GrassCheck Farm Walk

Wayne Acheson

Cookstown, Co. Tyrone


Tuesday 21st August 2018

"Beef from Grass"

- 3 year project funded by DAERA and AgriSearch

- Grazing trials to investigate the effects of different grazing strategies and sward types on:
  - Grass growth and quality
  - Animal performance

- On-farm work to:
  - Provide detailed understanding of grass growth **potential** across Northern Ireland
  - Identify **actual** variability in grass production and quality on commercial farms
  - Monitor livestock **performance** across a range of animal types and environmental conditions
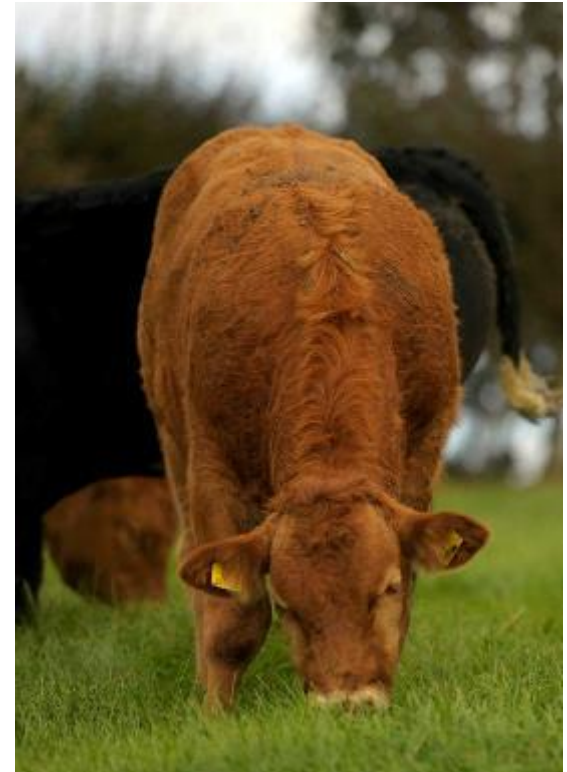
Wayne Acheson – Farm profile

Land area:

- Lowland - 260 acres owned and 140 acres conacre

- Hill - 520 acres owned

Livestock:

- 100 Galloway and Blue grey Suckler cows

- 500 store bullocks - purchased early Spring
  - Continental
  - Aberdeen Angus

- 500-600 store bullocks – purchased mid-July to mid-Sept
  - Continental
  - Friesian
  - Aberdeen Angus

Sandholes Paddocks – Layout

- 3 batches of ~40 cattle grazing 17.3 ha

- Split into 24 paddocks

- Using battery fencer and strip wire

- Cattle turnout on 6th April

- Average farm cover = 2158 kg DM/ha

Table 1: Animal performance

	Terrys hill	Road field	Reseed	Combined
Avg. LWT at Spring turnout	**346 kg**	**379 kg**	**423 kg**	**383 kg**
Avg. daily live weight gain	**0.91 kg**	**1.03 kg**	**1.04 kg**	**1.0 kg**
Avg. LWT (13th August)	**464 kg**	**513 kg**	**556 kg**	**511 kg**

Strong emphasis - Good grassland management to ensure optimum performance from grass

NI Grassland – State of Play

- Grass remains the cheapest feedstuff available for beef, dairy and sheep in Northern Ireland

- Significant potential to increase grassland performance on farm

- Increasing utilised grass yield by 1 t/DM/ha and quality by 0.5MJ:

  - ⬆ 19% stocking rate per hectare

  - ⬆ 35% liveweight gain per hectare

  - ⬇ 21% concentrate input per hectare
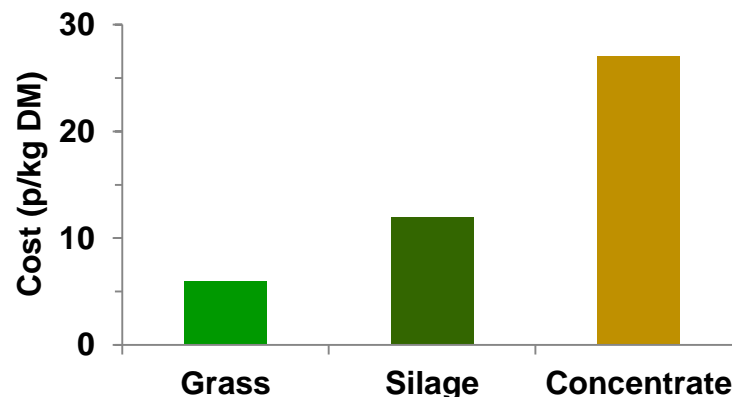
1 tonne extra grass dry matter utilised = +£204/ha

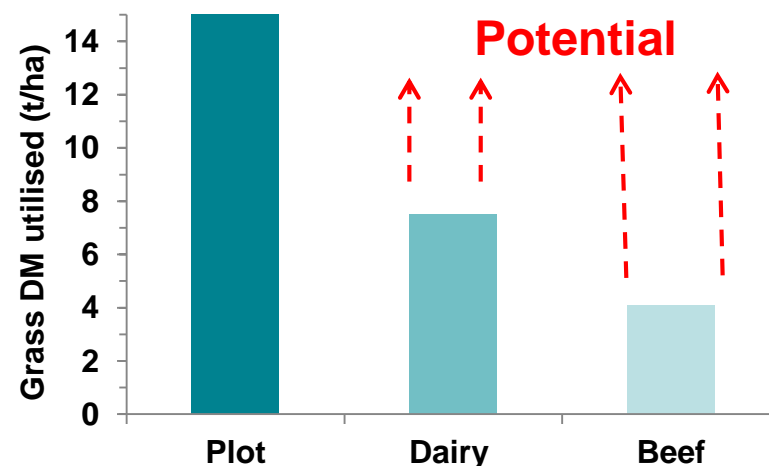**Fig. 1:** Cost of individual feedstuffs

Fig. 2: Estimated grass utilisation on NI farms

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

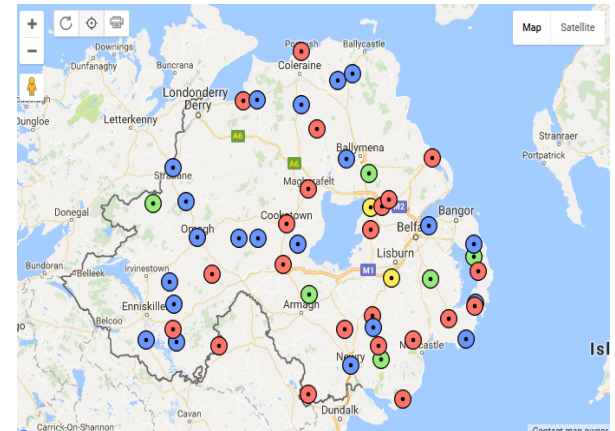- Range of systems, land type, growth potential & management intensity

Fig. 3: 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
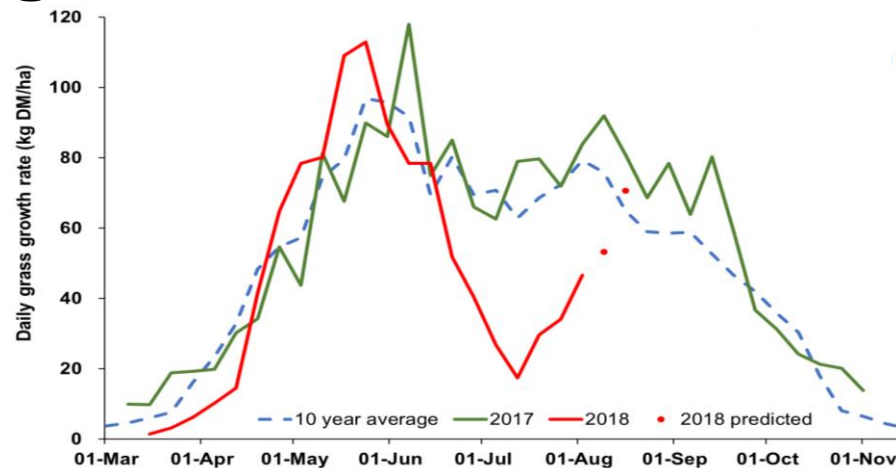
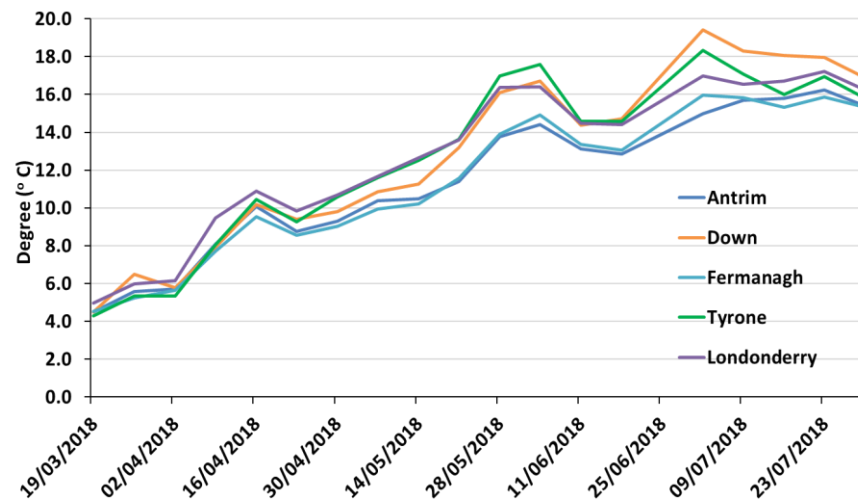- Grass quality down in dry spell but recovering

Fig. 4: Grass growth curve
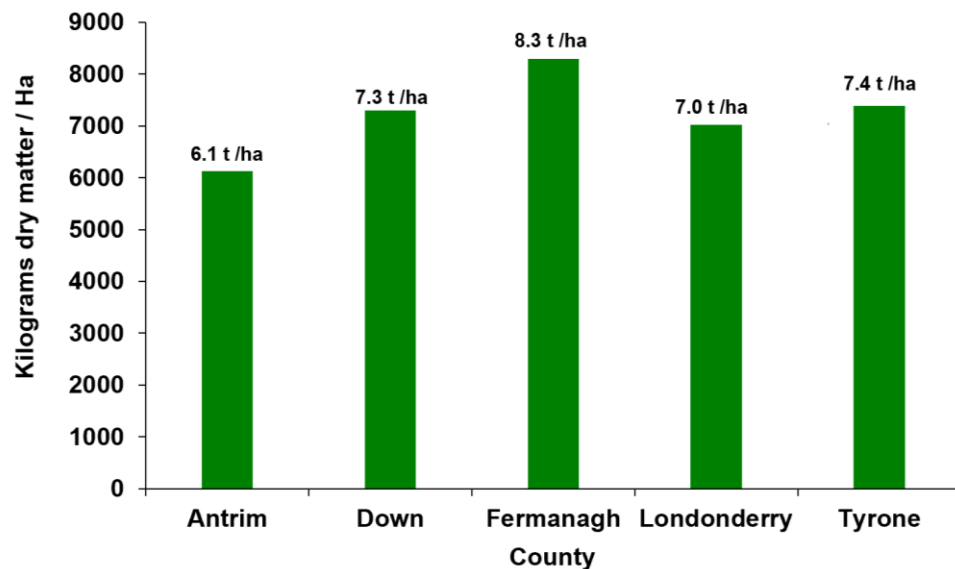

Fig. 5: 2018 soil temperature

2018 growing season (cont.)

Fig. 6: Total grass dry matter grown to date per county

Table 2: Grass quality in 2018

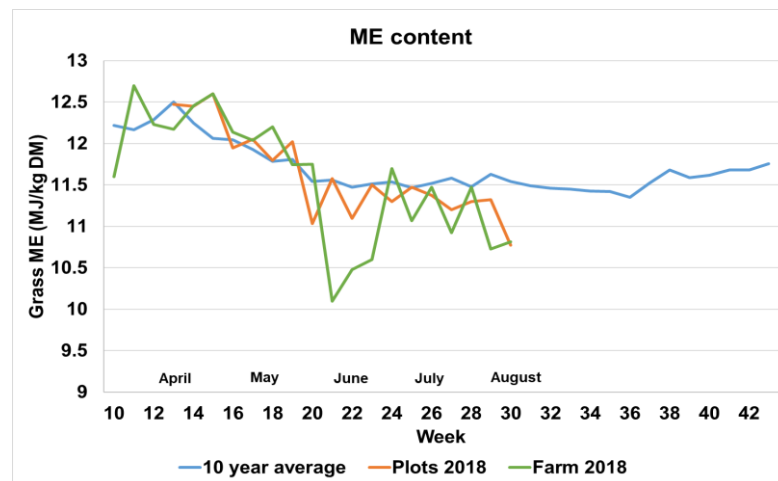|	DM (%)	ME (MJ/kg DM)	CP (%)	ADF (%)	WSC (%)
10 year average	18.1	11.8	20.0	26.1	15.0
2018 Plots	20.1	11.6	18.3	27.2	14.8
2018 Dairy	20.0	11.6	19.0	27.5	14.1
2018 Beef	20.2	11.3	17.5	29.2	13.9

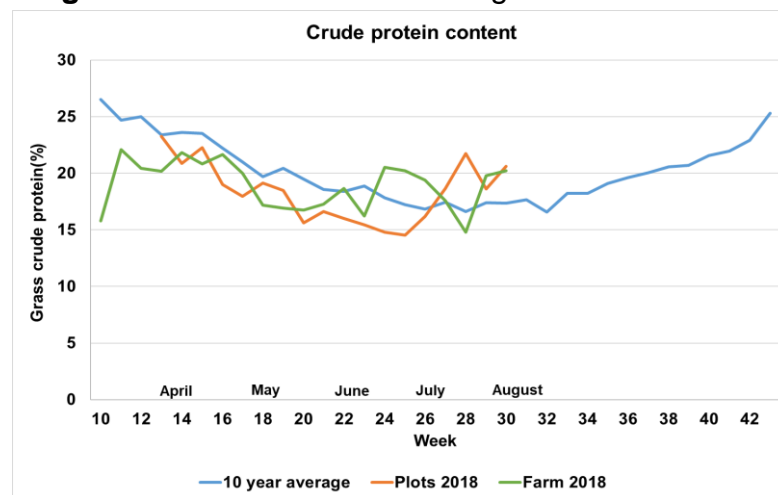**Fig. 7:** Metabolisable content of grass in 2018

Fig. 8: Crude protein content of grass in 2018

Grass production – Sandholes

Grazing management:
- Managed in an 8 paddock rotational system
- Grazing blocks measured weekly

2018:
- Spring turnout = 6th April 2018

- Exception growth since late April
  - Peak growth 91 kg DM/ha/d at end of July into August

- Pre-grazing covers = 3,000
- Post-grazing covers = 1,600-1,700

- Reseeding old and under-performing swards

Current growth rate = 50.7 kg DM/ha/day

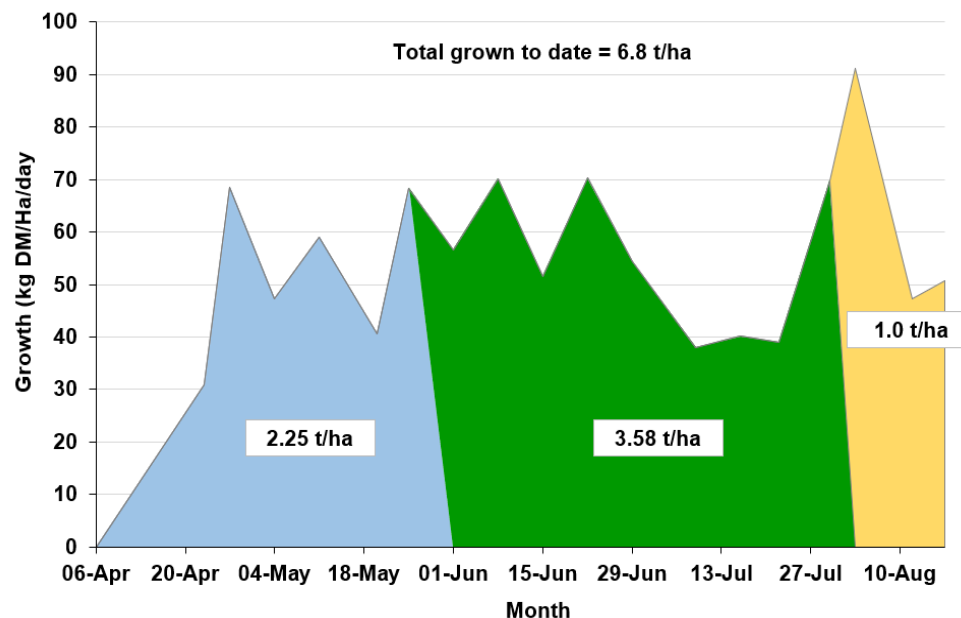Average farm cover = 2,158 kg DM/ha

Total grown to date = 6.8 t DM/ha

Fig. 9: 2018 grass growth curve

Getting the balance

Paddock grazing

Constant

Demand

Variable

Supply
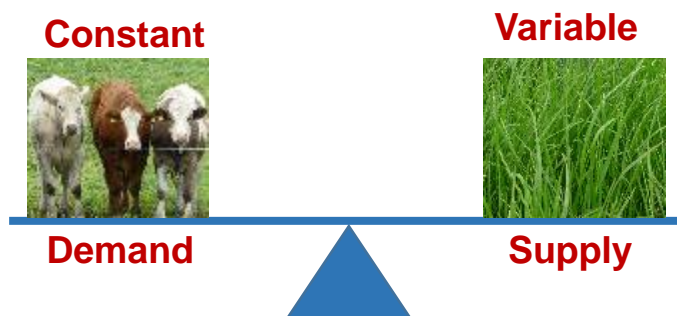
Golden rule = 3 leaves, 3 days, 3 weeks

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

- Higher intakes of good quality pasture

- Increase animal performance

- Reduction in herbage wastage

- Higher quality re-growths

- Improved response to N fertiliser

Post-grazing
1600 - 1800
kg DM/ha

Pre-grazing
3000 - 3300
kg DM/ha

Remove
>3500 kg
DM/ha

Fig. 10: Grazing efficiency relative to post-grazing cover

Setting up a paddock system

Layout

- Use farm map – consider layout options
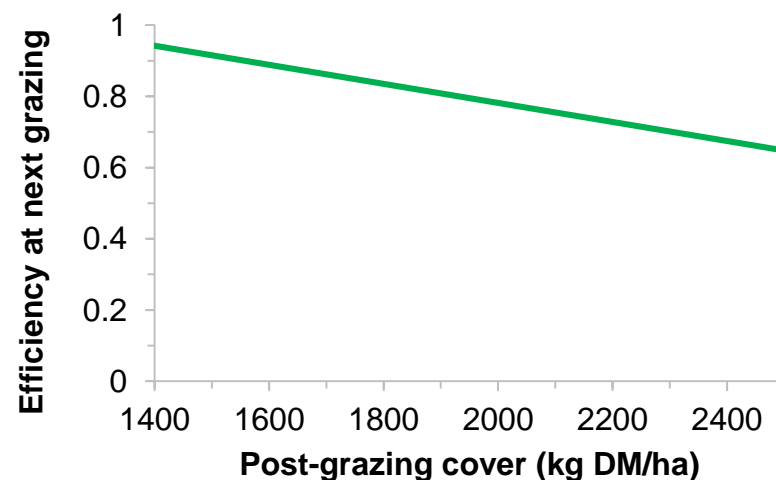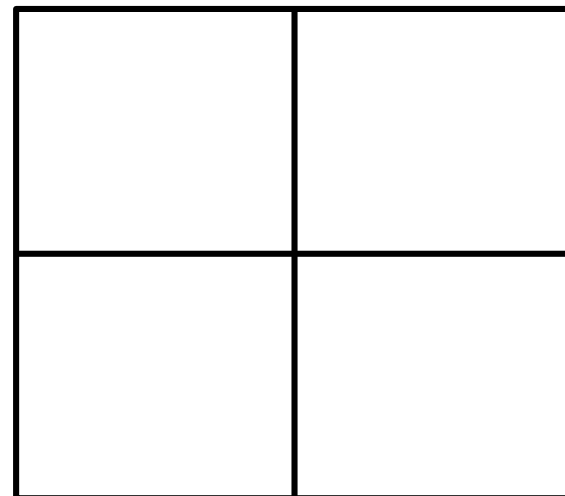   - Look for positives and negatives
- Decide number of paddocks required for grazing stock
- Determine a suitable road way layout
- Determine most suitable drinking trough locations
- Access points (on driest ground)
- Square / rectangle shape

Size:

- Establish animal numbers or field size

Assume dry matter intake per animal = 2 - 2.5% body weight

Cows and calves

- 20 Spring cows and calves = 17 kg/day = **340 kg DM/day**
- 3 days grazing x 340 = **1,020 kg DM (demand)**

Pre-graze   **Post-graze**

- 3,000 kg DM/ha **minus** 1,600 kg DM/ha = **1,400 kg DM/ha (available)**

- 1,400 kg DM/ha **divided by** 1,020 kg DM = **0.73 ha (area required)**

Grass budgeting
Current growth = 51 kg DM/ha/day

Batch 1:

36 growing cattle @ 460 kg LW

Area	= 7.04 ha
Current cover	= 2271 kg DM/ha
Grass allocation	= 10 kg DM/head/day
Current demand	= **360** kg DM/day
Grass supply	= **359** kg DM/day

Batch 2:

40 growing cattle @ 520 kg LW

Area	= 5.76 ha
Current cover	= 2079 kg DM/ha
Grass allocation	= 10.5 kg DM/head/day
Current demand	= **420** kg DM/day
Grass supply	= **294** kg DM/day

Options:

1) Remove 12 cattle from group
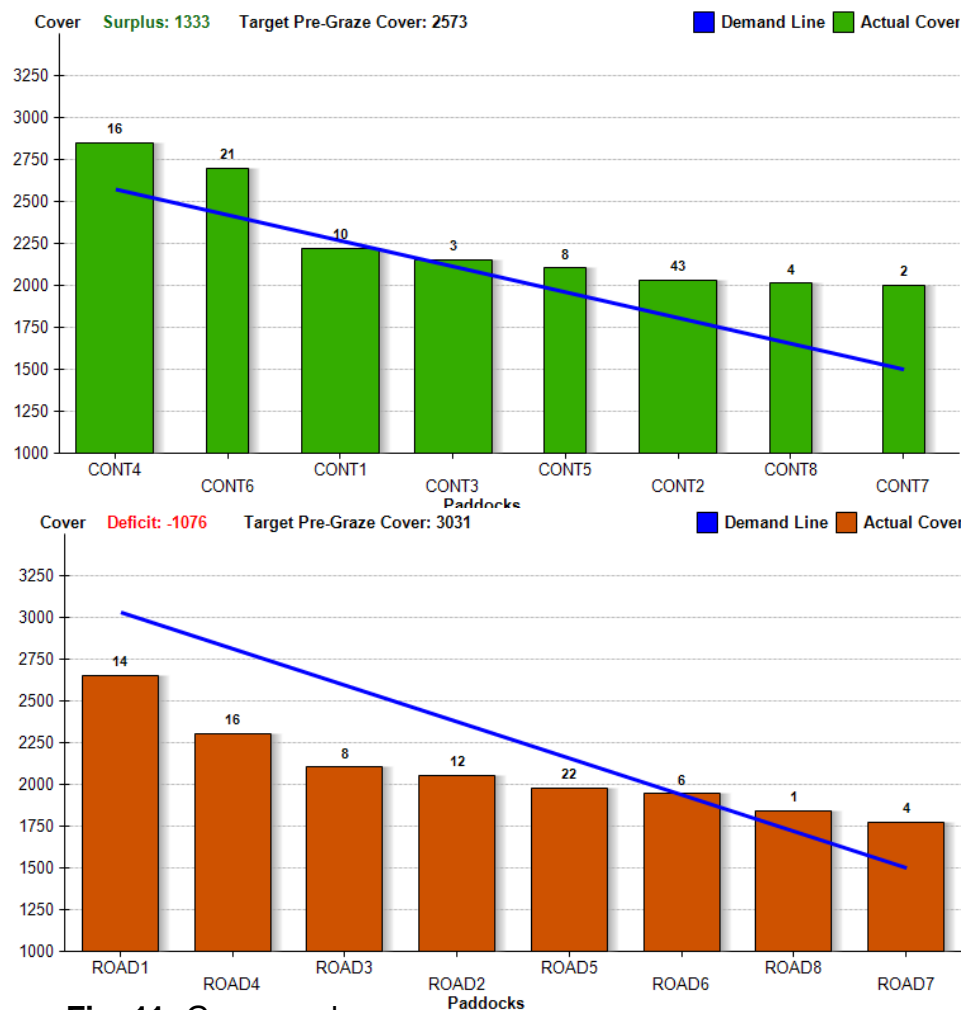2) Introduction an additional 2.5 ha

Fig. 11: Grass wedge

Issues this winter

- Silage shortage in some areas
- Expensive feed
- Expensive straw
- Some very dry silages

Measure the silo

Crop	Single Dry Matter Content (%)	Conversion (volume in m³ to tonnes of fresh silage)
Grass Silage:	18	Multiply by 0.81
	20	Multiply by 0.77
	25	Multiply by 0.68
	30	Multiply by 0.60
Whole-crop	40	Multiply by 0.67
Forage Maize	30	Multiply by 0.75

Silage in store

- 10m x 15m x 2m = 300m³
- 25% dry matter silage so use 0.68
- 300 x 0.68 = **204t**
- Add on any round bales 650-850kg
- 80 bales = **60t**

Silage requirements

Type of stock to be fed	Silage /animal/ day (kg)
SUCKLER COWS	
Autumn/Spring calving	40 / 33
OTHER CATTLE	
350kg+	33
250 to 350kg	26
200 to 250kg	23
calves	10

Daily requirements will vary considerably with dry matter content of silage.

Complete a fodder budget

- 30 cows x 180 days =   180 t
- 30 calves x 180 days =   140t
- Deficit of   **56t**

Steps to be taken

- Start planning NOW

- Analyse silage in store

- Manage the face carefully when silage is very dry

- PD & sell empty cows

- Use body condition if possible

- Sell/finish stores earlier

- Shorten the winter by using extended grazing techniques

- Ensure purchased feeds are value for money using the CAFRE relative feed value calculator

Estimating the amount of fodder available

Silo No	Silage DM (%)	Clamp Dimensions (m)			Clamp Vol. (m³) V=LxWxH	Conversion Factor (M) from table below	Weight of fresh silage (tonnes) = VxM	Total silage dry matter (tonnes)
		Length (L)	Width (W)	Height (H)				tonnes fresh x dry matter
1								
2								
3								
							TOTAL (T1)	

Additional forage:

_____ bales @ _____ kg/bale and _____% dry matter = **+ _____** tonnes dry matter

Conversation factor

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Forage Maize	**30**	**Multiply by 0.75**

TOTAL FODDER REQUIRED ON THE FARM FRESH WEIGHT BASIS (25% DM)

Type of stock to be fed	Number of animals (N) **a**	Silage fresh intake kg/head/day (DM) **b**	Silage required/animal/ month (DM tonnes) **c**	Silage dry matter required (tonnes/month) **= a x c**
SUCKLER COWS				
Autumn		40 (10)	0.305	
Spring		33 (8.25)	0.252	
GROWING CATTLE				
Calves		10 (2.5)	0.076	
200 - 250 kg		23 (5.75)	0.175	
250 – 300 kg		26 (6.5)	0.198	
350 kg +		33 (8.25)	0.252	
			TOTAL (T2)	
Total silage available (tonnes)		**(T1)**		
Total silage required /month (tonnes)		**(T2)**		
Months silage		**(T1 ÷T2) -**		

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For further information on the
GrassCheck suite of projects visit:

www.agrisearch.org/grasscheck