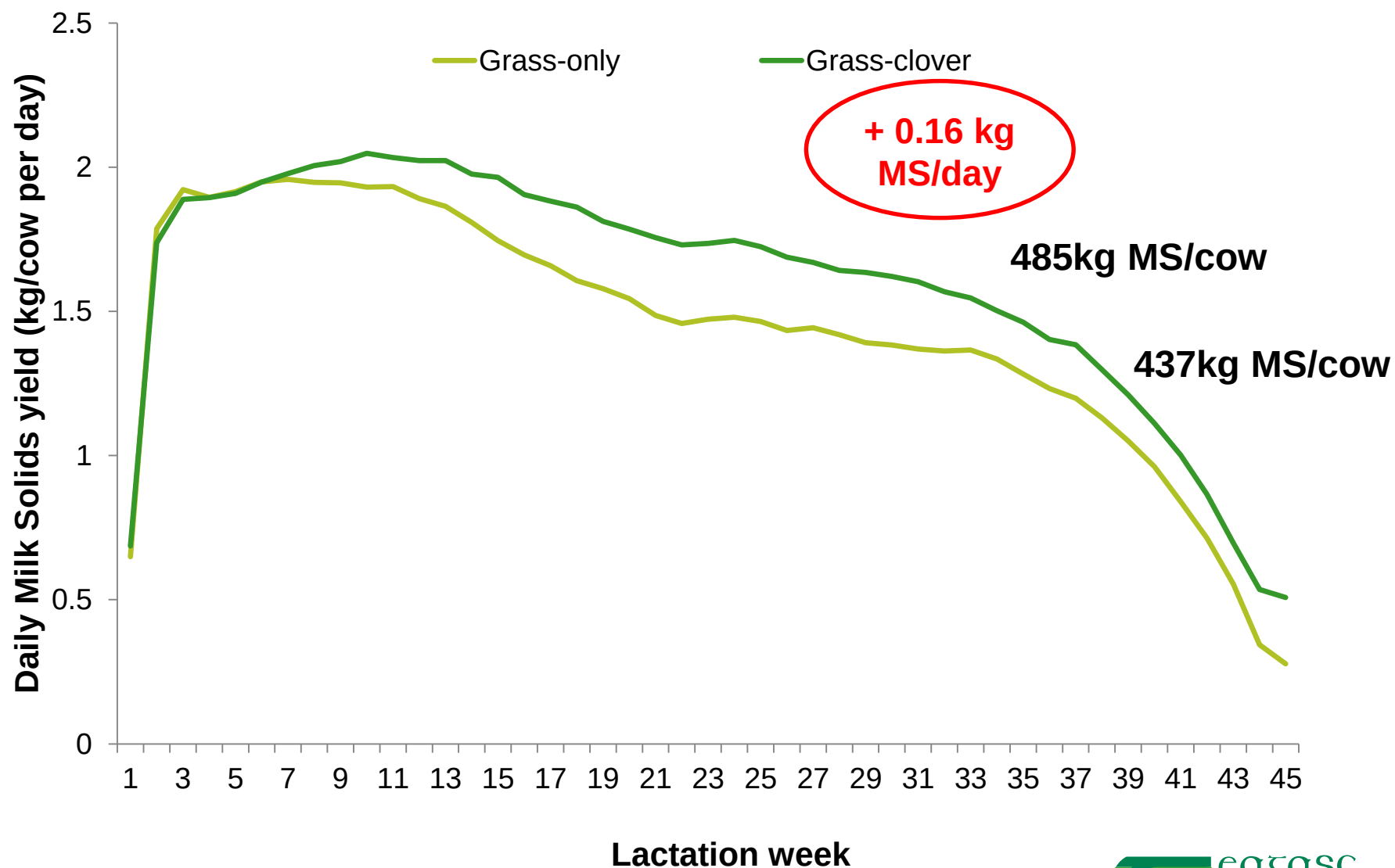
8 years research data

Moorepark Experiment (2013 – 2016)	Grass-only 250 kg N/ha	Grass-clover 250 kg N/ha	Grass-clover 150 kg N/ha
Milk solid yield (kg/cow)	460	496 + 7.5%	493
Herbage production (t DM/ha)	13.6	14.0	13.6
Sward white clover content (%)	-	23	27

Clonakilty grass growth 2014 - 2017



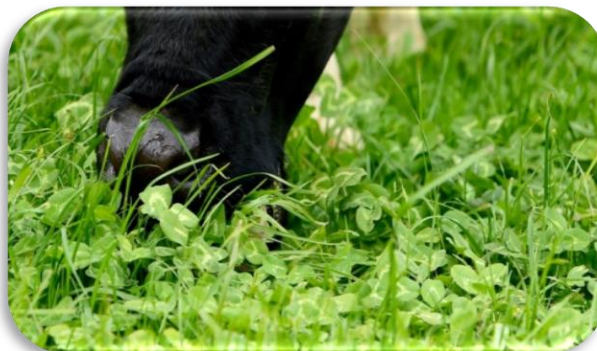
Clonakilty milk solids yield 2014-2017



Bottom Line €€€

	Grass-only	Grass-clover
Base Milk Price of 29.0 c/litre		
Gross output (€)	255,866	273,089
Margin per ha (€)	2,369	2,674 + €305
Margin per kg MS (€)	1.82	1.90
Total profit/farm (€)	94,774	106,964

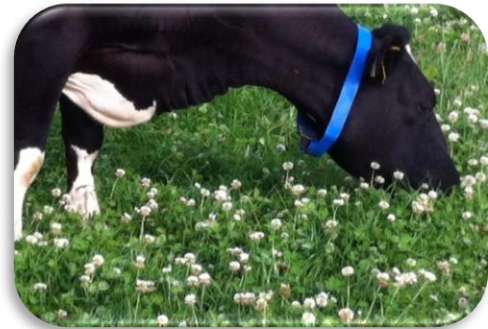
Worth an additional €12,190 on a 40 ha farm



Grazing Management

Basic principles

- Soil fertility is key
 - pH > 6.3
 - P and K (index 3 and 4)
- Closing management
 - Autumn targets as normal, graze 65% Oct, 35% Nov
 - High clover content paddocks closed later
- Main grazing season
 - Pre-grazing 1,400 -1,600 kg DM/ha
 - Target post-grazing sward height 4 cm
 - Avoid heavy cuts of silage
- Spring grazing targets are the same

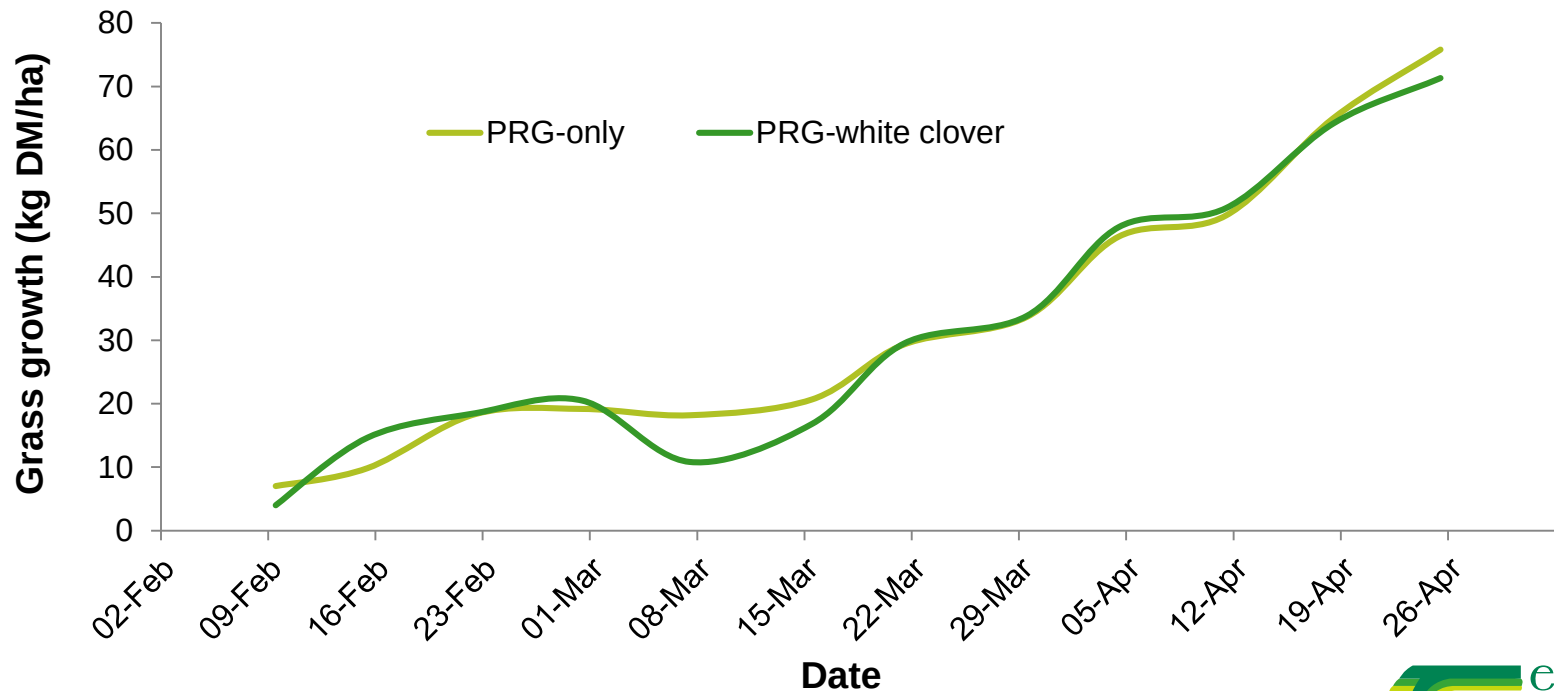


Spring grazing

1. Follow the Spring rotation plan targets
2. Apply early N + Slurry
3. Avoid poaching



Daily grass growth in spring



Bloat

- Areas where bloat may become a concern
 - Cows gorging on clover
 - Wet weather – low DM grass
 - High clover content paddocks (> 45% clover)

Prevention is better than treatment

1. Good grazing management
2. Pasture allocations (> 45% clover)
3. Bloat oil in water
 - 30 - 60 ml/cow/day
 - 12 - 24 hours prior to entering clover paddock
 - Bloat oil not sufficient on damp/wet morning – low water intake



How do we get clover on farms?

How to establish a white clover sward?

Direct reseeding or Over-sowing

Direct reseeding



- White clover sowing rate – **2.0 - 5 kg/ha**
 - Sowing depth – approx. **10 - 12 mm**
 - Roll post-sowing
-
- **April/May** - best time - adequate soil moisture

Post-sowing management is critical

- Post-emergence spray
- Grazing management
 - Pre-grazing herbage mass ≤ 1200 kg/ha
 - Next 3 grazing's
 - Post-grazing sward height ≥ 4 cm
 - No silage
- Reduce N on over-sown swards if possible

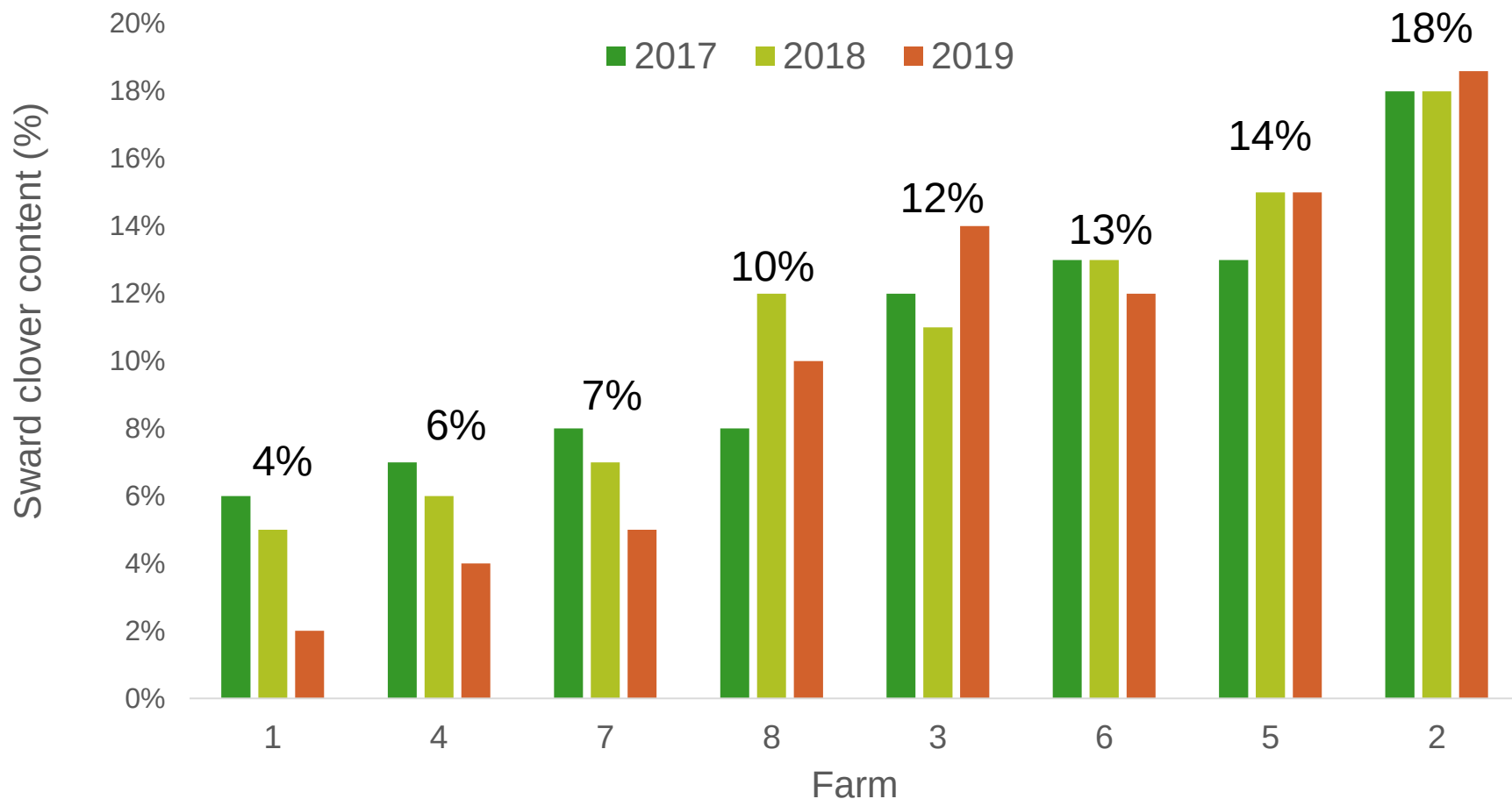


On-farm white clover study

- Evaluate white clover on commercial dairy farms
- Diverse geographical locations and soil types
- Clover over-sown on farms in 2016
 - Immediately after grazing
 - Over a 4 week period on each farm
 - Clover stitched in



Average on-farm sward clover content: 2017-2019



Establishing white clover on-farm

- Put a plan in place!
- How?
- 2020 – reseed 10%, over-sow 90% (excluding silage ground)
- 2021 – reseed 10%, continue to over-sow
 - On-going process
- Use small/medium leaf varieties (recommended list)



A 25% white clover sward

**White clover
content**

Visual assessment

Fertiliser management

Spring:
5% white clover



No change in fertiliser N
application

Take home messages

- The benefits of white clover have been proven (8 years research)
- Establish white clover on farms this year
 - Improve soil fertility
 - Reseed & over-sow
- Target 20%-25% average white clover content
- Industry worth -

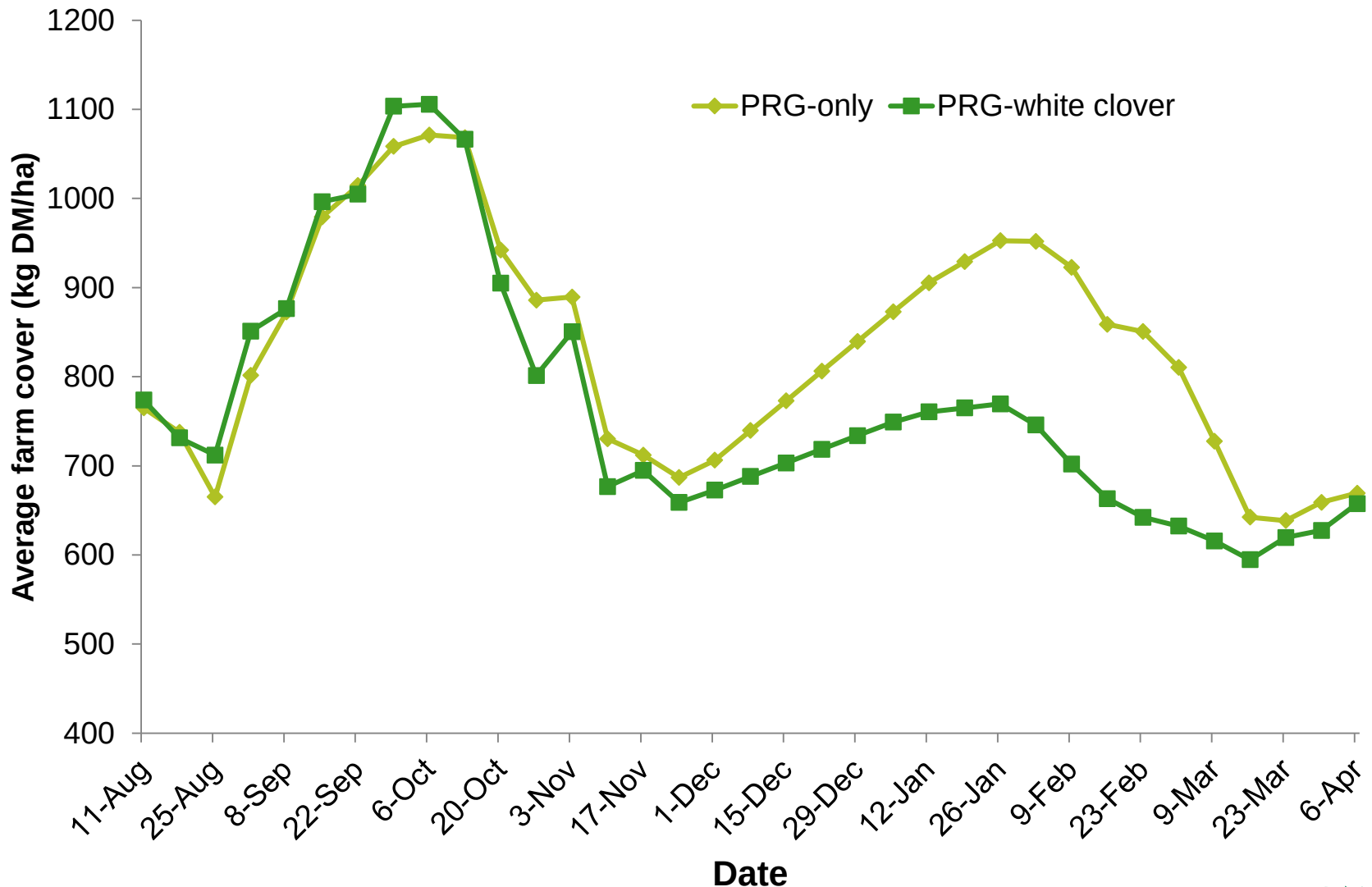


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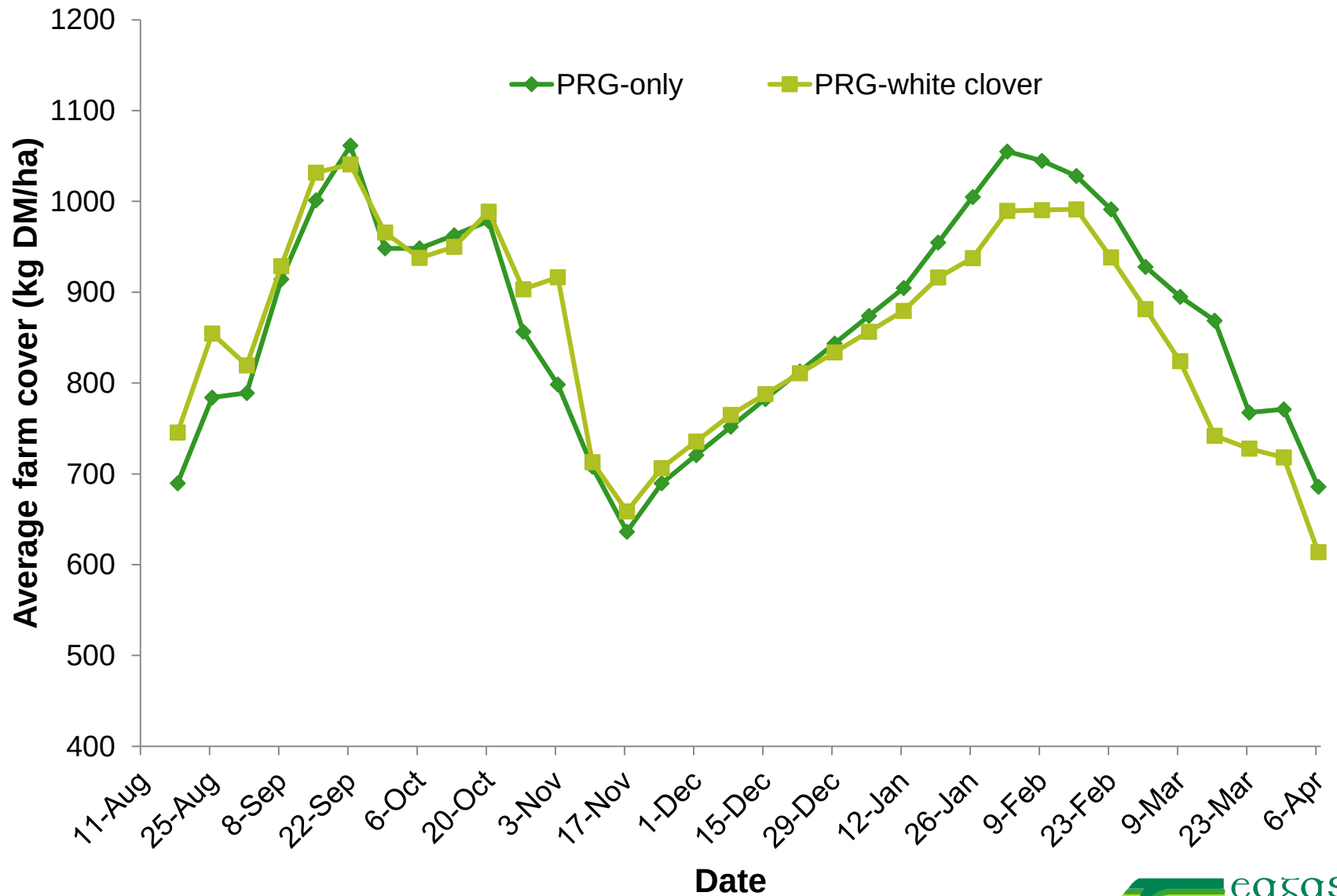
Thank you!

Questions?

Autumn/Spring budget 2013-2016



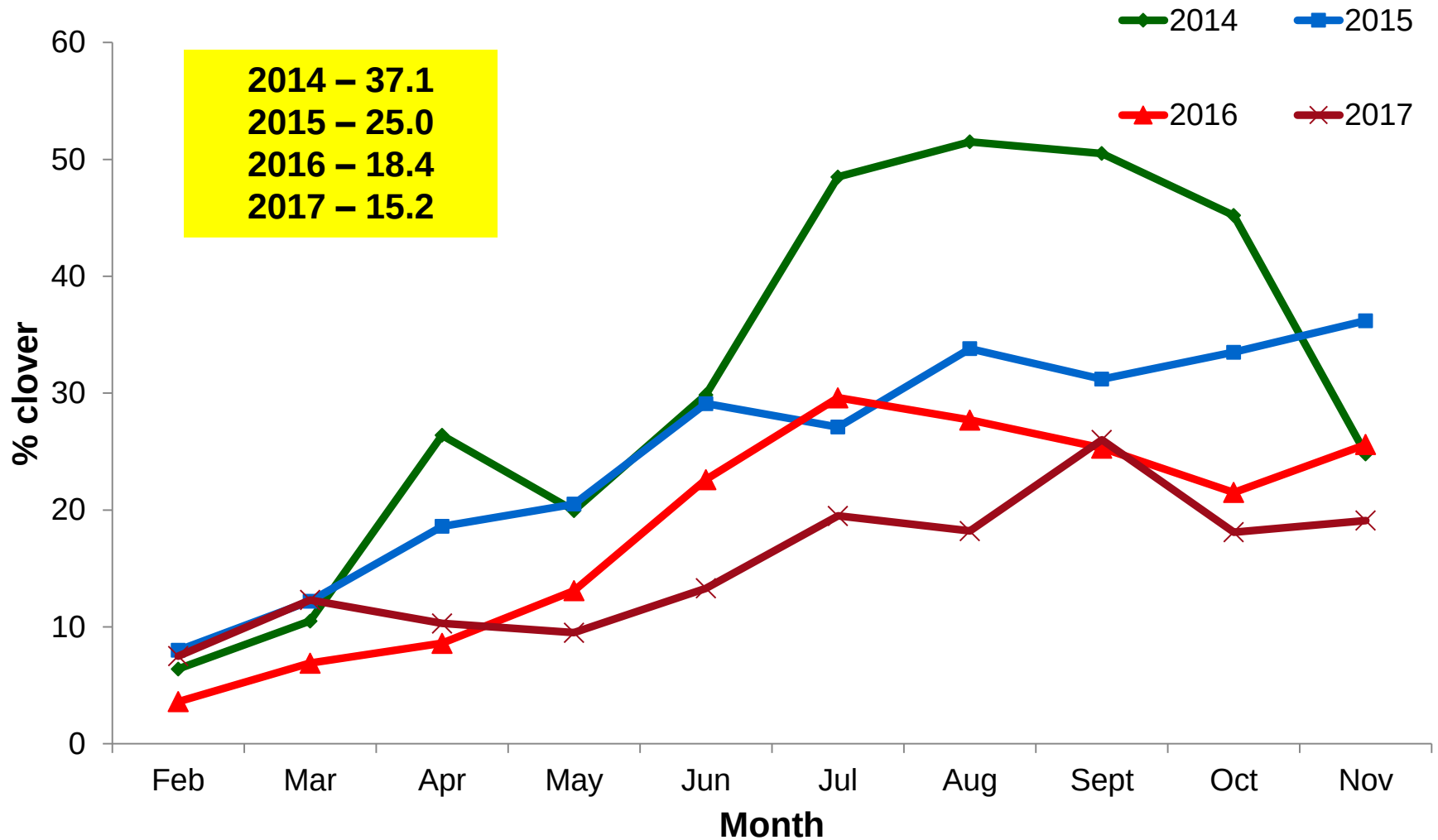
Autumn/Spring budget 2016-2018



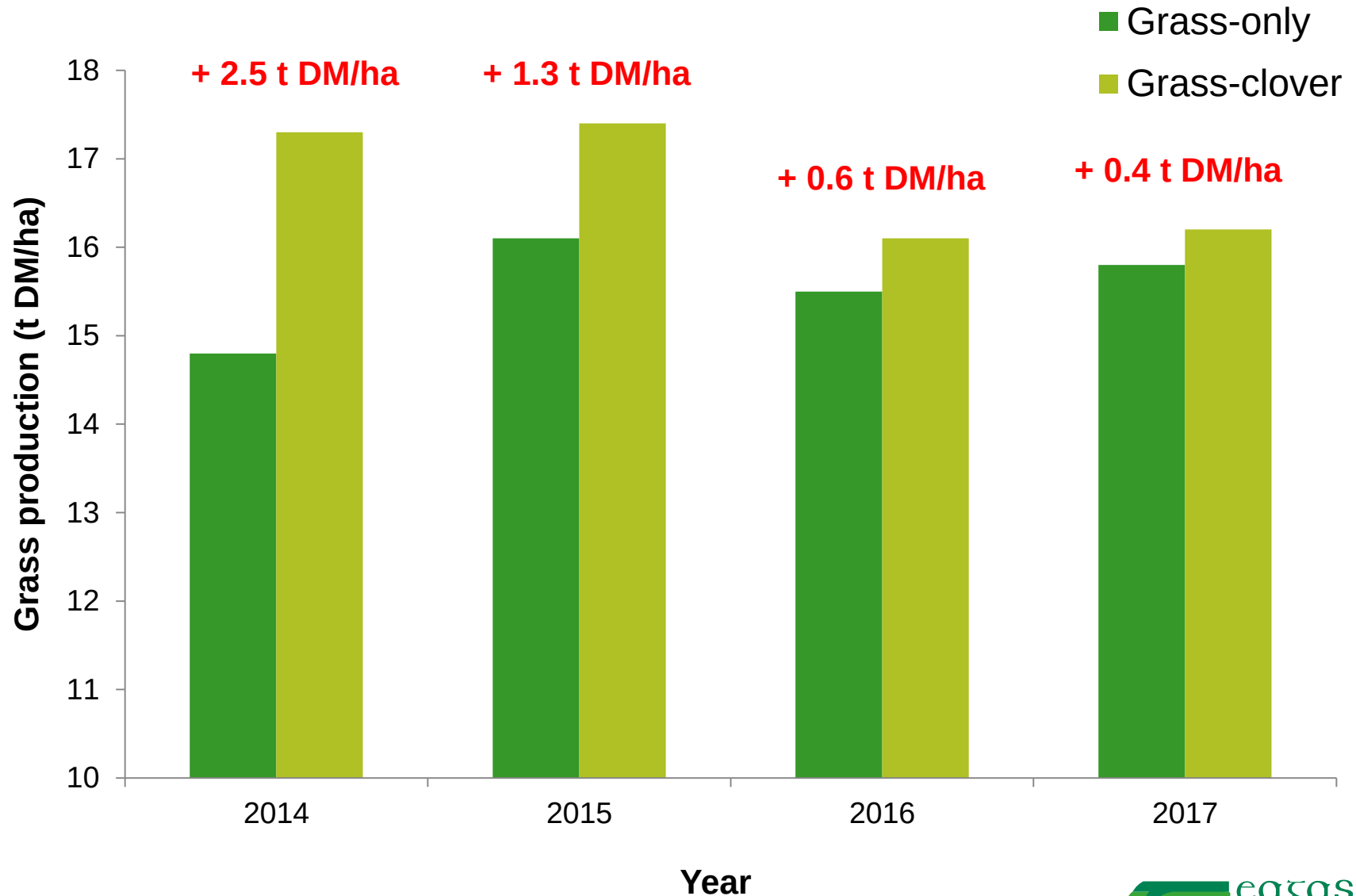
Fertiliser application

Rotation/Date	Grass 250 kg	Clover 250 kg	Clover 150 kg
Mid-late January	28	28	28
Mid March	28	28	28
April (2 nd rot)	33	33	33
May (3 rd & 4 th rot)	60	60	18
June (5 th rot)	17	17	9
July (6 th & 7 th rot)	34	34	18
August (8 th rot)	17	17	9
Mid September	33	33	12

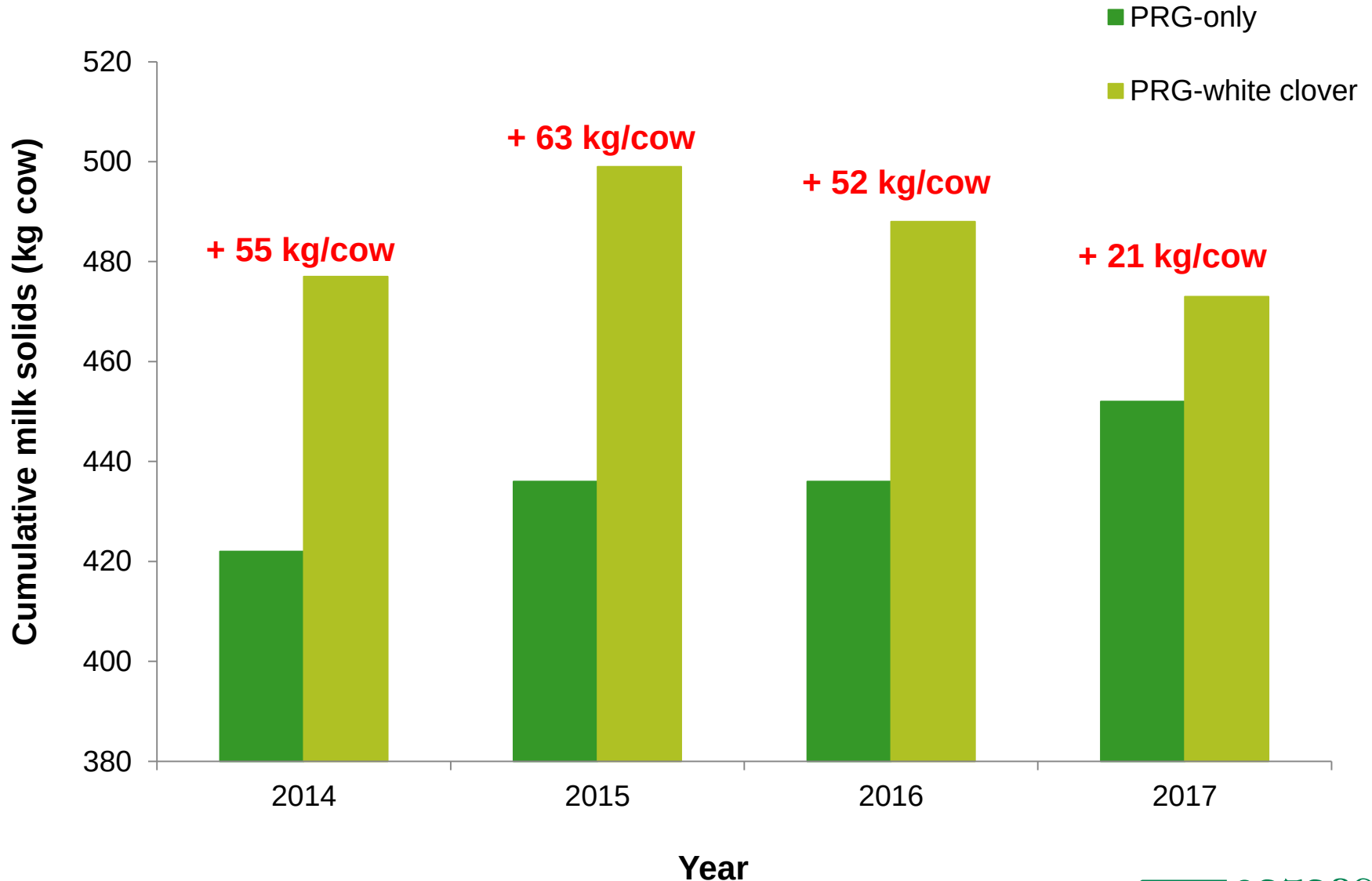
Average Clover % by year 2014-2017



Grass DM production 2014-2017



Milk solids production 2014-2017



White clover safe sprays

Product	Clovermax	Legumex DB	Undersown	Triad	Prospect	Eagle
Established Grass	Yes	Yes	Yes	Yes	Yes	Yes
New Leys	Yes	Yes	Yes	Yes	No	Yes
Clover Safe	Yes	Yes	Yes	Yes	Yes	Yes
Rate per ha	7 l/ha	7 l/ha	7 l/ha	10 g/ha	22.5 g/ha	40-60 g/ha
Approx. Cost €/ha excl. VAT	€45	€56	€52	€22	€34	€30