

Grass growth variability – what can we improve ?

Dr Michael O'Donovan

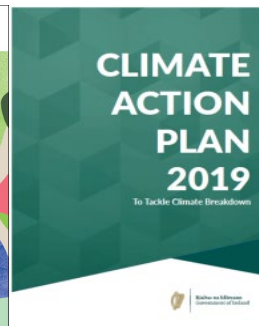
***Animal and Grassland Innovation
Centre, Teagasc, Moorepark***

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Irish Grassland Characteristics

- Irish grasslands characterised by high pasture productivity potential, low variability in seasonal supply and quality
- Home produced feed and sustainable (Farm to Fork 2030)
- Inconsistent product prices (2020) and rising costs (Inputs, Labour)
- Increased grazed grass decreases cost
- Cost of alternative feeds:

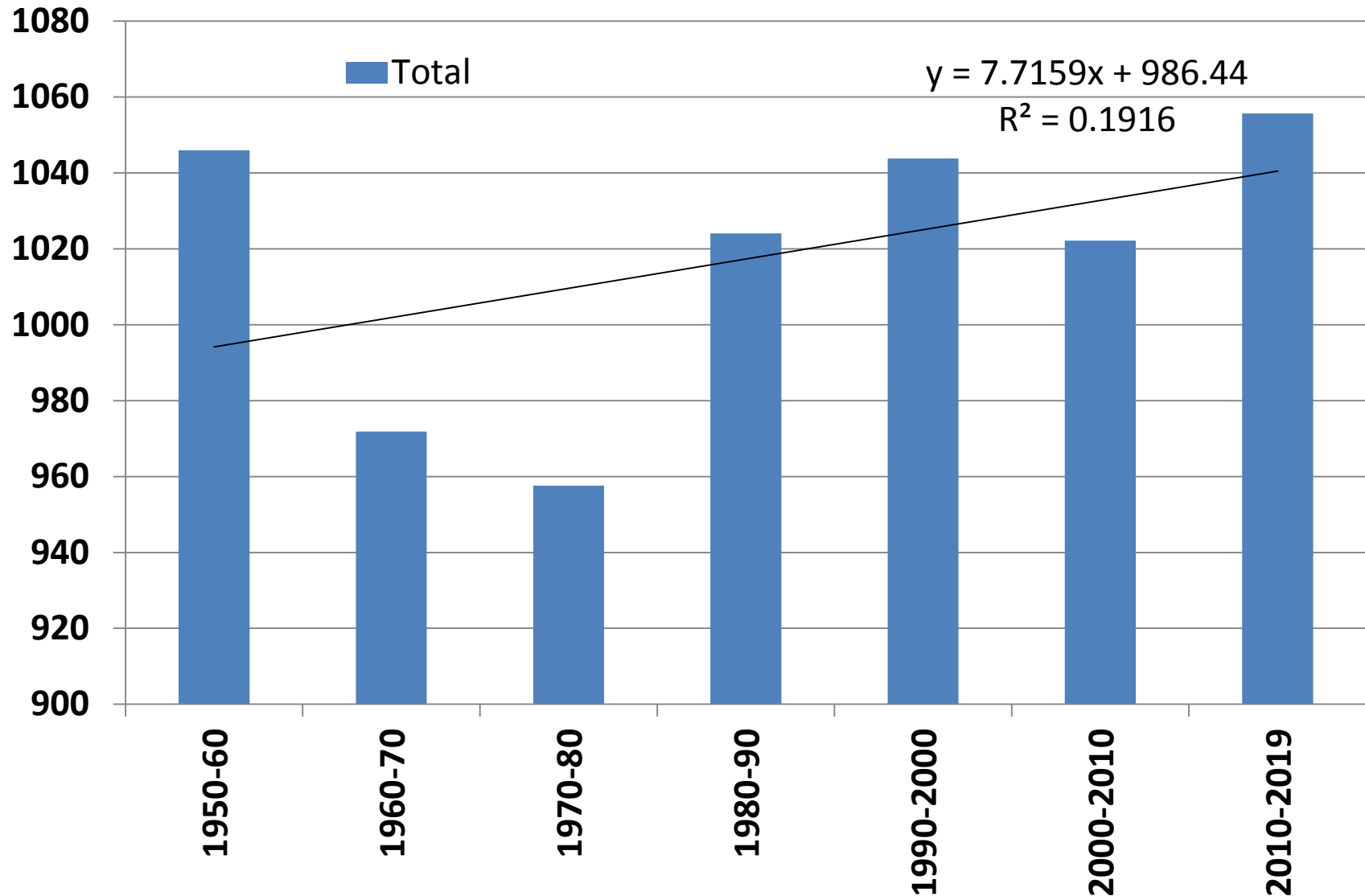
■		c/kg DM
■	Grazed grass	7.6
■	Grass silage	18.0-20.0
■	Concentrates	29.0
■	Forage crops	17.0 - 19.5



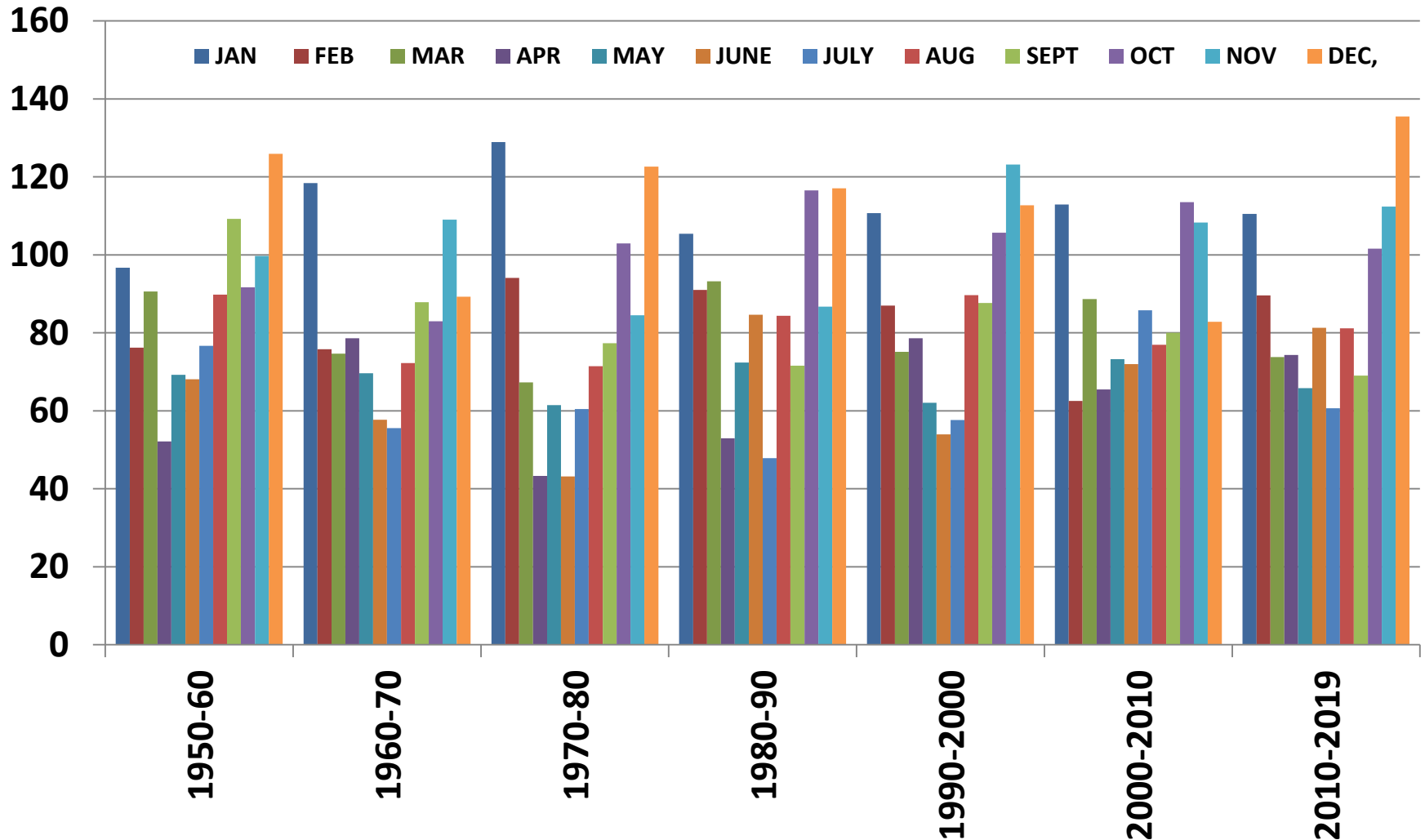
Talk Outline

- **Recent weather challenges**
- **Pasturebase Ireland**
- **Drought impacts**
- **MoSt grass growth prediction model**
- **Improvements to make**

Annualised Rainfall per Decade - Moorepark

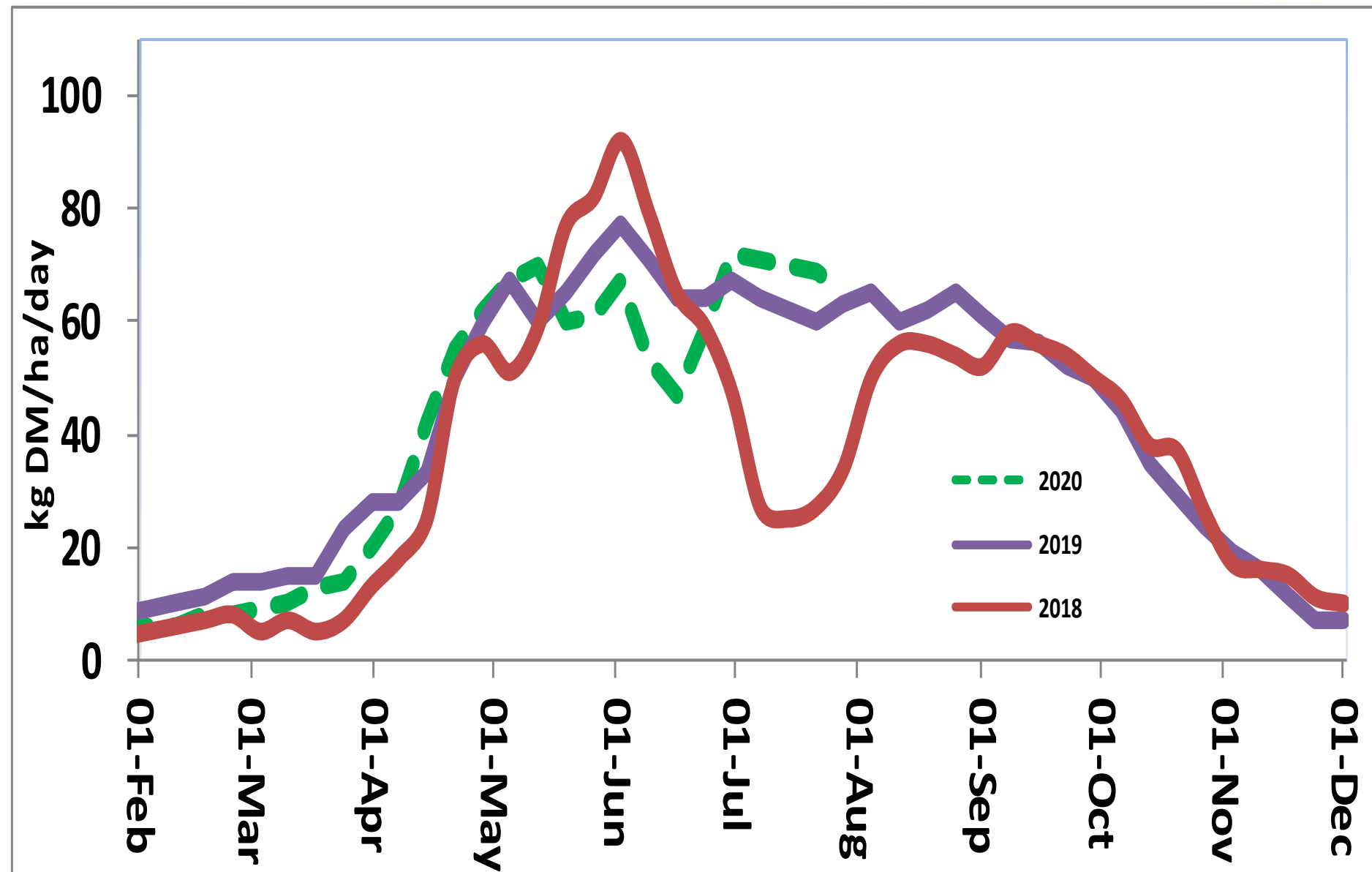


Monthly rainfall per Decade in Moorepark 1950-2019

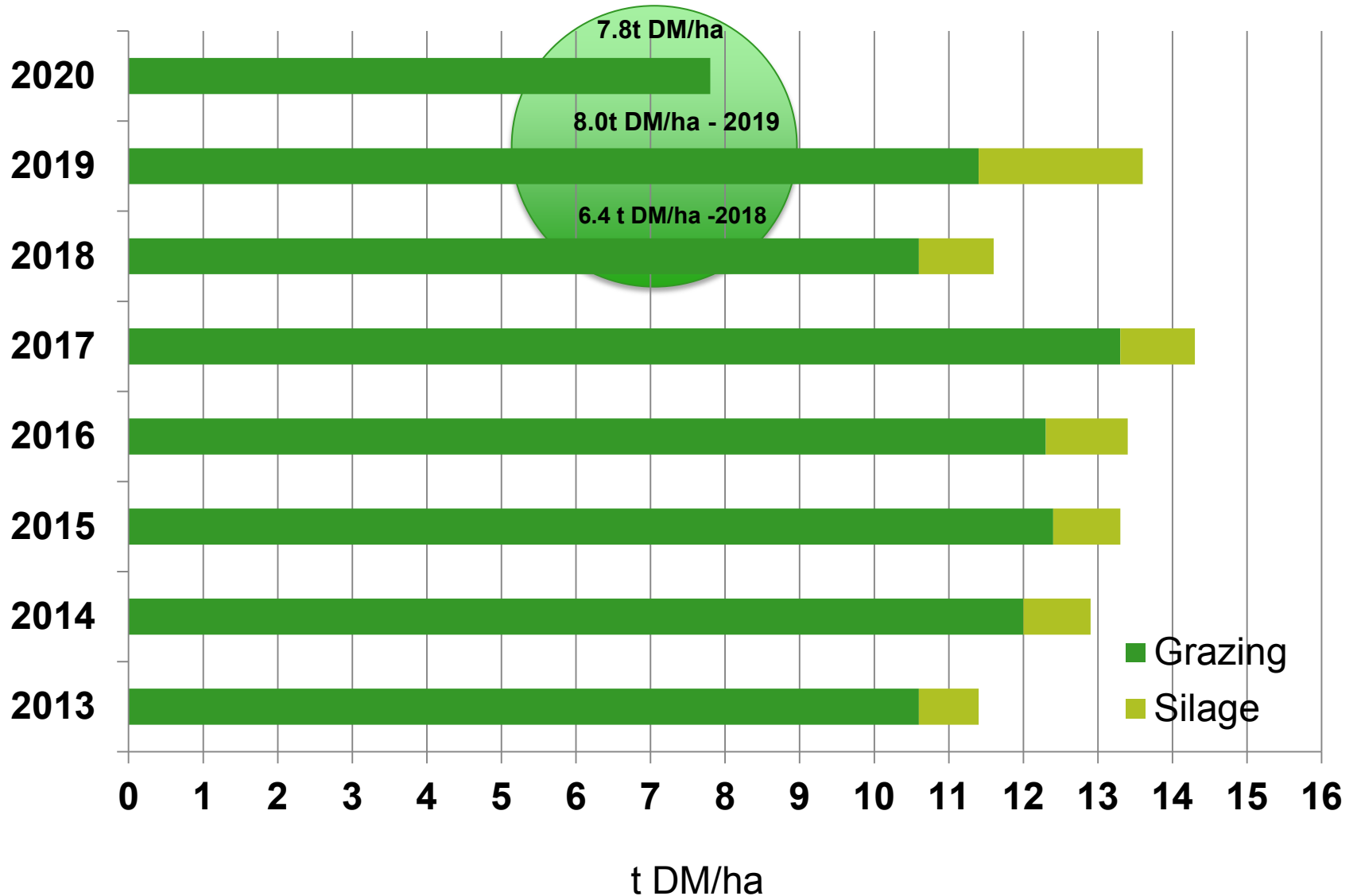


Recent Weather challenges

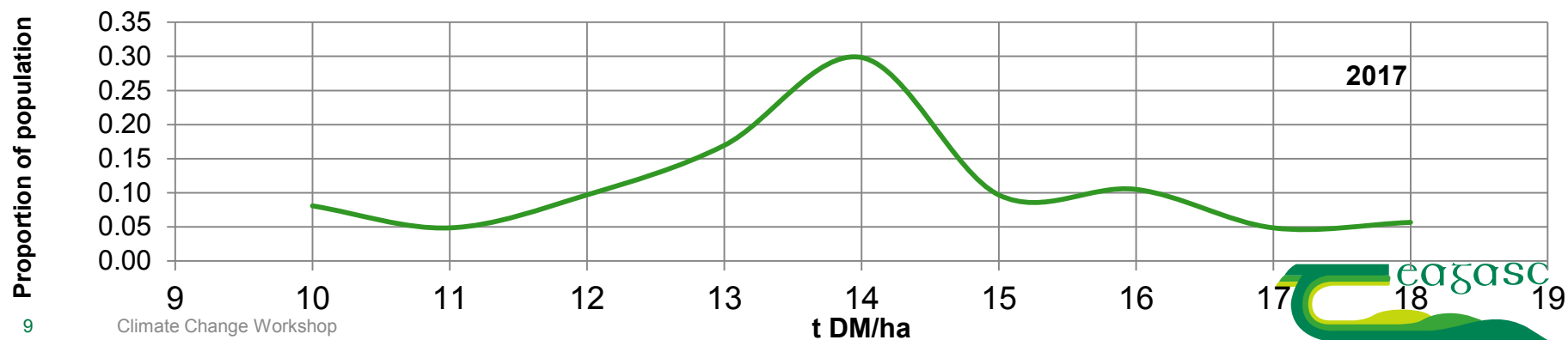
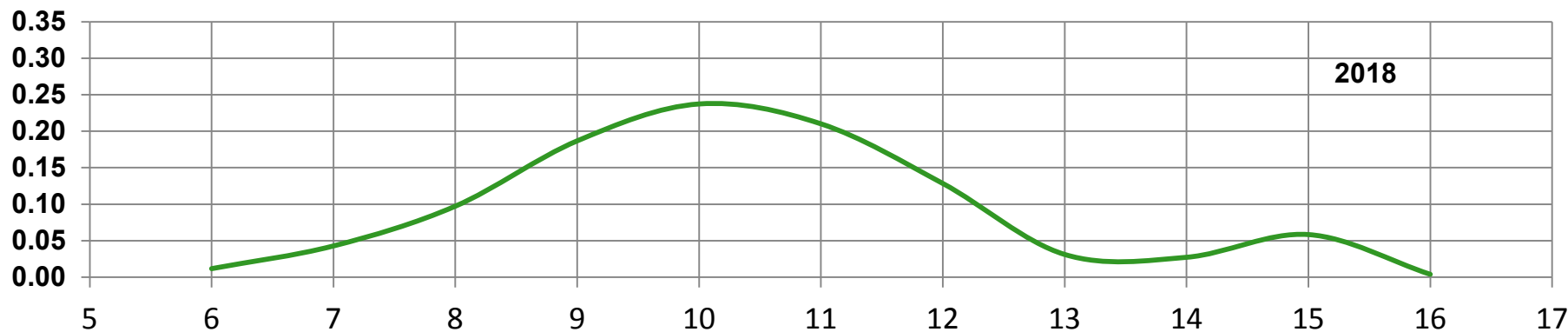
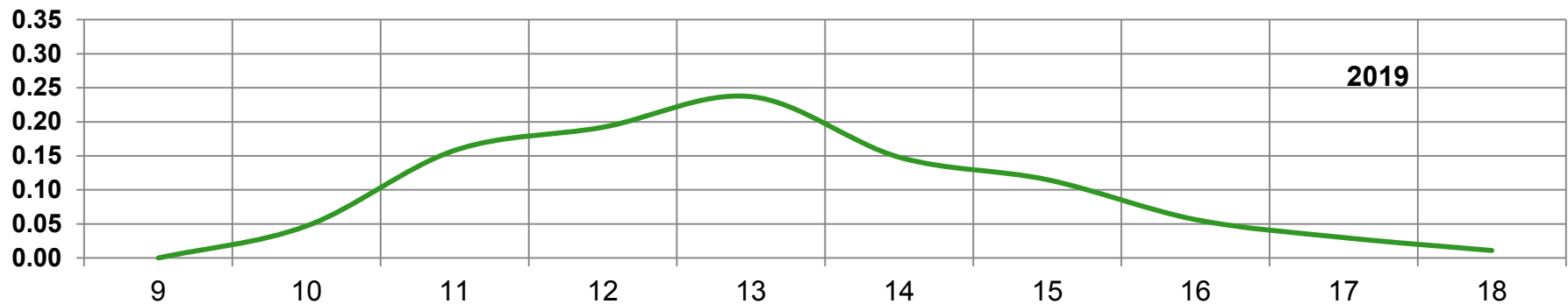
Date	Weather Event	Impacts	Location
May/June 2020	Low Rainfall	Restricted growth in Eastern counties – supplementation intervention required for a number of weeks	Eastern counties
June – August 2018	Low rainfall, high daily temperatures	Subdued grass growth for 6 weeks across country, no second cut silage harvested. Herds supplemented >60% of diet with concentrate and silage etc. Major feed cost, little animal response	Nationwide
March/April 2018	Storm Emma-Snow and lower temperatures	Two weeks low/no growth and storm damage effects. Subdued spring grass growth and grazing utilisation	Nationwide
September-October 2017	Excessive September rainfall Storm Ophelia	Housing of livestock, constrained harvesting of silage, low winter feed availability in Northwest and Midlands	Nationwide
March 2013	Cold wet Spring	Delayed growth, continued housing, reduced fodder supplies from previous autumn	Nationwide
Autumn 2012	Wet Autumn	Early housing, reduced grazing days, fodder shortage	Nationwide
May 2009	High rainfall May	Very poor grazing conditions, delayed first cut silage and reduced DM production for remainder of the year	Nationwide



Dairy Farm grass DM Production (2013-2020)

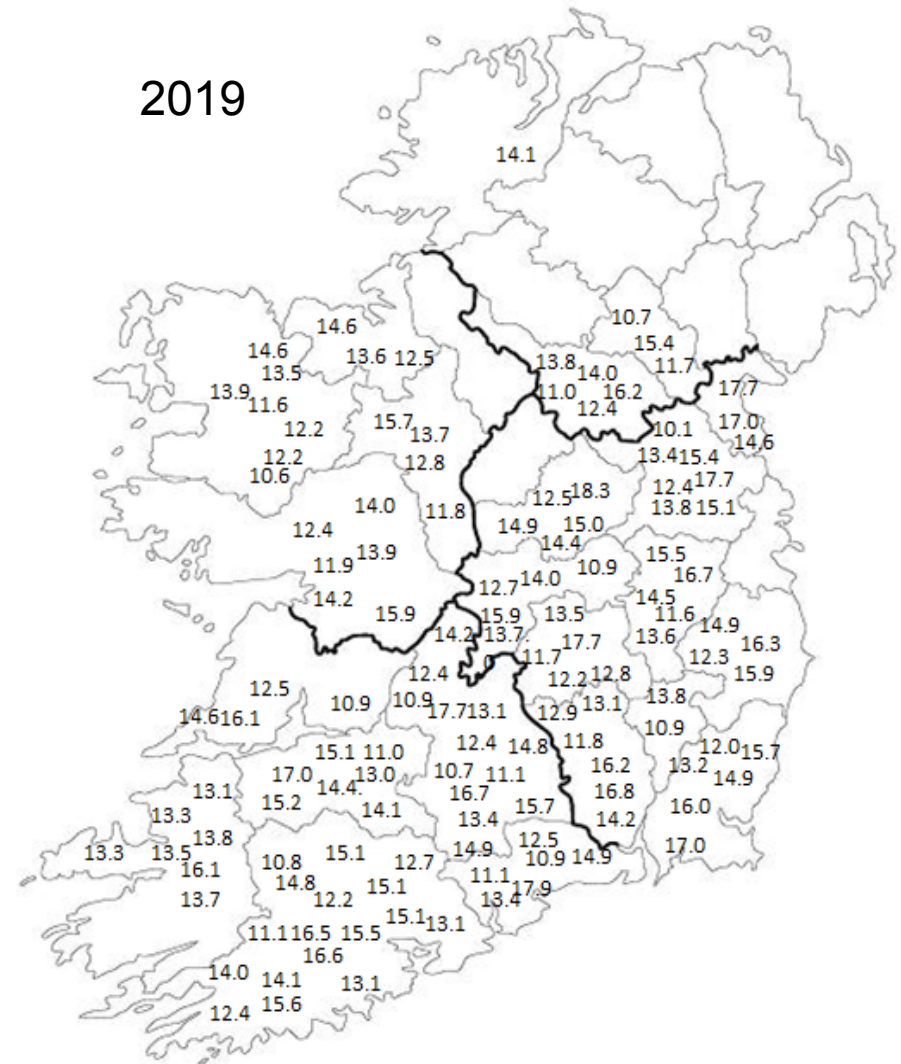


Grass DM Production distribution of PastureBase Ireland farms 2017, 2018 & 2019



Farm Environments – not the same

- Enterprise driven
- Management
- Climate
- Soil types
- Soil fertility
- Sward species
- Outcomes



Drought effects (2018) on National farm survey farms relative to 2017 and 2019

	2017	2018	2019*
Concentrate costs (c/litre)	4.95	6.98	5.8
Concentrate usage (cow)	1030	1353	1138
Pasture and Forage costs (c/litre)	4.21	5.15	4.76
Grazing days	234	229	235
Milk Produced (l/ha)	11,225	11,293	11,969
Total costs(c/lit)	22.9	26.8	24.94

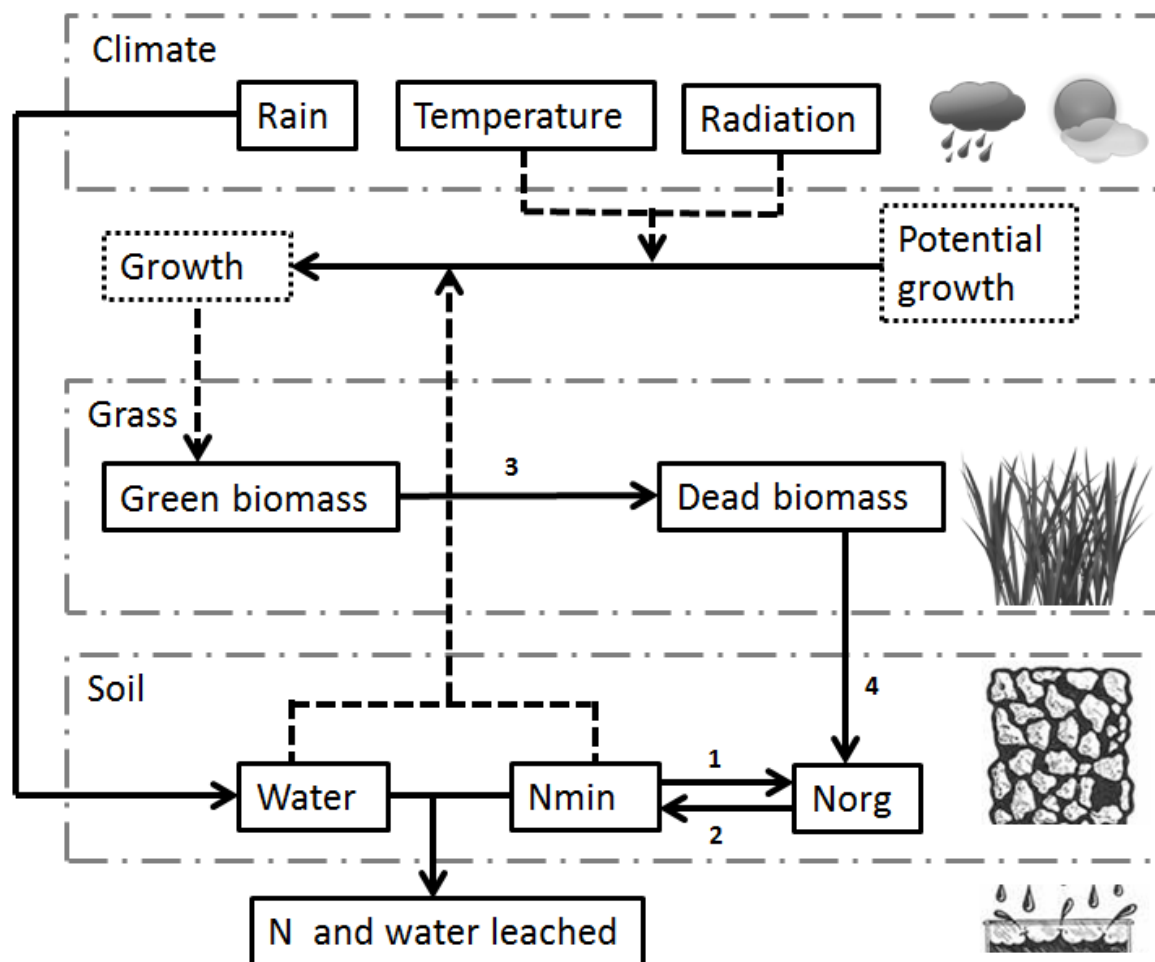
2018 - €16,000K cost to 40 ha Farm

Source; NFS * Preliminary data

2018 Drought Cost Implications

- €400/ha added feed cost in 2018 – €16,000 on 40Ha farm – **there was no added performance from this extra feed inclusion**
- Lower stocked farms had higher feed costs (why) – not focussed enough on grass?
- Residual feed costs – building surplus silage carried into 2019

Overview of the Moorepark St Gilles (MoSt) Grass Growth model

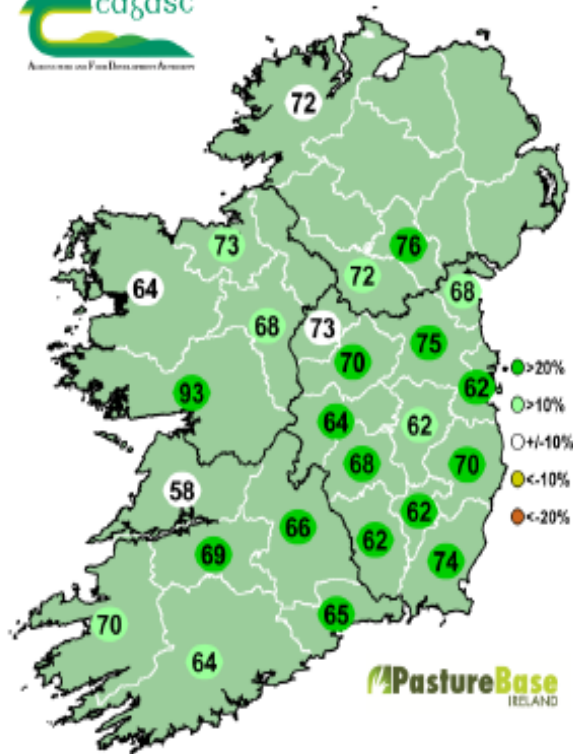


- Management:
- Fertilisation
 - Grazing
 - Cutting

MoSt Grass growth model

Weekly Grass growth prediction

Grass growth measurement
Current grass growth (kg DM/ha/day)



On the left: counties map showing **current** grass growth rates over the last week.

On the right: counties map showing **predicted** grass growth over the next 7 days from farms involved in Elodie Ruelle's MoSt grass growth model (55 farms).

Predicted Growth Rate:

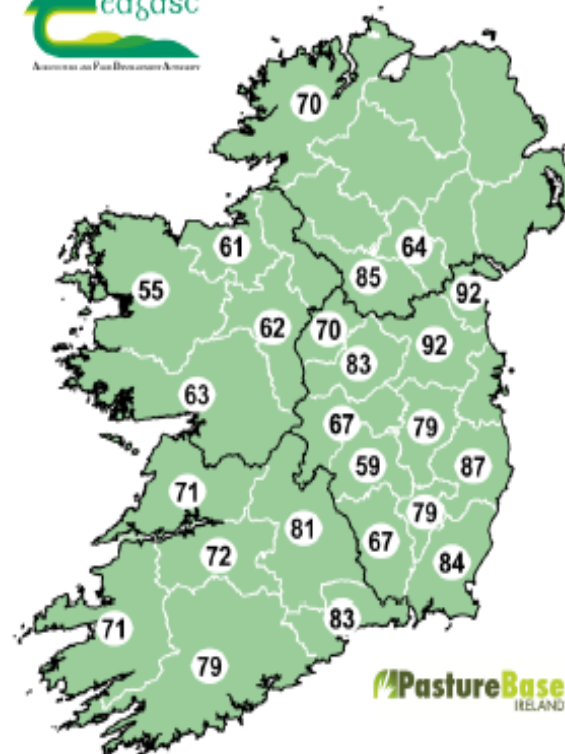
Ballyhaise 76 kg DM/ha

South Wexford 55 kg DM/ha

Athenry 52 kg DM/ha

Clonakilty 72 kg DM/ha

Grass growth predictions
Next week (kg DM/ha/day)



MoSt Model - what can we do now



Teagasc are now supplying grass growth figures to RTE for the Farming Weather Forecast which is broadcast every Sunday. On the left is weather presenter Jean Byrne showing the latest growth figures from PastureBase Ireland.

MoSt Model - what can we do now

- Building awareness – locally and nationally
- Forecasting – making data driven decisions
- Farmers now using the model outputs in grassland decisions
- Continually improve and ensure the end user is getting **decisive, decision making feedback**
- Machine learning and benchmark decisions

Summary

- No grass growing year is similar – National awareness
- Grass growth require continuous tracking
- Grass the central feed to the livestock systems
- Farm self sufficiency, completely overlooked until there is a SUPPLY issue
- Conserved feed surplus on all farms (400kg DM per LU – 6 weeks)
- PBI – active grass measurement (continued promotion)
- MoSt grass growth prediction (Nationally)
- Annual Fodder budget calculator (PBI –on line system available to all farmers)
- Better equipped to react earlier to grass supply changes