Agri-Food and Biosciences Institute

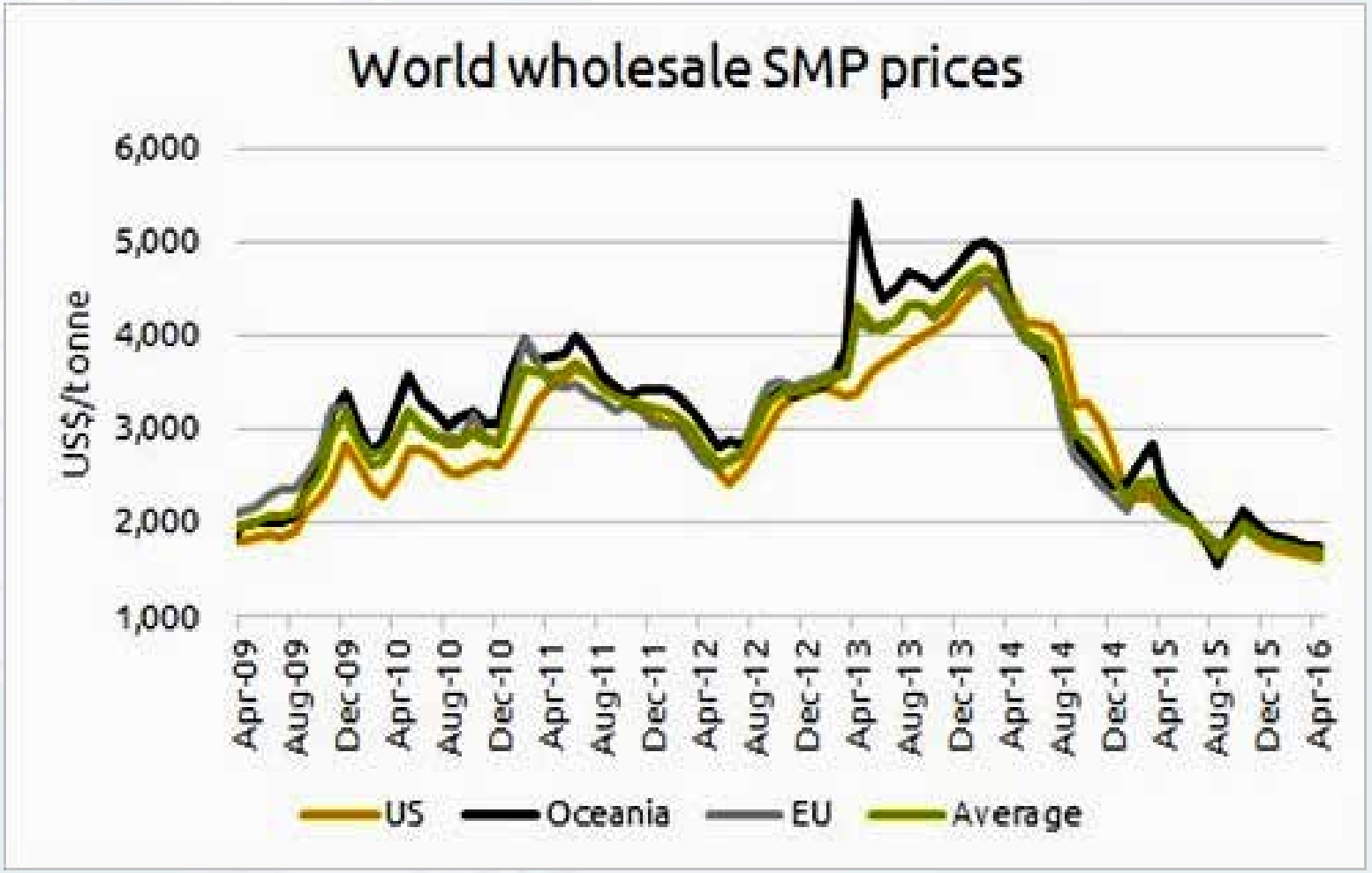
Addressing the Dairy Farming Crisis- Using Research Information to Improve Technical Efficiency

Dr Conrad Ferris

Overview

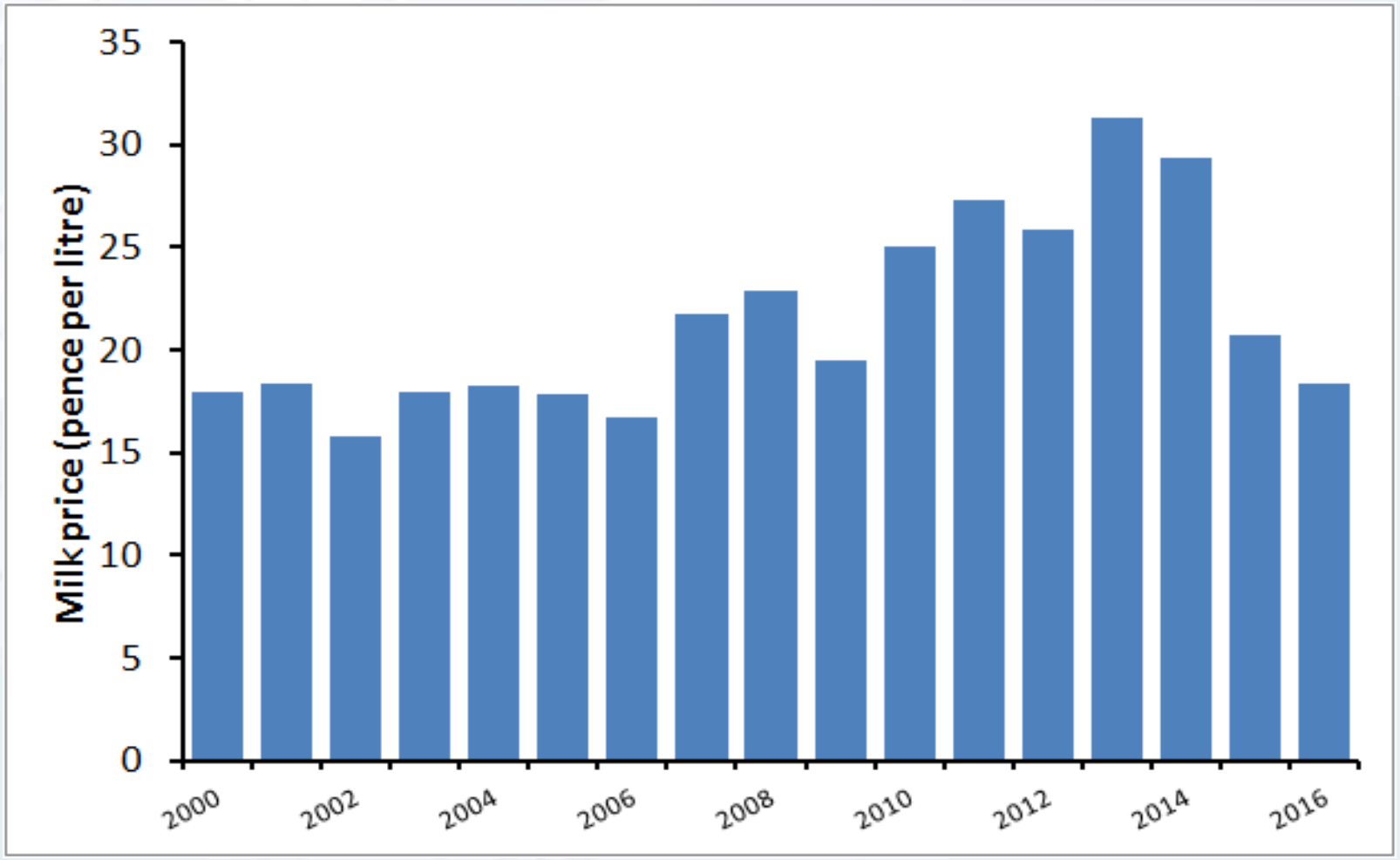
- Background to current crisis
- Strategies to control costs
  - Heifer rearing (age at calving)
  - Controlling feed costs
  - More from forage
  - Future challenges

Global Dairy Markets in Decline



Source:dairy.ahdb.org.uk

Average NI Milk Prices Since 2000



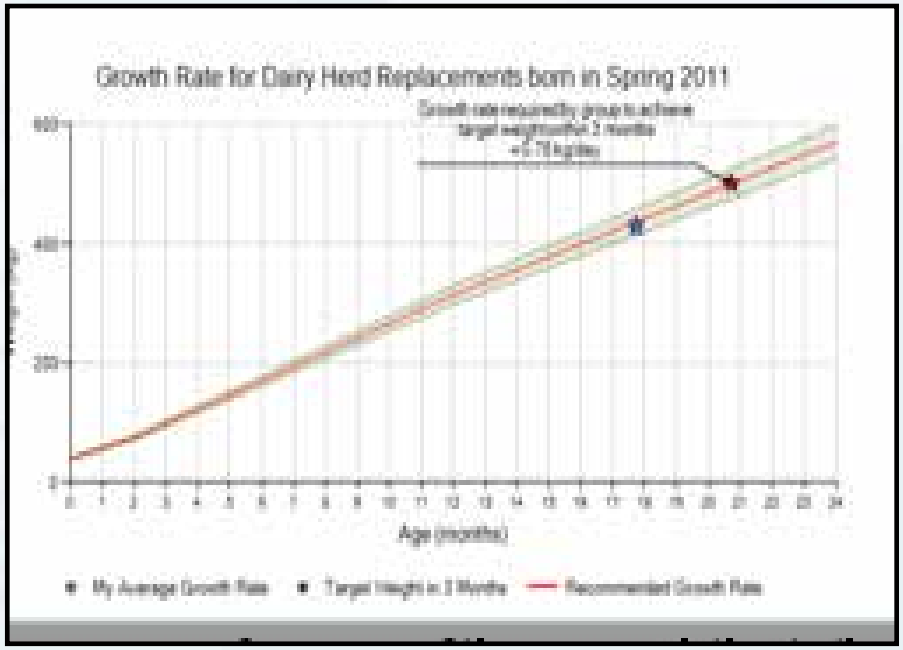
How Can Research Help?

- Key production challenge at present - improve margin (reduce loss) on each litre of milk produced
  - Margin determined by price and production costs

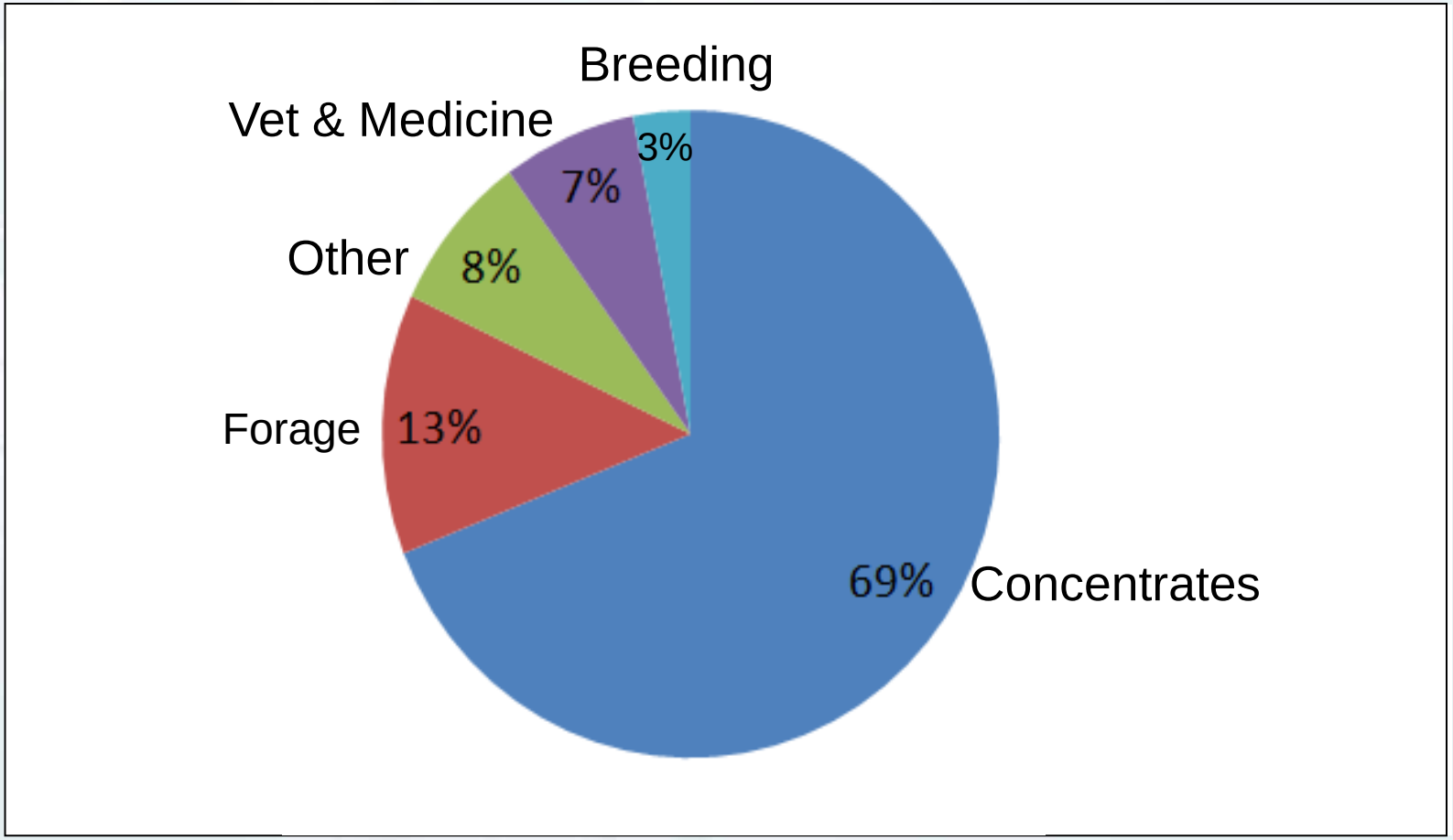
AFBI research designed to help control production costs

Heifer Rearing for Lifetime Performance

Rearing costs £295 less per replacement for 24 month vs 30 month calving (£8850 saving per 100 cow herd)



Controlling Feed Costs



(Variable costs of milk production on NI dairy farms, CAFRE Benchmarking)

Controlling feed costs

Make more use of quality forage

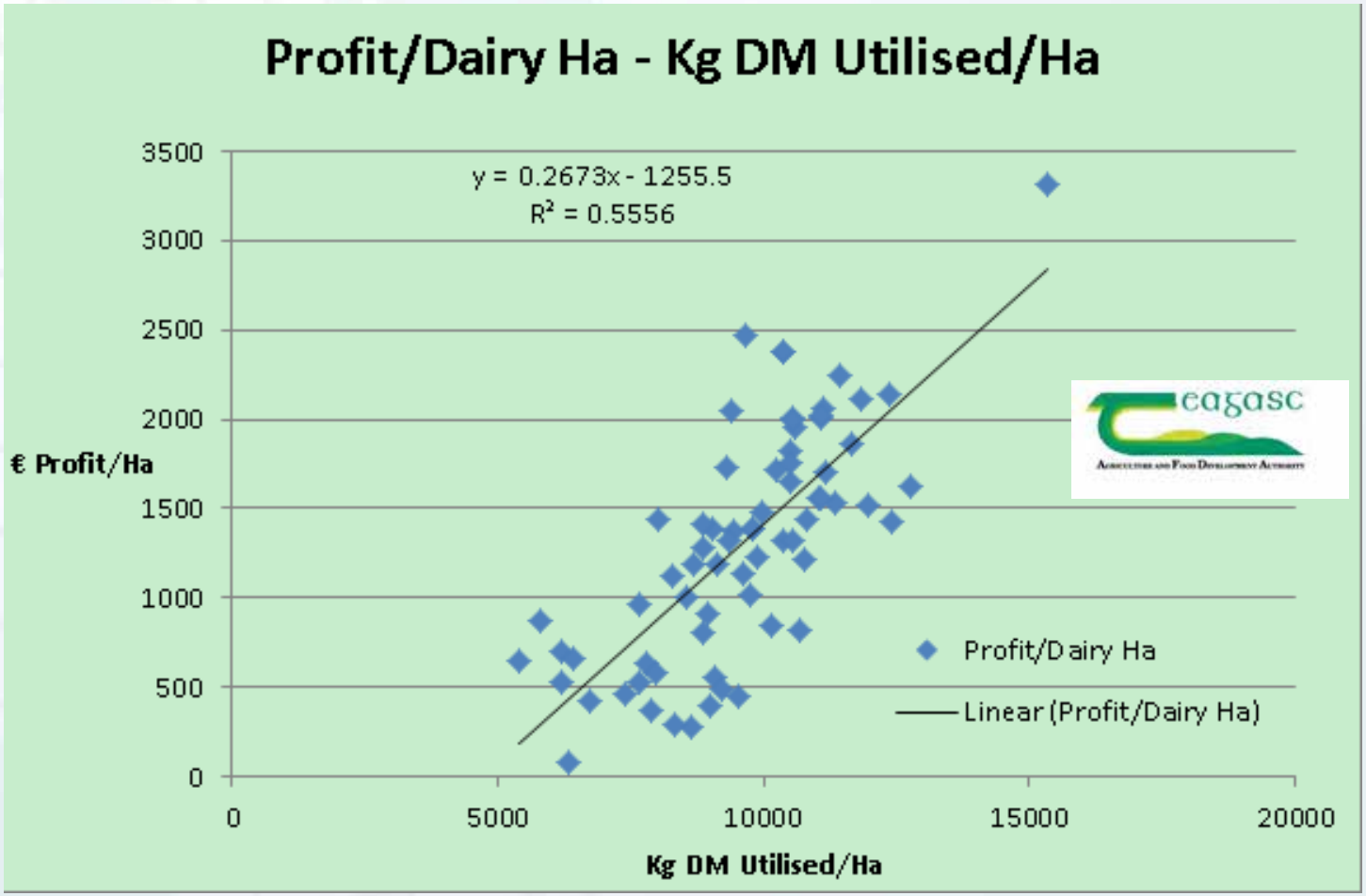
Make more efficient use of concentrates

Grazed grass

Grass silage

Milk from forage currently approximately 1500 litres/cow/year (declined from 3250 l in 2000 - Cafre benchmarking)

Relationship Between Milk From Forage and Common Margin Per Cow from CAFRE Benchmarking



Each 1000 litre increase in milk from forage is worth £120 per cow in increased common margin.

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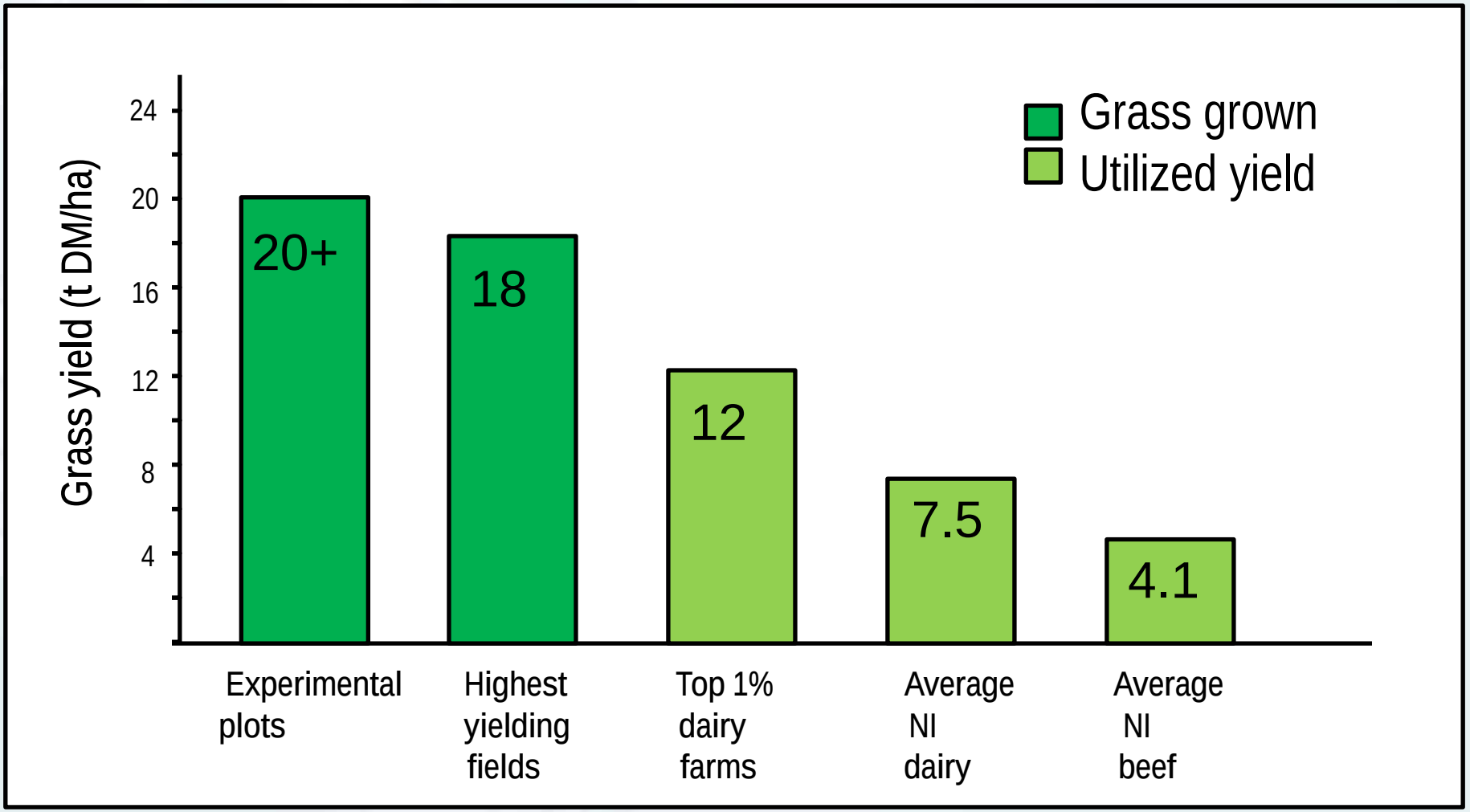
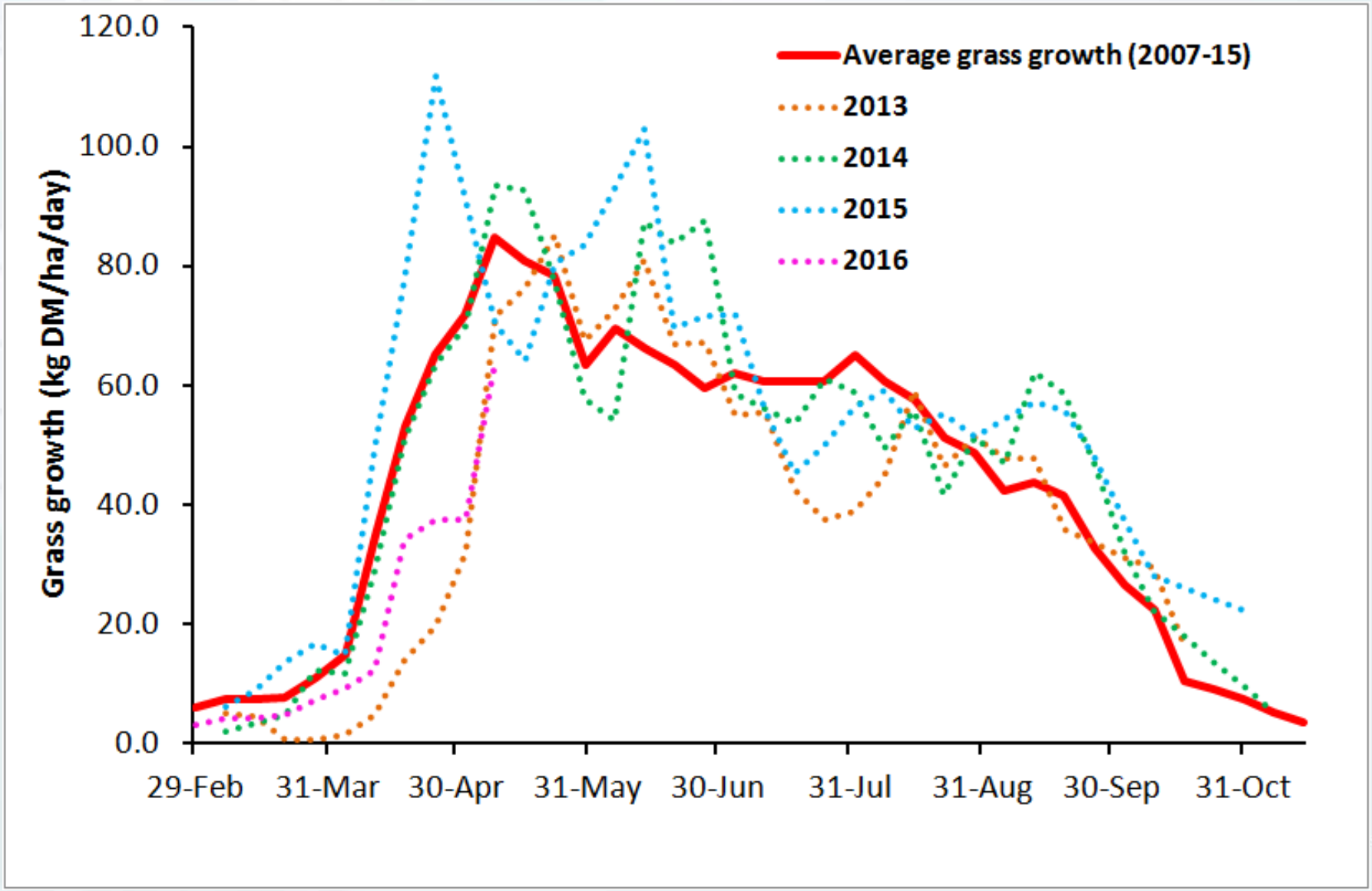
Increased Grass Utilisation -Potential Saving to NI Dairy Farms

Increasing milk from forage from 1500 litres per cow to 3250 litres per cow (achieved in 2000) has potential to reduce production costs by £45 m across Northern Ireland dairy farms

Grass Production and Utilisation



Variability in grass growth

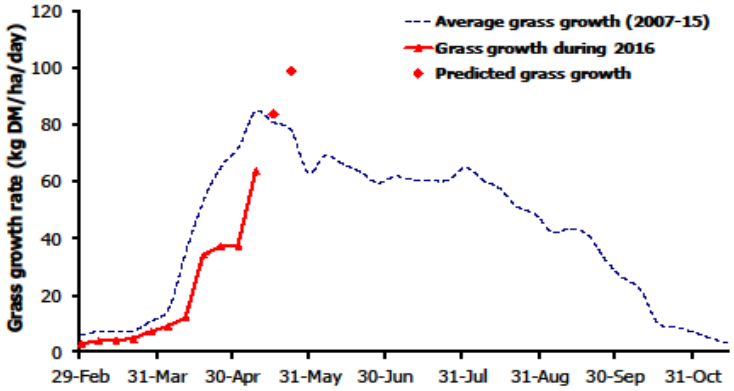


GrassCheck

30 weekly bulletins over the ‘grass growing’ season

GrassCheck

Week beginning 9 May 2016



Grass growth and quality measured from swards at Hillsborough and Greenmount

Grass Growth (kg DM/ha/day)*		
Previous 3 weeks	9 May	64
Predicted	16 May	84
	23 May	99

* 270 kg N/ha/year applied

Grass Quality	
Dry matter (%)	17.5
ME (MJ/kg DM)	11.8
Crude protein (%)	21.9
Sugars (% DM)	12.5

Management notes.

- As expected growth has responded to the rising temperatures, and with the current showery and warm conditions, growth is racing towards its annual peak.
- It is a critical time to focus on providing grazing livestock with the correct quality and quantity of grass, as decisions made in the next two weeks will have a long lasting effect on grass quality and growth through early and mid summer.
- Where surplus grass is identified and first cut silage is not expected for a further week, consider baling these paddocks to get the sward back growing again.
- With grass supply increasing, supplementation with forage and concentrates can now be reduced, with research demonstrating that quality grass in May is capable of supporting at least 22 litres of milk.

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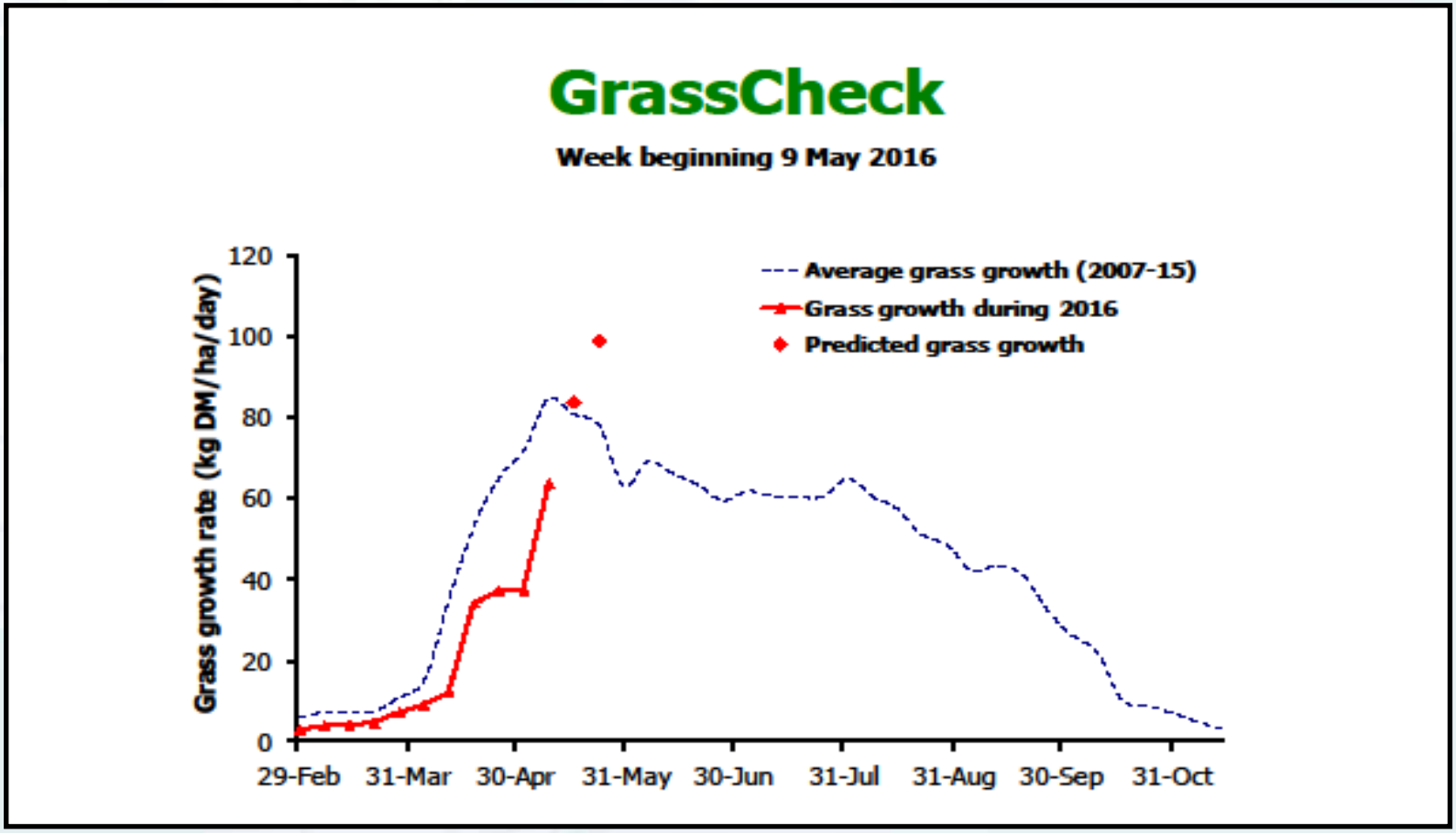
Predicting Grass Growth

- Key requirement of any grazing decision support system is prediction of grass growth.

- Hillsborough research team coordinated and led major EU Framework 5 project with 6 European partners (2000-2003).

- Grazemore grass growth prediction model takes account of: grass species and variety; current growth; soil temperature; soil fertility and moisture levels; and projected weather conditions.

GrassCheck Grass Growth Prediction



Research Into Practice

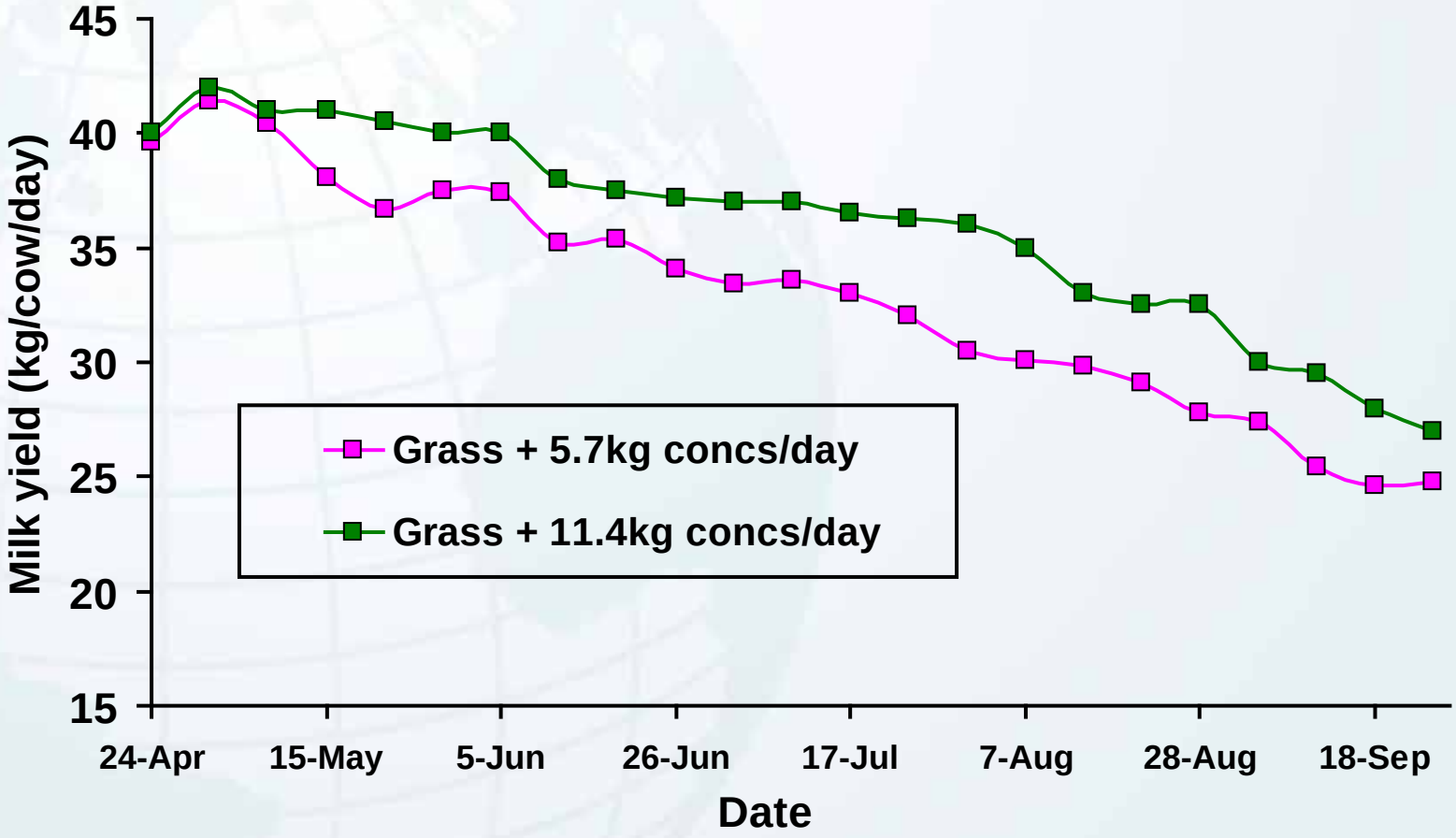
- Original Grazemore project commissioned by EU in 2000, results published in series of papers in 2004
  - international impact
  - led to series of ongoing collaborations – SOLID, G Plus E, EuroDairy and GENiUS

- Growth Prediction Model forms basis of many international grass budgeting models – Grass Wedge (NZ, Ireland,…) and Herb'aVenir (France).

- Model also used on a weekly basis since 2002 to assist improved grassland management on Northern Ireland farms

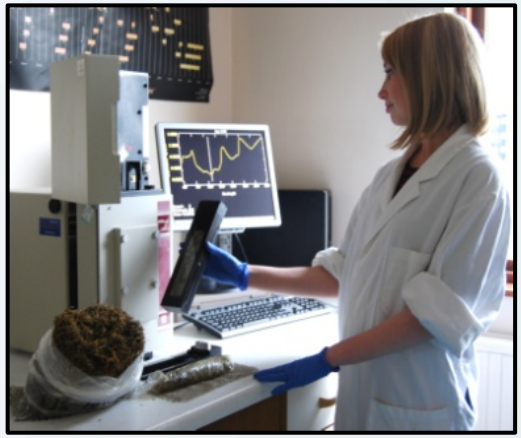
Milk Yield Potential of Grass plus Supplements

(Sayers *et al*., 2000)



Grass silage – An Underused Resource?

- AFBI - world leader in the development of systems to predict the chemical composition and nutritive value of forages (NIRS).

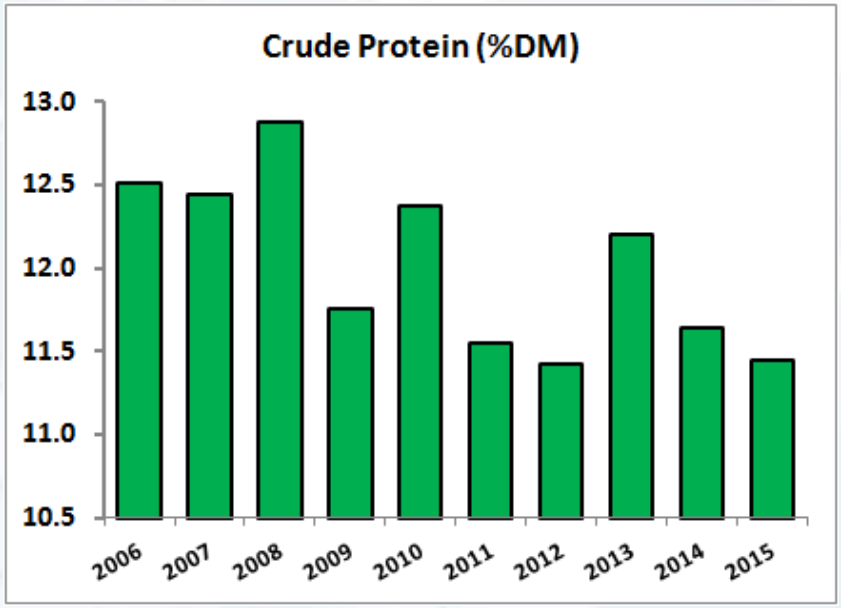


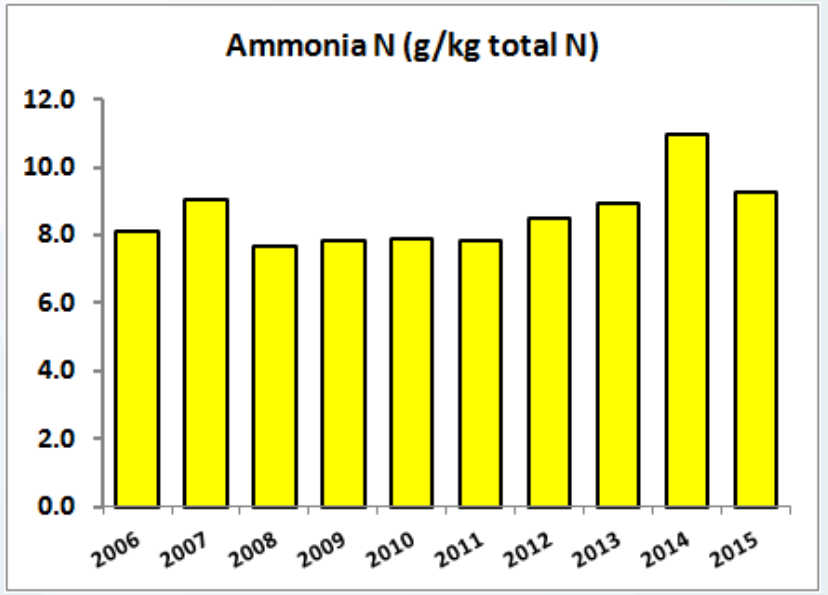
- Forage analysis available through the Hillsborough Feeding Information System (HFIS) – provides a fast, accurate and affordable service to the ruminant sector throughout Northern Ireland and further afield.

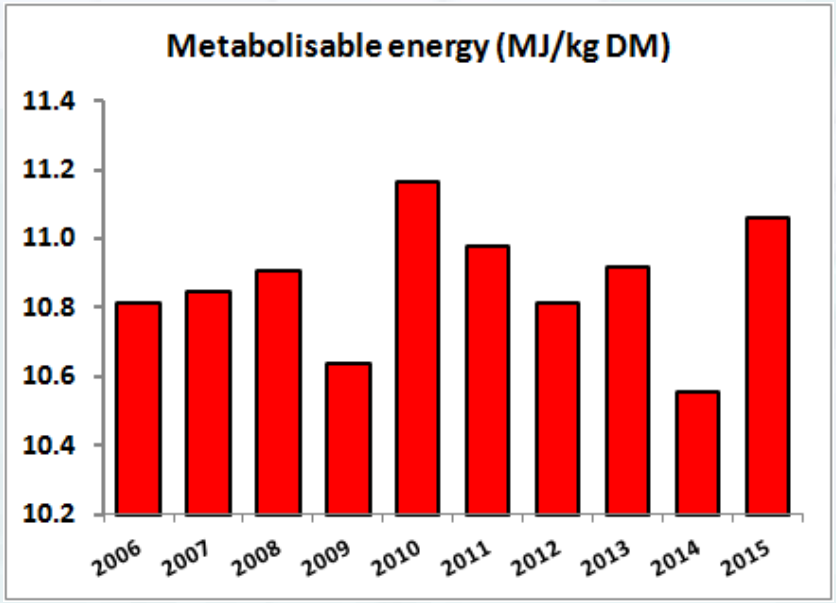
- The ‘concentrate sparing’ effect of quality silage has been consistently demonstrated – real scope to improve profitability by improving the quality of conserved forage

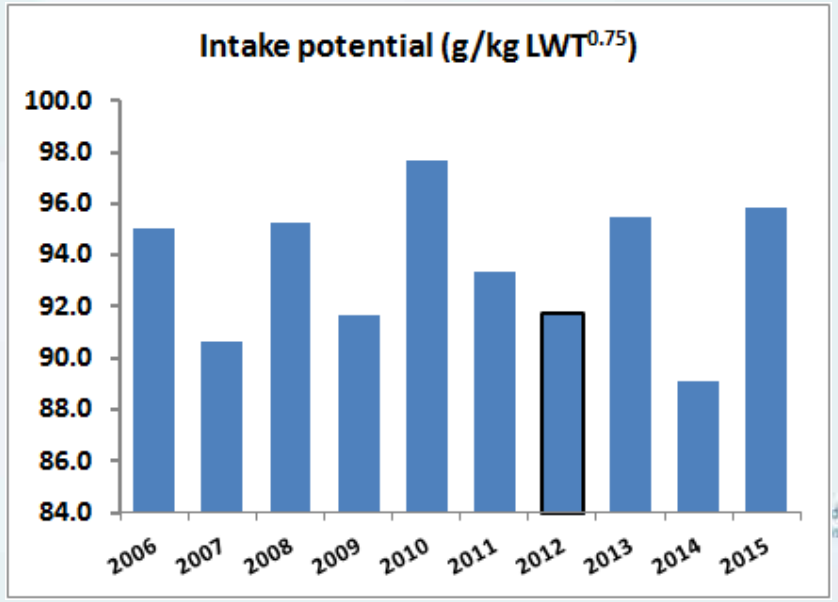
Key Concern:
No improvement in the quality of grass silage during the last 20 years

Silage quality over the last 10 years
(1st cut)









A Renewed Focus On Silage Quality Is Essential

Future Challenge: Improving Feed Conversion Efficiency

- Globally - conflicting demands for food for direct human consumption vs. as a feed for livestock
- Quality animal products will remain an important component of the human diet – but production efficiency must improve (more from less!)
- Can be achieved through:
  - Improved nutritional strategies
  - Improving feed conversion efficiency





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- Breeding for more efficient cows – advances in genomic technologies
- AFBI involved in EU projects: GplusE and GENiUS

10 YEAR ANNIVERSARY 2006-2016

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Conclusions

- Extremely challenging time for the dairy sector
- Key objective must be to improve margin (minimise loss) on each litre of milk produced – focus on production costs
- Heifer rearing – calving at 24 months
- Controlling feed costs is critical
  - Optimise the use of grazed grass
  - Renewed focus on quality silage
  - Make more efficient use of concentrate feeds
- Focus on technical efficiency irrespective of production system
- AFBI research seeks to provide both short and long term answers for the local dairy sector

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Acknowledgements