




Calving and Lambing Nutrition and Management

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Cattle





A Suckler Cow

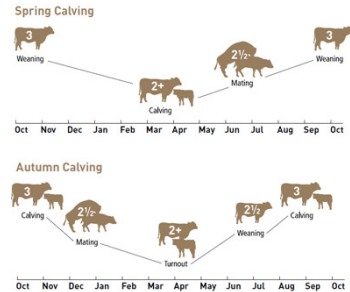
- Aim – to have a calf every 365 days
- Aim to be bulling 50 days after calving, 80 days to achieve 365

	Calves reared per 100 cows/ to the bull		
	Bottom 1/3	Average	Top 1/3
Calves reared per 100 cows and heifers to bull	84	88	92
Extra calves if reach 94% target	10	6	2
Extra calves value if reach 94% target	£6,750	£4,050	£1,350


- Calving problems
- Body Condition
- Poor nutrition
- Underestimating the maintenance requirement for cows
- Underestimating nutritional requirements for first calvers



Body Condition Score




- Monitor
- Act on Findings




Body Condition Score

- 13% of Liveweight - 650kg cow = 84kg
- Energy required 1kg weight gain in a pregnant cow = 35-40MJ ME
- 1MJ = 240 calories



- A spring calving cow, weaned at BC3+, 5 months before calving, can mobilise 0.5kg/day of body reserves over 3 months




Calving to Conception

- Recover from calving
- Produce increasing amounts of milk
- Restart oestrus cycling
- Increase BC if required

BC @ Calving	Calving Interval
1-1.5	418 days
2	382 days
2.5-3	364 days

- Access to best grazing
 - Milk yield peaks at 6-8 weeks
 - rising plane of nutrition for bulling



First Calvers



			650kg cow mature weight		
	Days	% of Mature Weight	Target Weight	Gain	Gain
Birth	-	6	38kg	-	-
	450	-	-	385kg	0.86kg/day
Mating	-	65	423kg	-	-
	285	-	-	130kg	0.46kg/day
After 1st Calving	-	85	553kg	-	-
	365	-	-	65kg	0.18kg/day
After 2 nd Calving	-	95	618kg	-	-

- Separate from main herd
- Best grazing, early wean, TLC



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Feeding the Suckled Calf



- Colostrum ESSENTIAL
- 10% of its BW in litres of colostrum
 - 40kg calf = 4litres
 - immunoglobulin content of above 50 mg/ml
- Four months old 50% diet from milk
- 6-10 weeks before weaning, bulls 12 weeks
- 200 days, 25% diet from milk



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Nutrition – Silage Quality



Feeding Value

Dry Matter (g/kg)	216
D-value (h)	67.2
ME (MJ/kg DM)	12.8
Protein (g/kg DM)	86
SIP (gDM/kg DM ^{0.75} /yr)	89
NDF (g/kg DM)	588
Sugar (g/kg DM)	32
Oil (g/kg DM)	32
Ash (g/kg DM)	51
TFA (g/kg DM)	58.7
PAU (megaj/kg DM)	964

Fermentation quality

pH (NIR) ^a	4.3																				
Lactic Acid (g/kg DM)	12.5																				
VFA (g/kg DM)	44.2																				
 <p>The figure consists of two bar charts. The top chart compares pH, VFA, and Ash levels across three groups: Lactic (blue), PHL (orange), and Sugar (green). The y-axis for this chart has four levels: Good, Average, Poor, and V. Poor. The bottom chart compares the same three groups for Lactic Acid, PHL, and Sugar. The y-axis for this chart has four levels: Low, Average, High, and V. High. In both charts, the PHL group shows the highest values, followed by the Sugar group, and then the Lactic group.</p> <table border="1"><thead><tr><th>Parameter</th><th>Lactic</th><th>PHL</th><th>Sugar</th></tr></thead><tbody><tr><td>pH</td><td>~4.0</td><td>~4.3</td><td>~4.1</td></tr><tr><td>VFA</td><td>~40.0</td><td>~44.2</td><td>~42.0</td></tr><tr><td>Ash</td><td>~10.0</td><td>~15.0</td><td>~12.0</td></tr><tr><td>Lactic Acid</td><td>~10.0</td><td>~12.5</td><td>~11.0</td></tr></tbody></table>		Parameter	Lactic	PHL	Sugar	pH	~4.0	~4.3	~4.1	VFA	~40.0	~44.2	~42.0	Ash	~10.0	~15.0	~12.0	Lactic Acid	~10.0	~12.5	~11.0
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Assess forages by hand



- Dry matter – squeeze test
- Digestibility –
- pH – litmus paper/pH meter
- Fermentation – sniff test!

On-form testing

Dry Matter (DM)

The dry matter of conserved forages of less than 30% can be estimated by squeezing a handful of silage

Amount of squeezing	DM %
Juice easily expressed by hand	<20
Juice expressed with some difficulty	20-25
Little or no juice expressed but hands moist	>25
Ball shape	DM %
Ball retains its shape and some free juice expressed	<25
Ball retains its shape but no free juice is expressed	25-30
Ball slowly falls apart	30-40
Ball rapidly falls apart	>40



Use these methods as a cross check when you receive an analysis



Leaf and stem content	ME (MJ/kg DM)	CP (%)
Very leafy – no stem visible	12	18
Leafy – some stem present	11	16
Leafy with some flowering stems	10	14
Moderately leafy with large numbers of flowering stems	9	12
Stemmy – grasses at flowering stage	8	10
Stemmy – grasses at post flowering stage	7	8



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North East Silages 2017



	NE Offices (2017)		All SAC (2017)
	Average	Range	Average
DM%	336	133 – 637	275
D Value %	65	50 – 77	65.5
ME MJ/kgDM	10.4	8 – 12.3	10.5
CP%	109	50 – 175	107
pH	4.4	3.8 – 4.8	4.2



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Nutritional Requirements



700kg cow	Energy Requirement
20 weeks pre calving	75MJ
8 weeks pre calving	90MJ
2 weeks pre calving	113MJ
Lactation	135MJ
	Protein Requirement
Dry Suckler Cow	9%
Lactating Cow	11%

10ME silage x 10kg
DM intake = 100MJ

25%DM = 40kg fresh
35% DM = 29kg fresh
45% DM = 22kg fresh



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Real Example



- Silage 2015
 - DM 252, ME 11.5MJ, CP 11.2, D 71
- Silage 2016
 - DM 263, ME 10.2MJ, CP 12.5, D 64

650kg cow	Pre Calving (8 weeks)	Post Calving (2015)	Post Calving (2016)
Silage	22.4kg	30.5kg	33kg
Straw	3kg	3kg	-
Barley	-	1.5kg	2.0kg
WDG	0.25kg	0.5kg	1.0kg
Energy	84MJ	127MJ	126MJ
Protein	9%	11%	12%



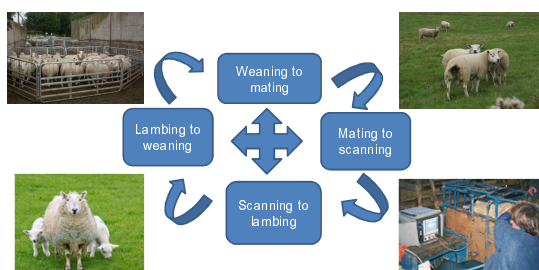
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Sheep



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The Production Cycle



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Objective is to optimise the contribution from forage



- Silage/hay analysis essential to assess potential
- Aim to optimise forage intake
- Complement forage with the minimal amount of supplement
- Use the correct type and quality of supplement

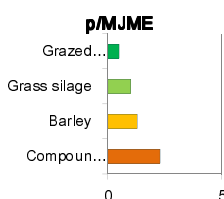


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Relative Feed Costs



- Grazed grass – 6p/kg DM (0.52p/MJ)
- Good grass silage – 12p/kg DM (1.14p/MJ)
- Barley – 13.5p/kg DM (1.05 p/MJ)
- Compound feed – 27p/kg DM (2.16p/MJ)
- Make best use of cheapest feeds – forage
 - Improve grassland utilisation through the year
- Feed the rumen for optimum fermentation



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'Concentrates' straights and compound supplements



The supplement must have a high energy content and have the right quantity and balance of protein.

Information you need:

- Dry matter %
- ME
- FME
- RDP
- DUP




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How can you assess the quality of compounds?

Oil – 4-5%
Ash – <10%
Fibre – <10%
Crude protein – as required (%)
List of ingredients
shown in descending order of inclusion rate.



Logos: European Union, SAC, AHDB, Scottish Government

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Two 18% CP compounds

Product 1

Oil 5%; Fibre 12%; Ash 11%, Protein 18%

Ingredients List (over 1% inclusion rate):

Wheatfeed, Wheat, Rapeseed meal, Palm Kernel, Sunflower, Oatfeed, Hipro soya, Limestone

Product 2

Oil 5%; Fibre 9%; Ash 7%; Protein 18%

Ingredients List (over 1% inclusion rate):

Barley, Wheat Distillers, Sugar beet, Rapeseed meal, Wheatfeed, Hipro soya, Wheat, Whole maize

Logos: European Union, SAC, AHDB, Scottish Government

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Price differential – how much more is product 2 worth?

Product 1

- £195/tonne
- Cost /MJME based on 11.5 MJME/kg DM = 1.93p

Would need to be £185/tonne for parity and the issue of larger quantities and acidosis and lower protein quality from ingredients

Product 2

- £210/tonne
- Cost /MJME based on 13 MJME/kg DM = 1.84p

So worth at least £25/tonne more

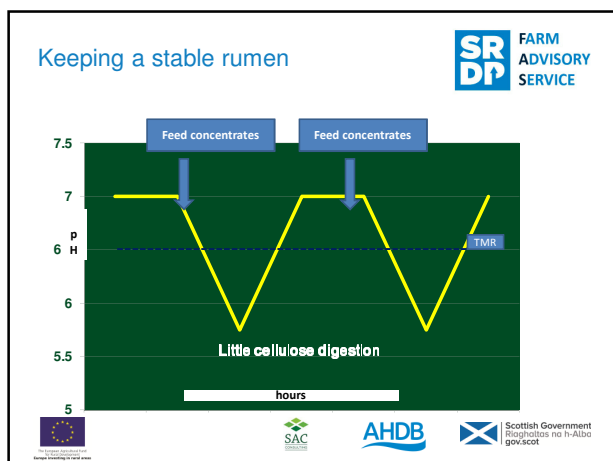
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Feed the rumen to feed the ewe

- The rumen is the most important digestive organ in sheep
- Needs constant and balanced nutrient supply to make the best of the diet on offer
- Supply of fermentable energy; forage, digestible fibre, and if necessary – concentrates
- Supply of rumen degradable protein

Logos: European Union, SAC, AHDB, Scottish Government



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Silage for Sheep

	Benchmark
Dry matter (%)	>25
D value (%)	>65
ME (MJ/kg DM)	>10.5
Crude protein (%)	>12
pH	>4.0
Ammonia (as % of total N)	<10

Logos: European Union, SAC, AHDB, Scottish Government

Factors affecting forage dry matter intake



- Dry matter
- pH
- Ammonia
- Digestibility
- Chop length
- Presentation – trough space
- Competition



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Working out Diets



- How much can she eat?
- Predicting ewe dry matter intake

	% of bodyweight	For 70kg ewe (kg/day)
Dry, post weaning, early/mid pregnancy	1.5	1.05
Late pregnancy	2 – 2.5	1.45 – 1.75
Early lactation	3.5+	2.45



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Energy requirements



Ewe weight	Weeks before lambing			
	7	5	3	1
50kg	Single	8	9	10
	Twin	9	10	12
60kg	Single	9	10	11
	Twins	10	12	14
70kg	Single	10	11	13
	Twins	11	13	15



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Calculate the diet for a 70kg ewe carrying twins



Good silage – 10.5 ME – appetite 1.6% of bodyweight
1.6% of 70kg = 1.12kg DM
1.12 x 10.5 = 11.8 MJ

At 7 weeks pre-lambing ewe needs 11 MJ so no need for supplement

At 5 weeks pre-lambing ewe needs 13MJ
Ewe needs 1.2/10.75 = 0.11kg

12.5 MJ/kgDM
compound is
10.75MJ/kg as fed

At 1 week pre lambing – appetite 1.4% of bodyweight – 18MJ
Ewe needs 18MJ so requires 7.7MJ from compound
7.7/10.75 = 0.72kg compound



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Difference between two diets



	Silage ME	Weeks before lambing			
		kg/ewe			
		7	5	1	Total
Compound feed	10.5	0	0.11	0.72	13
	9.5	0.16	0.34	0.93	23

1MJ increase in silage ME saves 10kg of compound feed or over £2 per ewe



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Troubleshooting



- The aim is to ensure diets are presented in a way that ensures optimum and even intakes across a group
- Forage intakes MUST be monitored against predictions



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Forages



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Common problems



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Quality forage working well



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Take time to observe forage intake



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Concentrates

- Access for the whole group at troughs is essential. This can be difficult to achieve
- Shortage of space leads to a variety of issues such as loss of condition in those pushed out, acidosis in the bullies and physical traumas



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Floor feeding is a possible solution

- Alleviates limitations of feed space
- Reduces the speed at which concentrates are consumed
- Evens up intakes across the group
- Reduces physical trauma – sheep are much more settled



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“Self help” options



Organising groups for feeding

The aim is to try and put ewes together with similar feed requirements.

- Body condition
- Little size
- Raddle colour
- Age of ewes



Thank You

