Making More from Grass

Emily Grant, Quality Meat Scotland

WHY???

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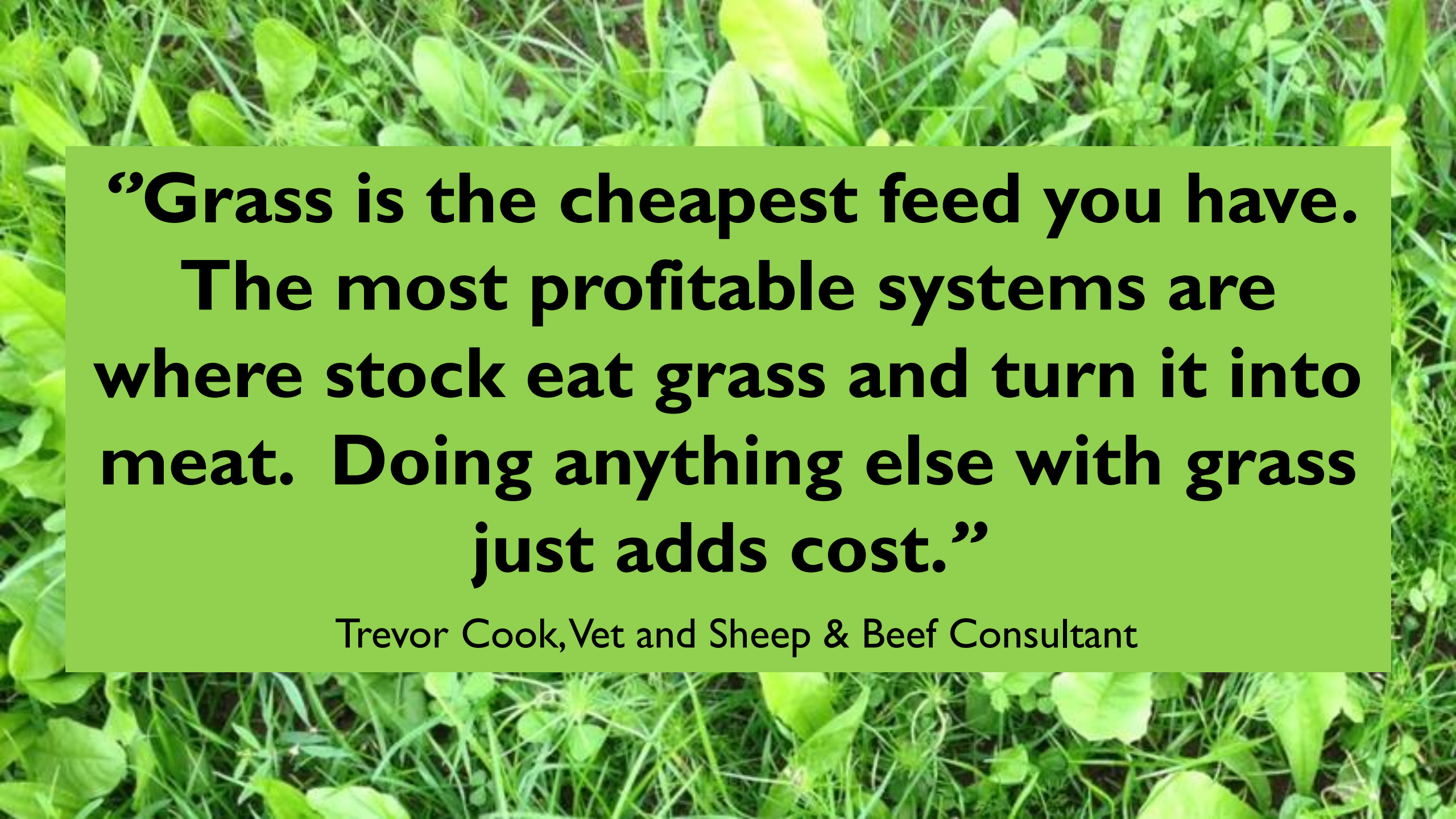
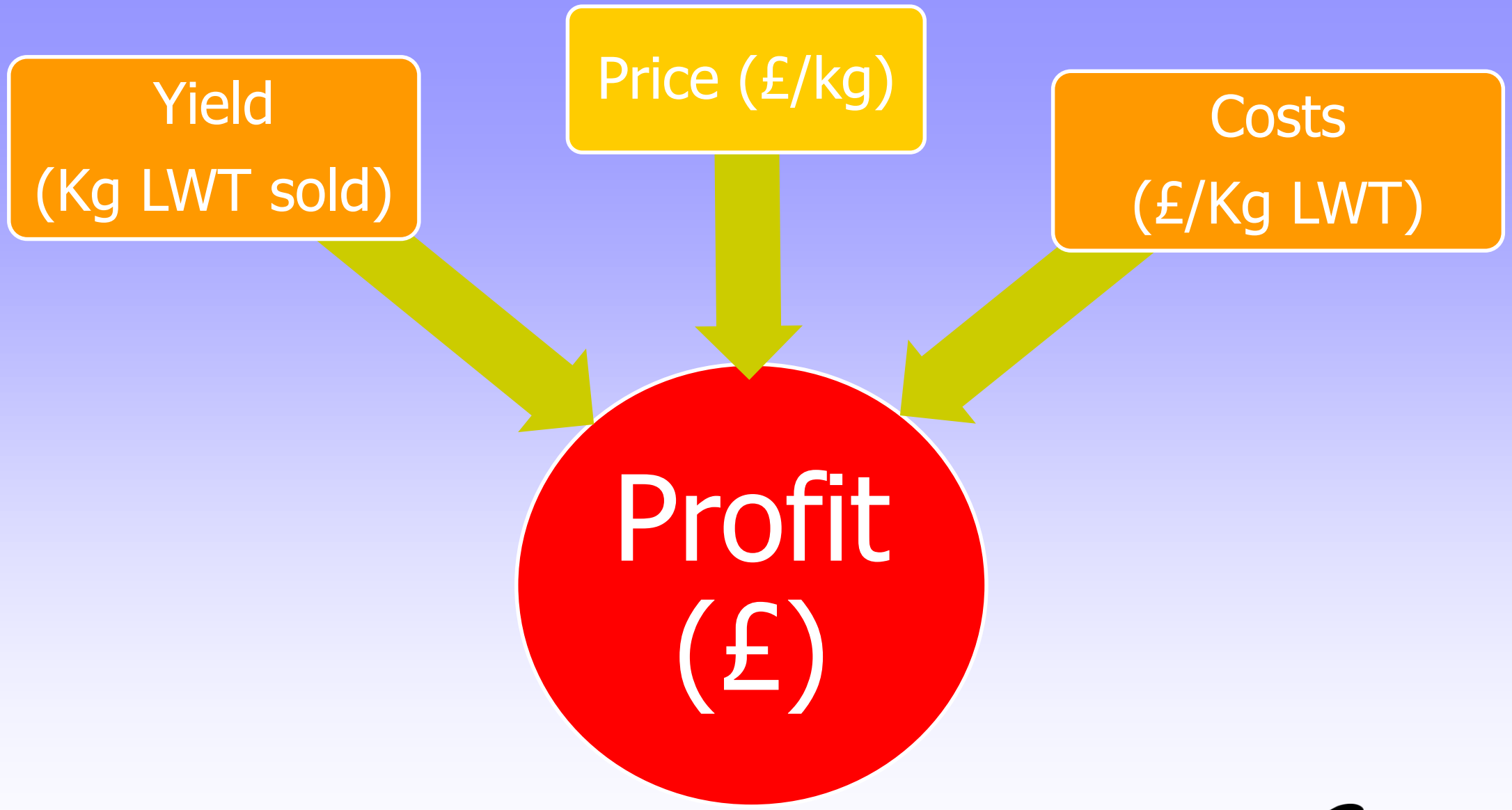

"Grass is the cheapest feed you have. The most profitable systems are where stock eat grass and turn it into meat. Doing anything else with grass just adds cost."
Trevor Cook, Vet and Sheep & Beef Consultant


Yield
(Kg LWT sold)
Price (£/kg)
Costs
(£/Kg LWT)
Profit
(£)

Grazing to Increase Production (Yield)

Year end	Kg LWT/Ha	Comments
2015	293	Changing the System
2016	381	Actual
2017	430	Actual (700 more lambs than 2016)
2018	520	Forecast - another 300 ewes (300 more lambs)

Grazing to Reduce Costs

Feed	2011/12	2012/13	2013/14	2014/15	2015/16
Ewe feed	109	117	42	26	22
Blocks	4	5	10	9	6
Tup & Lamb	60	71	56	22	6
Barley	108	81	79	67	27
Cattle Blend	88	73	43	40	33
Beef Finisher	11	10	79	3	0
Total	380	357	309	167	94

SCOTCH BEEF SCOTCH LAMB SPECIALLY SELECTED PORK

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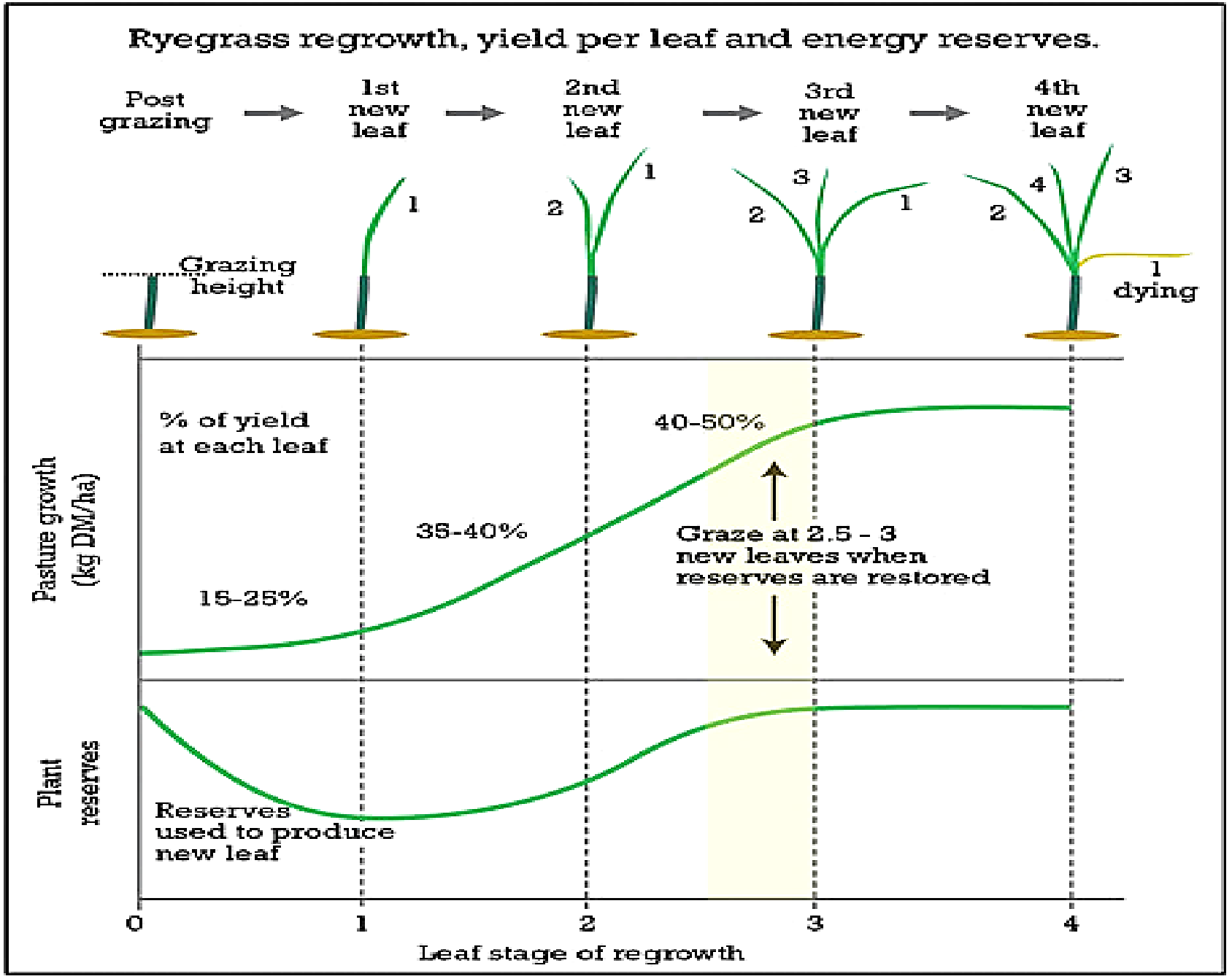
Total Kg LWT/ha	**245.70**		**317.16**	

Costs per LWT Kg produced	£/kg LWT produced	£/kg LWT produced	£/kg LWT produced	£/kg LWT produced
	Cattle	**Sheep**	**Cattle**	**Sheep**
Purchased Feed	£0.34	£0.53	£0.26	£0.41
Purchased Fertiliser (including lime)	£0.31	£0.16	£0.24	£0.12
Purchased Forage	£0.25	£0.05	£0.22	£0.04
Purchased Minerals	£0.00	£0.00	£0.00	£0.00
Vet & Med	£0.06	£0.11	£0.06	£0.11
Seed & Sprays	£0.04	£0.02	£0.03	£0.02
Contractors charges (excluding silage)	£0.33	£0.17	£0.25	£0.13
Contractors charges (silage)	£0.33	£0.04	£0.25	£0.03
Grazing rents	£0.00	£0.00	£0.00	£0.00
Miscellaneous Variable Costs	£0.02	£0.08	£0.01	£0.07
Purchased Livestock	£0.04	£0.05	£0.04	£0.05
Total Variable Costs	**£1.73**	**£1.21**	**£1.37**	**£0.98**
Power & Machinery Costs	£0.67	£0.34	£0.51	£0.27
Labour	£0.00	£0.00	£0.00	£0.00
Administration/Miscellaneous fixed costs	£0.36	£0.19	£0.28	£0.15
Property Costs	£0.03	£0.02	£0.02	£0.01
Rent	£0.53	£0.27	£0.40	£0.21
Finance	£0.57	£0.29	£0.43	£0.23
Total Fixed costs	**£2.17**	**£1.11**	**£1.65**	**£0.87**
Total Costs	**£3.90**	**£2.32**	**£3.01**	**£1.85**

How?

Key Rules for Grazing

- Give it a Rest
- Don’t Graze Regrowth
- Use what you grow


Ryegrass regrowth, yield per leaf and energy reserves.
Post grazing
1st new leaf
2nd new leaf
3rd new leaf
4th new leaf
Grazing height
1
2
3
4
dying
% of yield at each leaf
15-25%
35-40%
40-50%
Graze at 2.5 - 3 new leaves when reserves are restored
Pasture growth (kg DM/ha)
Plant reserves
Reserves used to produce new leaf
0
1
2
3
4
Leaf stage of regrowth

SCOTCH BEEF

SCOTCH LAMB

SPECIALLY SELECTED PORK

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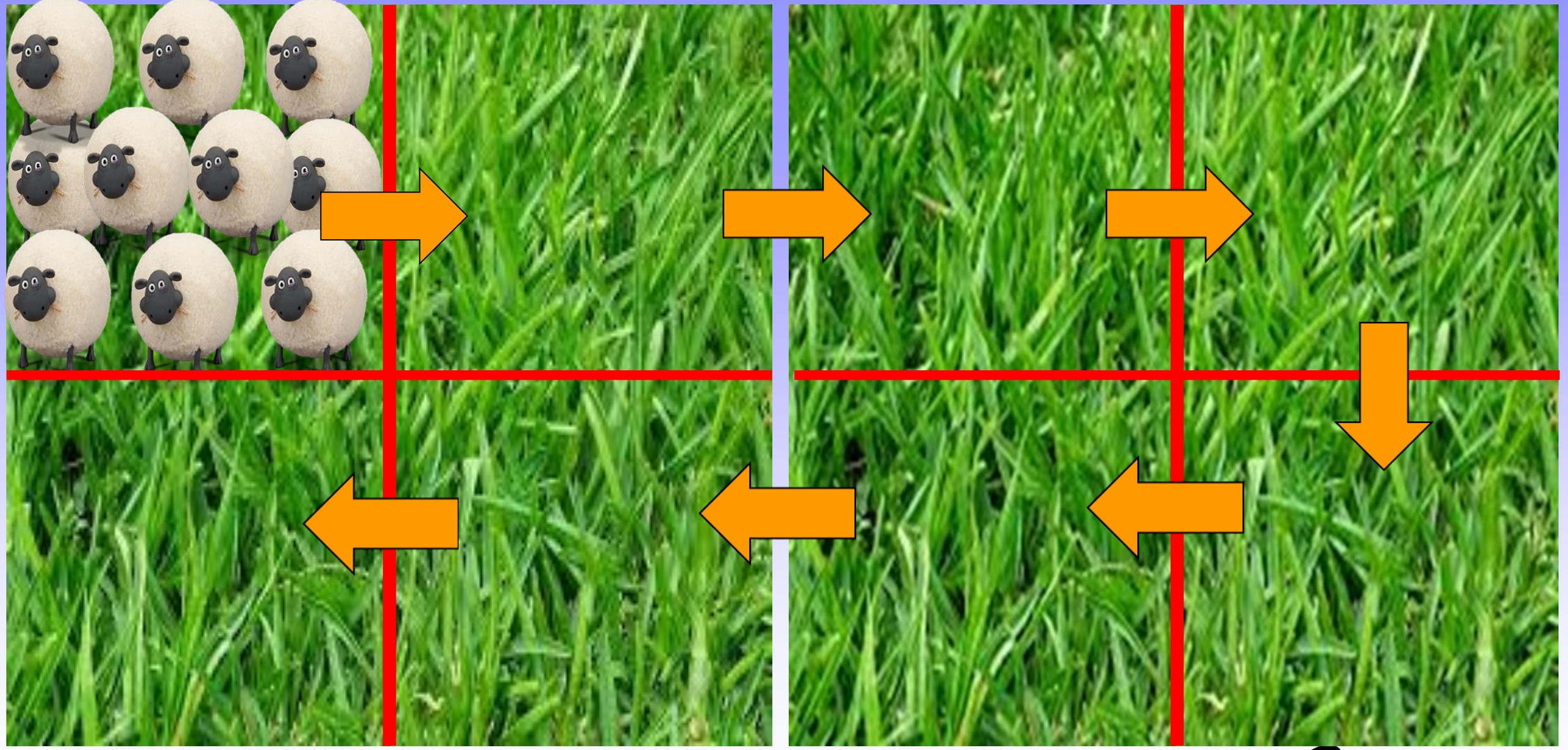
SCOTCH BEEF
SCOTCH LAMB
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PORK
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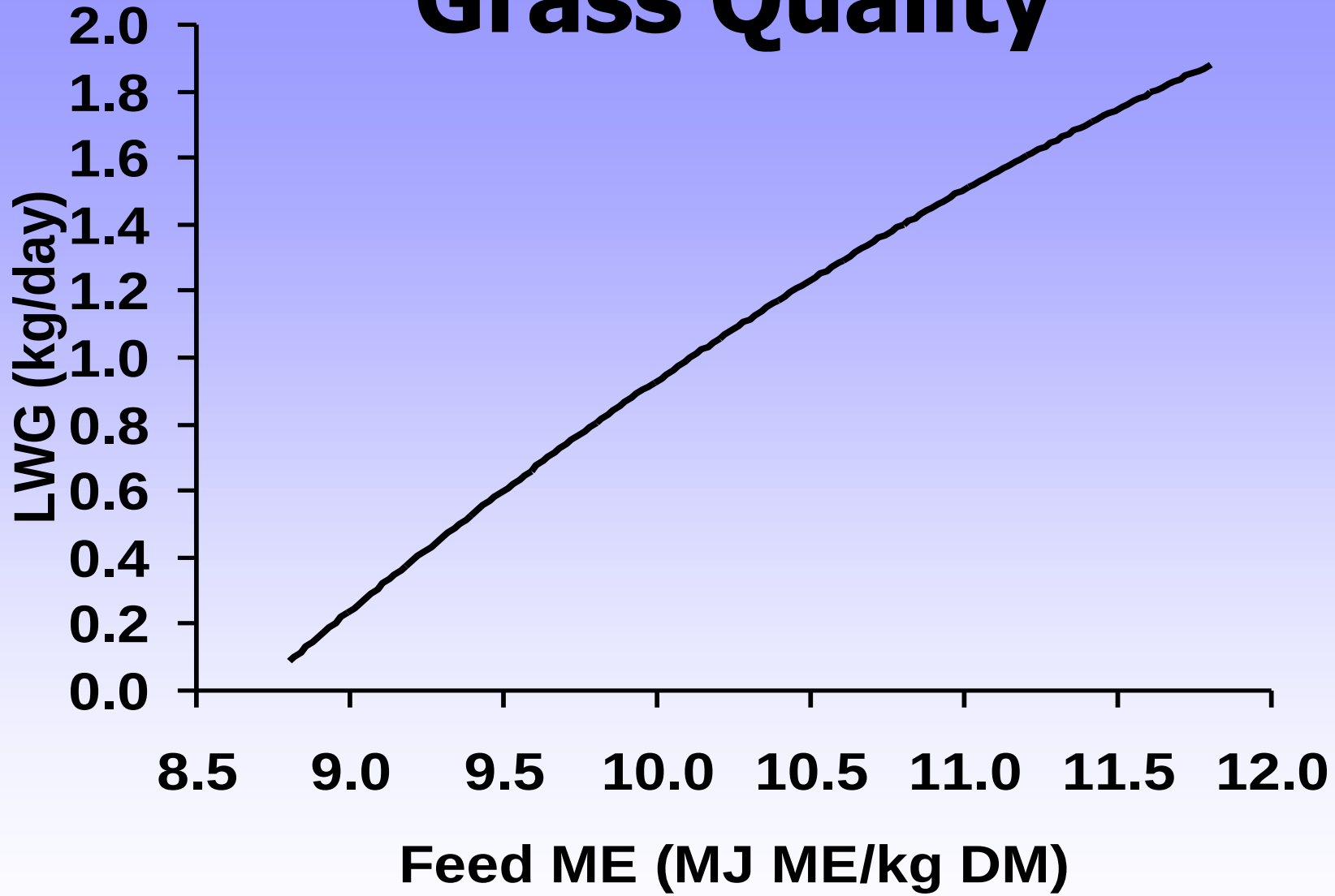
Utilisation

System	Annual Yield (t DM/ha)	Utilisation (%)	Usable yield (t DM/ha)	Percentage increase
Set stocking	8.5	50	4.3	
Rotational	10.2	65	6.6	56%
Paddock	10.2	80	8.2	92%

Grass Quality



SCOTCH BEEF

SCOTCH LAMB

SPECIALLY SELECTED PORK

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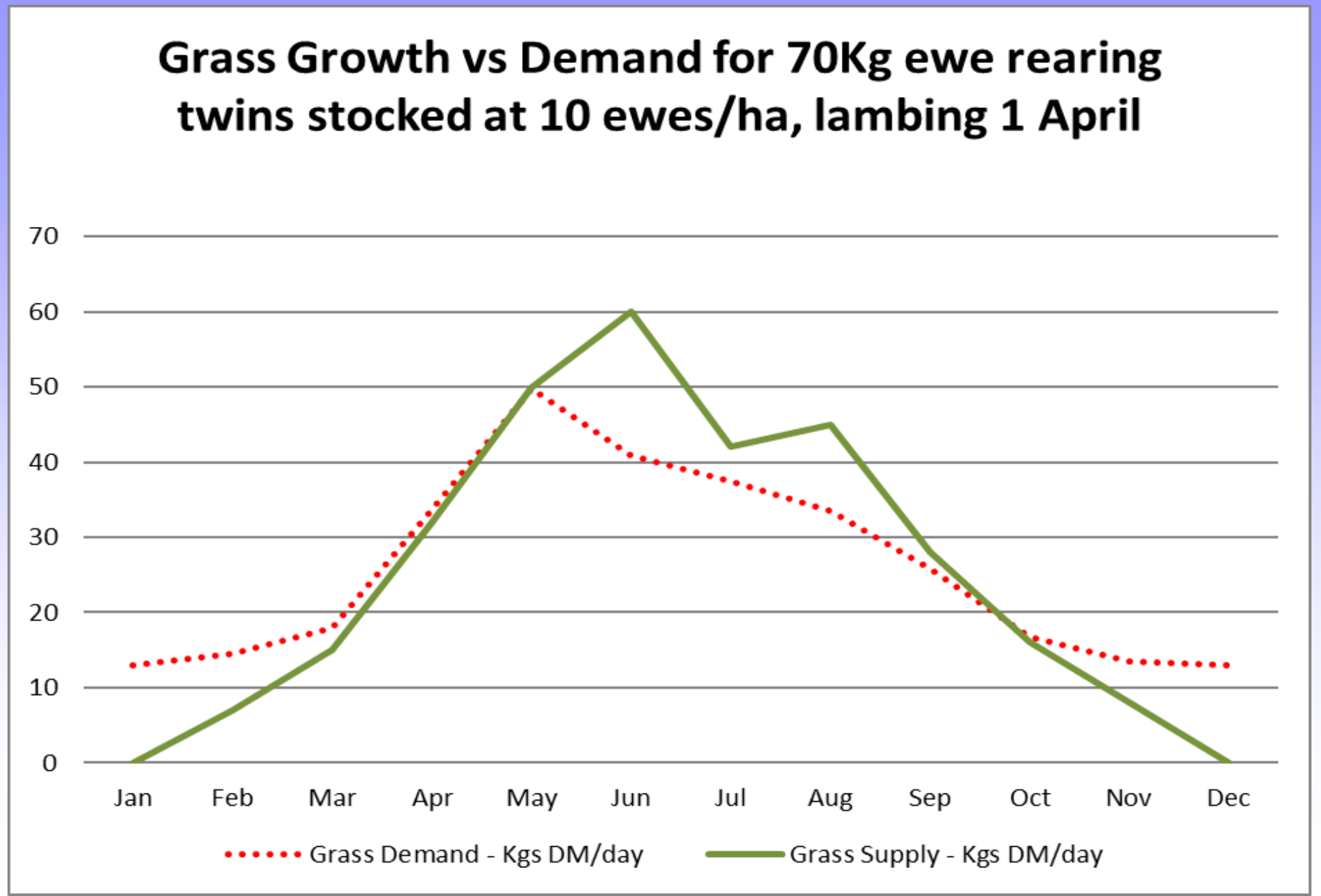
Supply v. Demand



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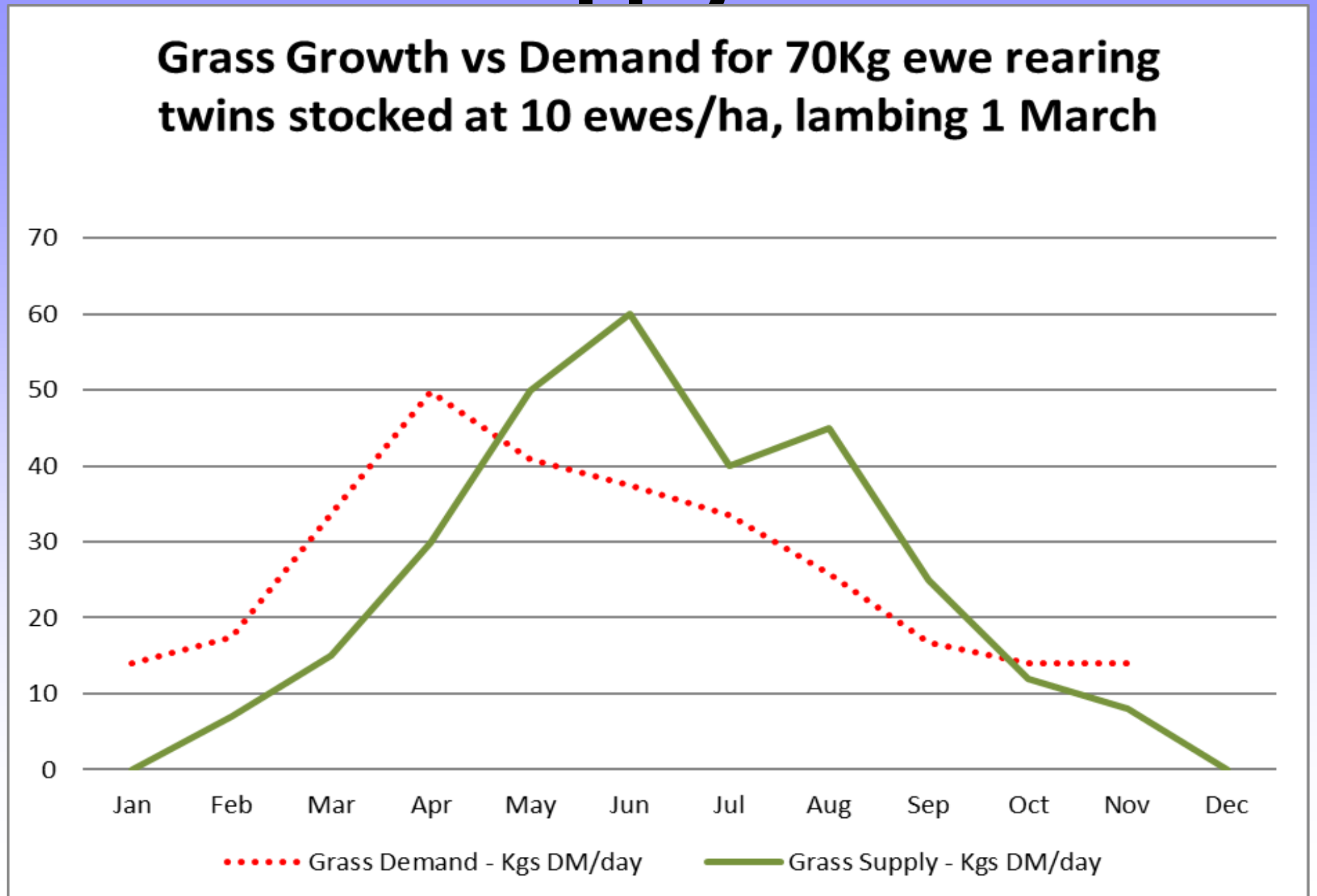
Supply v. Demand



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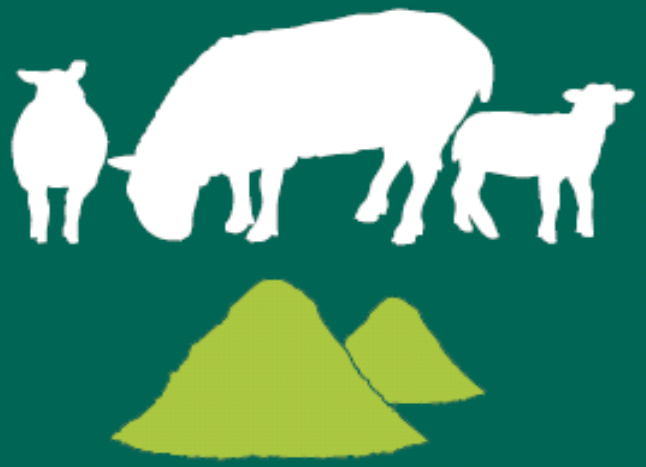
TYPICAL EWE GRAZING REQUIREMENTS

Increase the kilos of meat produced per hectare through better utilisation of grass

Ewe nursing twins requires



16kg/d Fresh weight

Ewe overwintering requires

5.4kg/d Fresh weight

The Opportunity in Grazing

- Grow more grass
- Use more grass
- Increase stocking rate
- Use less N, or use the same N more effectively
- Substitute feed with grazed grass
- Maintain sward quality for longer

Key Rules for Grazing

- Give it a Rest
- Don’t Graze Regrowth
- Use what you grow

Reproduction - Sheep	P	Average	Top 25%	Bottom 25%
Total Capital stock Kgs LWT/ha (C&S)	563	**588**		
Total Kgs LWT produced Kg/ha (C&S)	619	**478**		
Total Kgs LWT produced/KgDM grown per ha (C&S)		**0.05**		
Farm Type	Upland			
Average Ewe Weight (kgs)	75	**68**	**65**	**70**
Average Hogg weight (Kgs)	45	42	41	45
Average Birth Date	11-Apr	**13-Apr**		
Scanning %	175%	**175%**	**183%**	**166%**
Scanning % Hoggs	124%	108%	122%	88%
Proportion scanned lambs from hoggs (%)	20%	14%		
Empty %	4%	**4%**	**3%**	**5%**
Weaning % Overall	154%	**145%**	**154%**	**127%**
Hoggs		74%	89%	58%
Lamb Survival Scan -> wean (%)	94%	**86%**	**89%**	**83%**
Average Weaning Age (days)	100	**110**	**100**	**126**
Average DLWG to wean (g/day)	290	**263**	**290**	**248**
Ewe Efficiency (%)	69%	**63%**	**69%**	**58%**
Kgs Lambs weaned/ha	381	**346**	**400**	**283**
Kgs product sold/ha (sheep)	555	**564**	**685**	**411**

Costs per LWT Kg produced	C	Average	Upper 25%	Lower 25%
Purchased Feed	0.18	0.10	0.03	0.18
Purchased Fertiliser (including lime)	0.11	0.10	0.08	0.14
Purchased Forage	0.00	0.00	0.00	0.01
Purchased Minerals	0.00	0.02	0.00	0.02
Vet & Med	0.21	0.13	0.08	0.20
Seed & Sprays	0.03	0.03	0.02	0.04
Contractors charges (excluding silage)	0.02	0.08	0.03	0.13
Contractors charges (silage)	0.01	0.02	0.00	0.04
Grazing rents	0.02	0.06	0.00	0.14
Miscellaneous Variable Costs	0.07	0.14	0.07	0.17
Purchased Livestock (adjusted)	0.03	0.26	0.03	0.25
Total Variable Costs	**0.68**	**0.95**	**0.63**	**1.01**
Power & Machinery Costs	0.31	0.29	0.16	0.41
Labour	0.00	0.18	0.00	0.23
Administration/Miscellaneous fixed costs	0.12	0.19	0.10	0.20
Property Costs	0.23	0.14	0.04	0.24
Rent	0.00	0.00	0.00	0.00
Finance	0.00	0.00	0.00	0.00
Total Fixed costs	**0.66**	**0.80**	**0.45**	**0.93**
Total Costs	**1.34**	**1.74**	**1.20**	**2.34**

Current Group Performance

	Average	Top 25%	Bottom 25%	Range
Average DLWG to wean (g/day) - North	260	304	235	191 - 331
Average DLWG to wean (g/day) - South	263	290	248	202 - 318
Average Weaning Age (days) - North	100	83	108	81 - 128
Average Weaning Age (days) - South	106	99	119	65 - 141

Potential Solutions to Improve Lamb Growth Rate

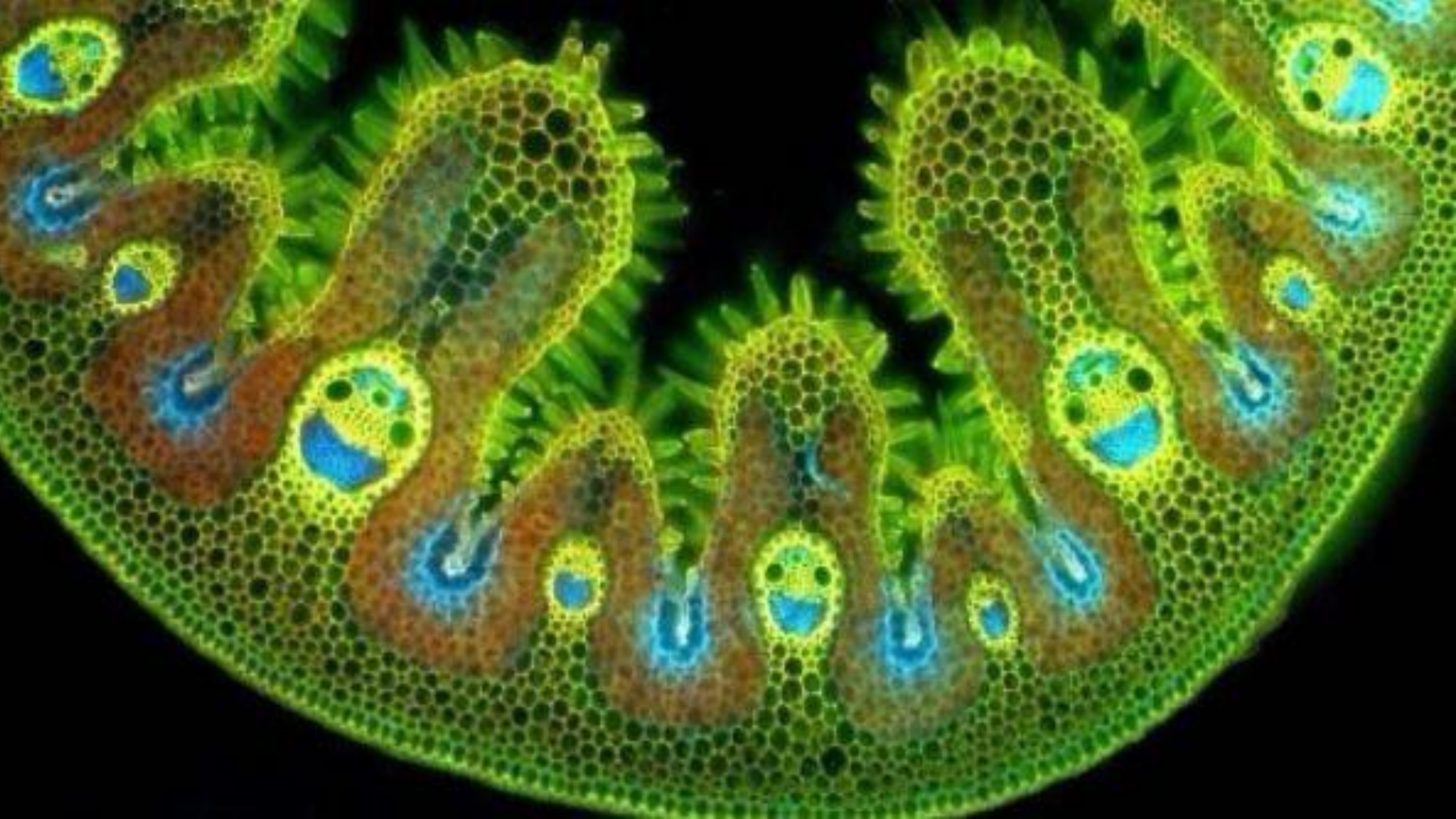
- Supply high quality pasture/Wean early onto high quality forage crops
- Offer clean grazing
- Weigh & record weights
- Address mineral deficiencies
- Get pre-lambing ewe nutrition correct to drive 8-week growth
- Supplement with a small amount of feed
- Address internal parasites – treat, undertake regular FEC

Setting a Target

- 300g/day pre-weaning
- 200g/day post-weaning

Knowledge Gaps

- Understanding the pros and cons of weaning early



Thank you

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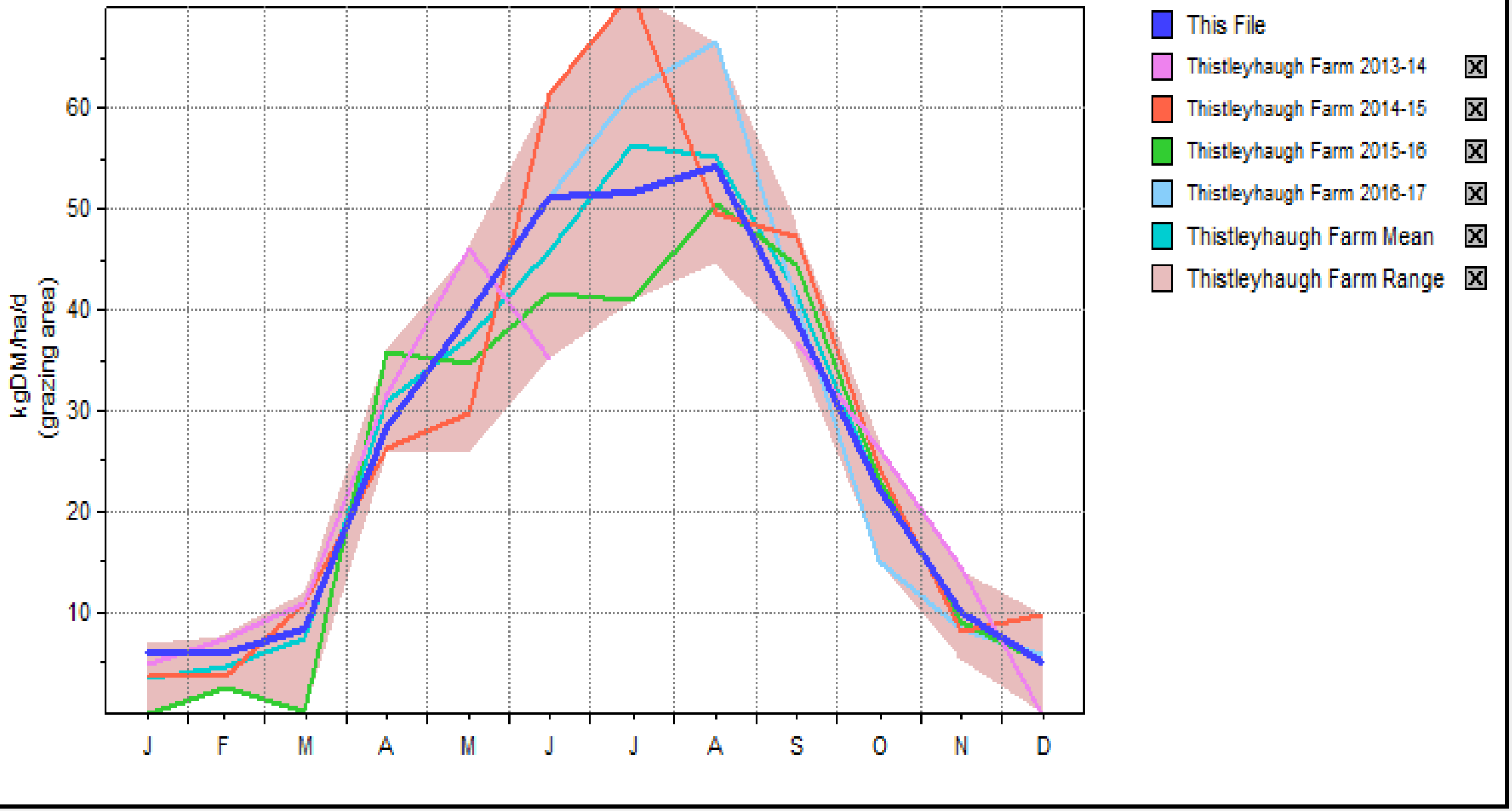
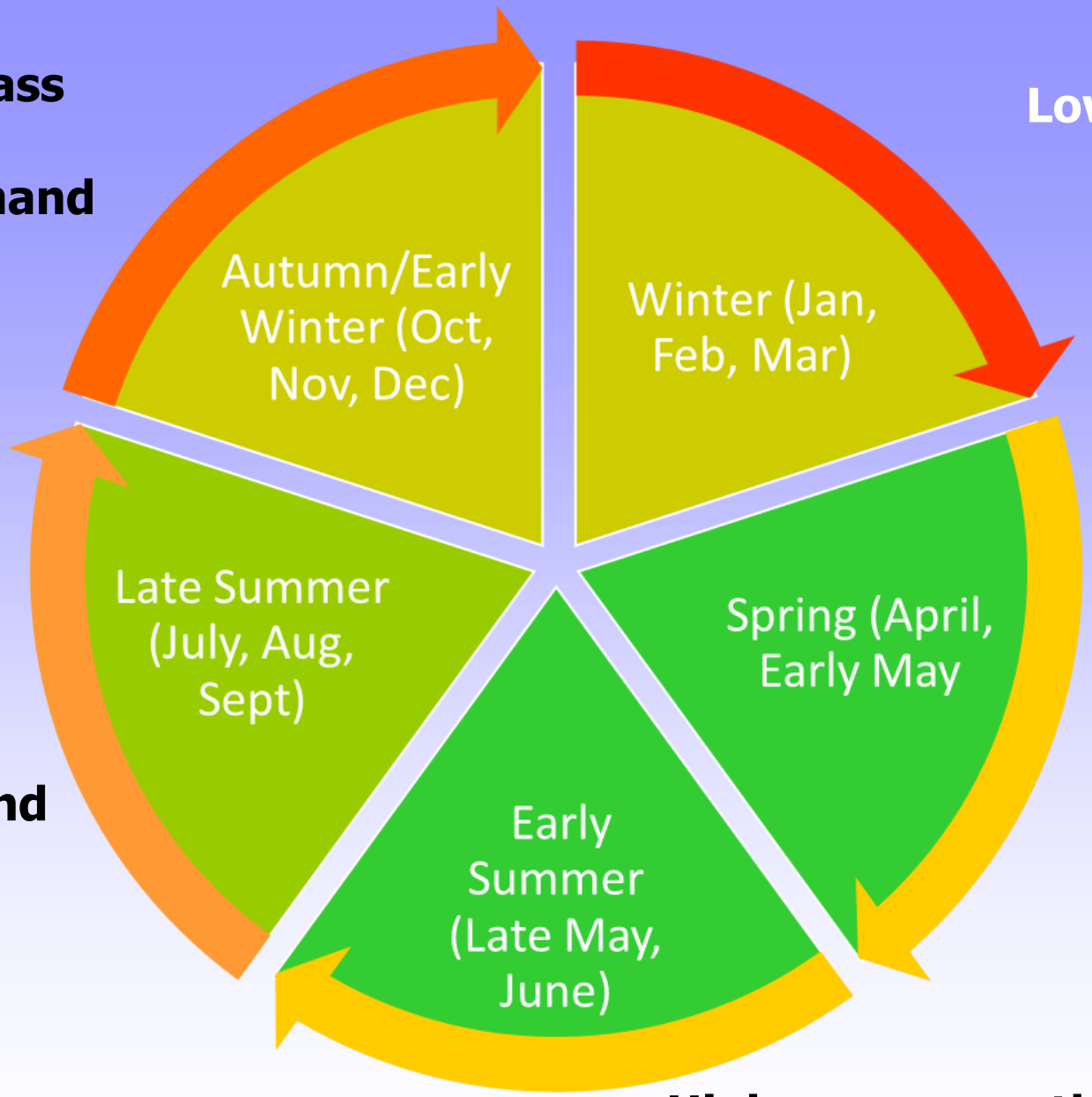

kgDM/ha/d
(grazing area)
60
50
40
30
20
10
J
F
M
A
M
J
J
A
S
O
N
D
This File
Thistleyhaugh Farm 2013-14
Thistleyhaugh Farm 2014-15
Thistleyhaugh Farm 2015-16
Thistleyhaugh Farm 2016-17
Thistleyhaugh Farm Mean
Thistleyhaugh Farm Range

Declining grass growth
Supply > Demand



Low or no grass growth.
Demand > Supply

Grass growth increasing along with demand.

Supply = Demand

High grass growth rate.
Supply > Demand

Feed Costs

Proportion of Diet	Proportion of Costs
73% is grazed grass	45% is grazed grass
26% is grass silage	50% is grass silage
1% is concentrates	5% is concentrates

Supply & Demand

- Need to understand how much grass you have
- Need to understand how much grass you need

Individual performance may drop. But overall productivity will increase.

Increasing stocking rate by one cow/ha results in 8% decrease in daily milk yield per cow, but a 20% increase in milk output per hectare

Making the Most of Grass

Grow lots of it, for as long as possible
Use lots of it
Know how much you need - demand
Know how much you have - supply
Keep it high quality
Farm efficient 'sized' stock

Rotation Grazing Not New

'to obtain this constant supply of fresh grass….a farmer should have it divided into fifteen or twenty divisions….and that instead of allowing beasts to roam indiscriminately through the whole area….turn them all at once into one division; which being quite fresh, and of sufficient length for a full bite, would please their palate so much as to induce them to eat it greedily….so that they might this be carried round in a constant rotation….'

James Anderson, born Edinburgh 1739