GrassCheck Farm Walk

Andrew Dale

Limavady, Co. Londonderry

Tuesday 21st August 2018

GrassCheck is supported by:

Department of Agriculture, Environment and Rural Affairs www.daera-ni.gov.uk

The Research Challenge Fund

CIEL Centre for Innovation Excellence in Livestock

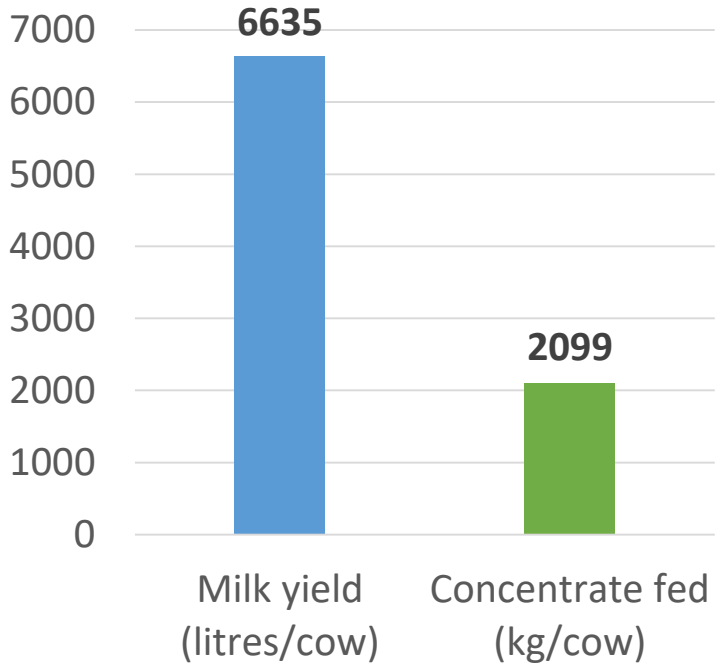
AgriSearch, AFBI & CAFRE would to like to thank the Dale family for hosting this event

Andrew Dale – Farm details

- 240ft above sea level
- 1350mm annual rainfall
- Heavy clay soils
- 70ha grassland
  - 7ha conacre
  - Grazing block limited to 15ha
- Zero-grazed grass offered twice daily at milking time

Andrew Dale – Herd details

- 110 Fleckvieh cows
- Youngstock:
  - 0 – 1 year = 23
  - 1 – 2 year = 15
- Calving October - April
- Milk solids = 469kg/cow



GrassCheck: background

- Long term grass growth and quality monitoring project
- Grass growth forecasting:
  - 7 day
  - 14 day
- Network of 48 commercial dairy, beef and sheep grass monitor farms
- Range of systems, land type, growth potential & management intensity

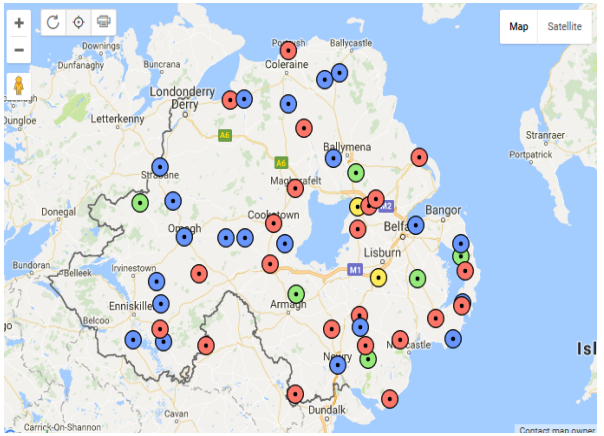


Fig. 1: GrassCheck farm network

Grass growth

Grass quality

Weather data

http://www.agrisearch.org/grasscheck

2018 growing season

- Plot growth to date = 7.1 t DM/ha **(20% deficit)**
- Monthly growth (kg DM/ha/day):
  - March = ⬇ 6 kg
  - Early / Mid-April = ⬇ 13 kg
  - May = ✚ 18 kg
  - June = ⬇ 24 kg (up 1 week)
  - July = ⬇ 41 kg
  - Early August = ⬇ 22 kg
- Huge variation across counties due to drought
  - Restricted growth in south east from late May
  - Record growth rates achieved in west
- Grass quality down in dry spell but recovering

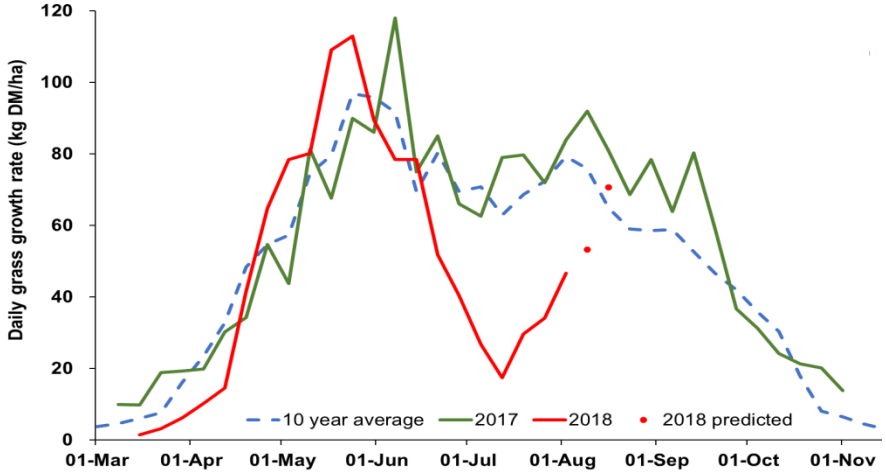


Fig. 2: Grass growth curve

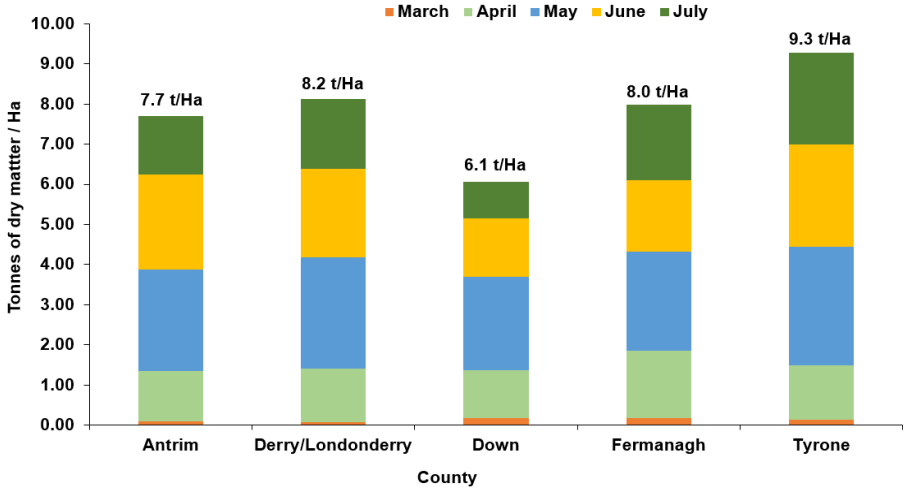


Fig. 3: Total grass grown to date across counties

On-farm grazing efficiency

Achieving target pre- and post-grazing residuals key to:

- Higher intakes of good quality pasture
- Reduction in herbage wastage
- Higher quality re-growths
- Shorter re-growth interval
- Improved response to N fertiliser

Table 1: Grazing efficiency on-farm

	Target	Group average	% grazings on target
Pre-grazing cover (kg DM/ha)	3000 - 3300	3074	72.4
Post-grazing cover (kg DM/ha)	1500 – 1800	1674	67.9
Grazing efficiency (used/available; %)	>75	85	76

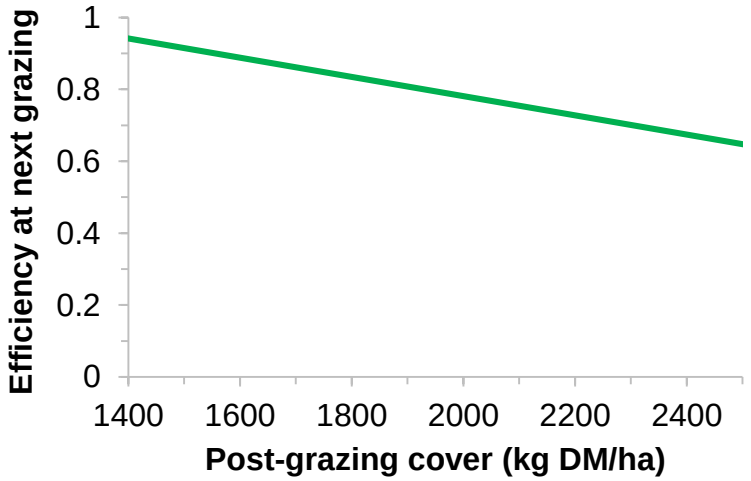


Fig. 4: Grazing efficiency relative to post-grazing cover

Achieving target pre- and post-grazing residuals key to increasing grazing efficiency

Grass production – Andrew Dale

Grazing management:

Zero-grazing and grazing blocks measured weekly

Paddocks:

- Fresh grass offered twice daily
- Seven fields split into 12 with temporary wires
- Much easier to manage covers – key to growing more grass

2018:

- Late spring
  - First zero graze = 18 April
  - First grazing = 15 May

- Exceptional growth since early May

Current growth rate = 88kg DM/ha/day

Average farm cover = 2495kg DM/ha

Total grown to date = 10.5 t DM/ha
(total growth 2017 = 10.6 t DM/ha)

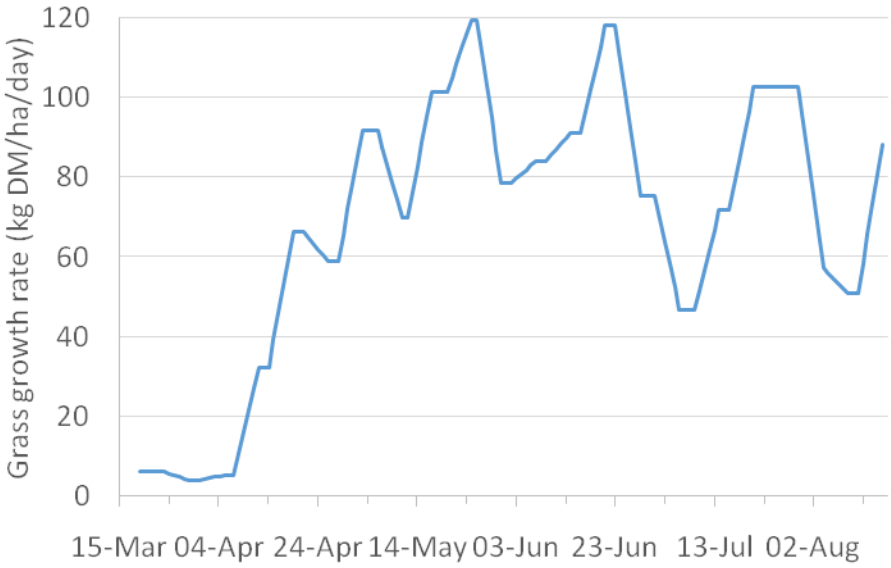


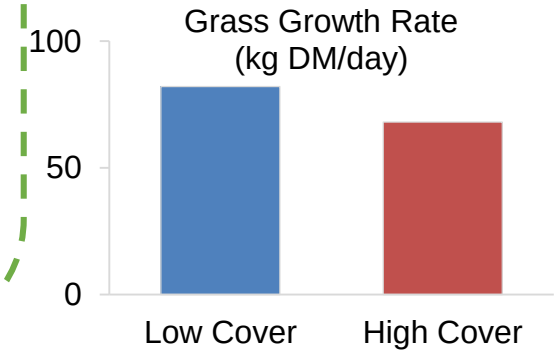
Fig. 5: 2018 grass growth curve

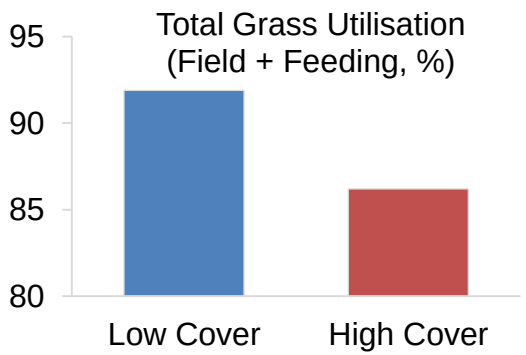
Zero-grazing: Pre-cutting sward height targets

- Zero-grazing offers opportunity to cut at higher grass covers than would be used in grazing
- Does pre-cutting grass cover affect animal and grass performance?
- 40 cows offered grass cut at high (4500 kg DM/ha) or low (3500 kg DM/ha) covers

- **0.9 kg DM/day increase in grass intake from low covers**
- **1.8 kg/day increase in milk yield from low cover swards**
- **Grass utilisation improved by 5.7% in low cover swards**
- **Maintain pre-cutting sward covers at 3500 kg DM/ha**

	Low Cover	High Cover
Daily milk yield (kg/day)	25.5	23.7
Milk fat-plus-protein yield (kg/cow/day)	2.0	1.8
Grass intake (kg DM/day)	13.8	12.9
Margin-over-feed-and-forage (£/cow/day)	4.78	4.21





Autumn grass – what to expect

Growth rates

- Steady decline in growth rates
  - August = 68kg DM/ha
  - September = 50kg DM/ha
  - October = 23kg DM/ha
- Typical growth – August – October

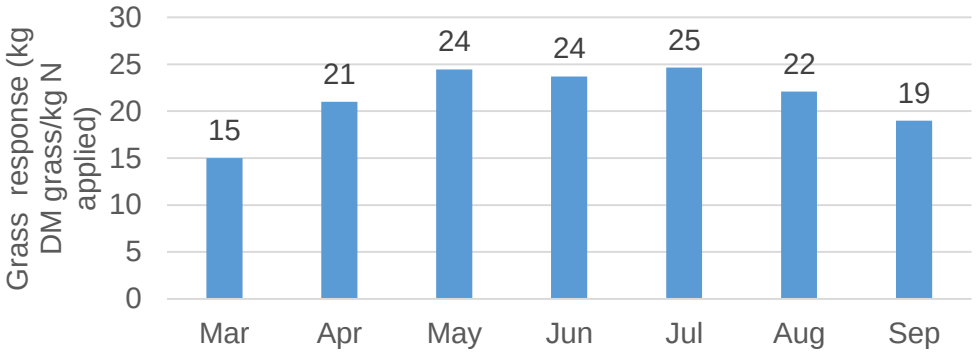
  = 4t DM/ha

Grass quality

- Well managed grass maintains quality during autumn period

BUT

- Restricted intake capacity due to falling grass DM content



Significant return on investment from N fertiliser throughout season

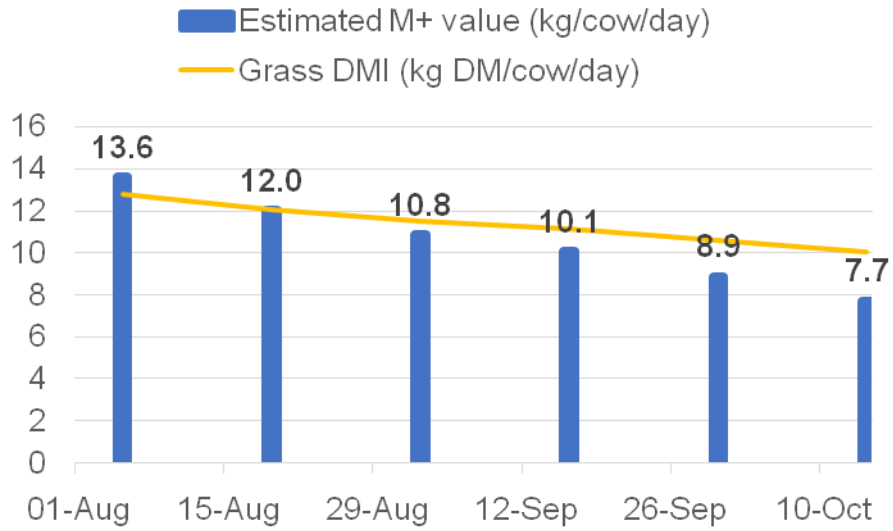
Table: Average GrassCheck grass quality as recorded in Spring, Summer and Autumn

	Spring	Summer	Autumn
Dry matter (%)	18.6	17.0	15.3
ME content (MJ/kg DM)	12.0	11.5	11.6
Crude protein (%)	22	17.6	21.6

Autumn grass – what is it worth?

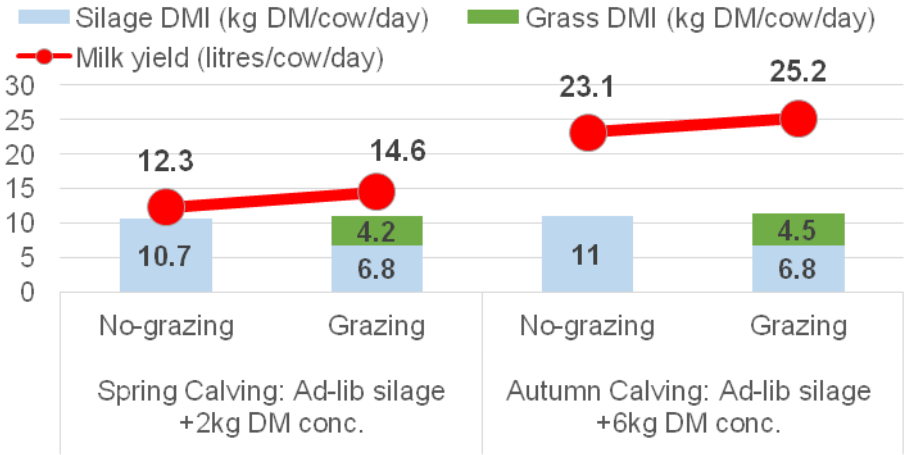
Full-time grazing

- Typical grass DMI of 10 – 13kg/cow/day
- Caution required with fresh calved cows



Part-time grazing

- Increase in milk yield + 2 litres/cow/day
- Opportunity to reduce silage requirement by 4kg DM/cow/day



One week's additional grazing for 100 cows is worth £1085

Autumn grass – current position on this farm

Current wedge:

Area = 25.9ha

Milking cows = 96

1-2 year old = 5

Grass DMI = 14kg DM/cow/day

- Blanket spread nitrogen (20 units/ac
- Demand is reducing as cows dried off

Grass demand:

96 milking cows	14kg DM/day
5 1-2 year old	12kg DM/day

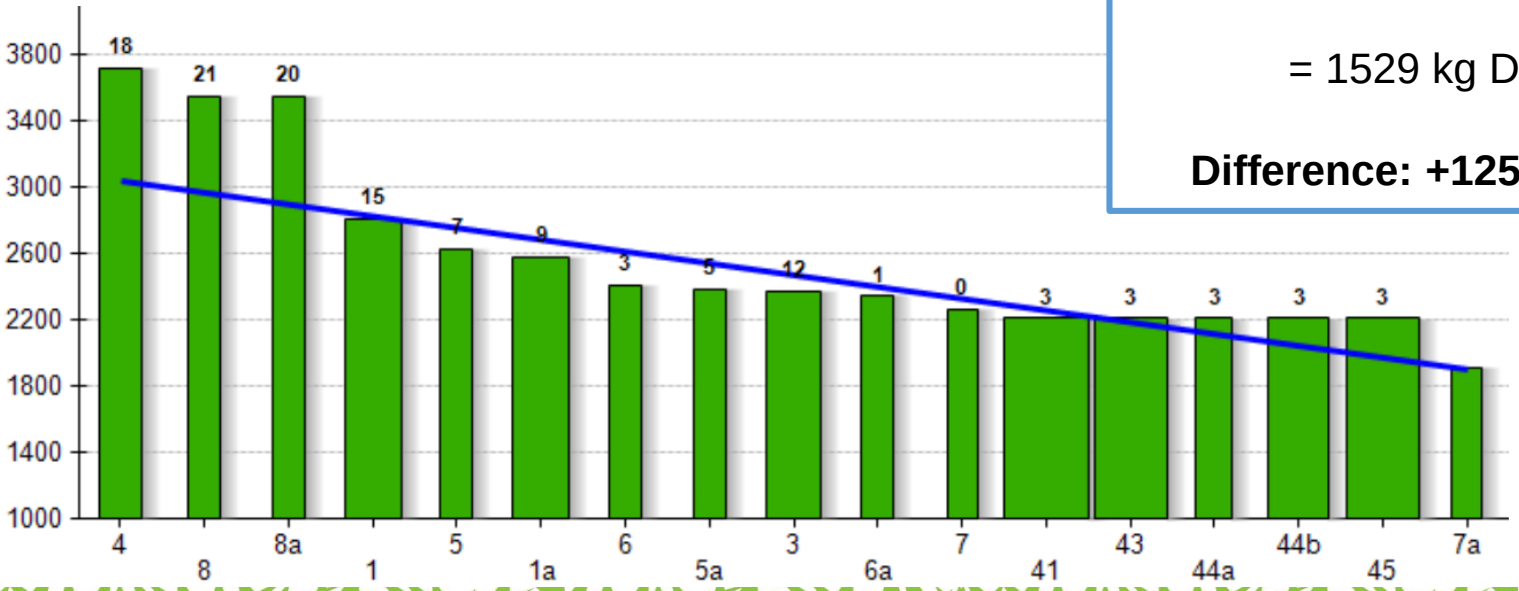
= 1404kg DM/day

Grass supply:

Area	25.9 hectares
Growth rate	59kg DM/ha/d

= 1529 kg DM/day

Difference: +125kg DM/day



Key priorities over next 8 weeks on this farm

Focus switching to spring 2019

- 24 acres baled 13 August
- 110 acres of 3rd cut to harvest
- Cows in paddock 1 today, start of penultimate rotation
- During this rotation continue to focus on grazing residuals
- Start final rotation 3rd week September
- Dry stock/young stock will be used to setup grazing platform if gets too wet for milking cows
- Grazing/zero grazing blocks ‘closed’ by mid October

Estimating the amount of fodder available

Silo No	Silage DM (%)	Clamp Dimensions (m)			Clamp Vol. (m^3) V=LxWxH	Conversion Factor (M) from table	Weight of fresh silage (tonnes) = VxM	Total silage dry matter (tonnes)
		Length (L)	Width (W)	Height (H)				tonnes fresh x dry matter
1	28	24.4	12.2	3.35	997 m^3	0.57	568	159
2	28	12.2	12.2	3.35	499m^3	0.615	307	86
300 bales @750kg/bale @25% dry matter								56
							TOTAL (T1)	301

Additional forage:

Third cut silage = 110 acres @ 4 t silage FW/acre = 440 tonnes

@ 25% dry matter = potentially 110 tonnes dry matter of silage

TOTAL FODDER DRY MATTER REQUIRED ON THE FARM

Type of stock to be fed	Number of animals (N)	Silage dry matter intake kg/head/day	Silage required/animal/ month (DM tonnes)	Silage dry matter required (tonnes/month)
DAIRY COWS	**110**	**12**	**0.36**	**39.6**
REPLACEMENTS				
Heifers 1-2 yo	**15**	**8**	**0.24**	**3.6**
Heifers 0-1 yo	**23**	**6**	**0.18**	**4.1**
			TOTAL (T2)	**47.3**
Total silage available (tonnes)		**(T1)**	**301**	
Total silage required /month (tonnes)		**(T2)**	**47.3**	
Months silage		**(T1 ÷T2)**	**6.4**	

Add in approximately 110 tonne dry matter (3rd cut) = approx 2 months

Plan & monitor feed efficiency

- **Fertilise grassland to provide nutrients for autumn grass growth**
- **Analyse fodder to determine its dry matter & production potential**
- **Assess forage stocks on the farm using CAFRE fodder stocks calculator**
- **Batch cows and target best quality silage to most productive stock**
- **Ensure silage replacer rations are good value for money – use CAFRE Relative Feed Value Calculator**
- **Start planning now for early turnout of stock in spring 2019**
- **Monitor feed efficiency using the CAFRE M.O.C. on-line calculator**
- **Consider CAFRE Benchmarking & completing cash flow monitor**
- **Review farm management to maximise use of grass/forage in the diet**

For further information on the GrassCheck suite of projects visit:

www.agrisearch.org/grasscheck

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