Managing Cows in Early Lactatoin

Glanbia Early Lactation Management

- Feed a high NE diet.
- Monitor BCS – max 0.5 loss in 2 months.
- Monitor MILK PROTEIN %. Early warning system!
- Correct ration
- Build up concentrates slowly
- Feed the rumen bugs to produce PDI.
- Balance total diet carbohydrates.
- Use Yeast to stabilise rumen.
- Meet PDI, minerals & vitamin needs

Guidelines - spring calving

- **Lactation yield =** Peak Yield x 200.(peak=7day average)
  6 gals/day x 200 = 1200 gals for the lactation (300day)

- **Yield decline:** Max 2.5% yield drop per week.
  Lower drop from lower peaks and heifers.

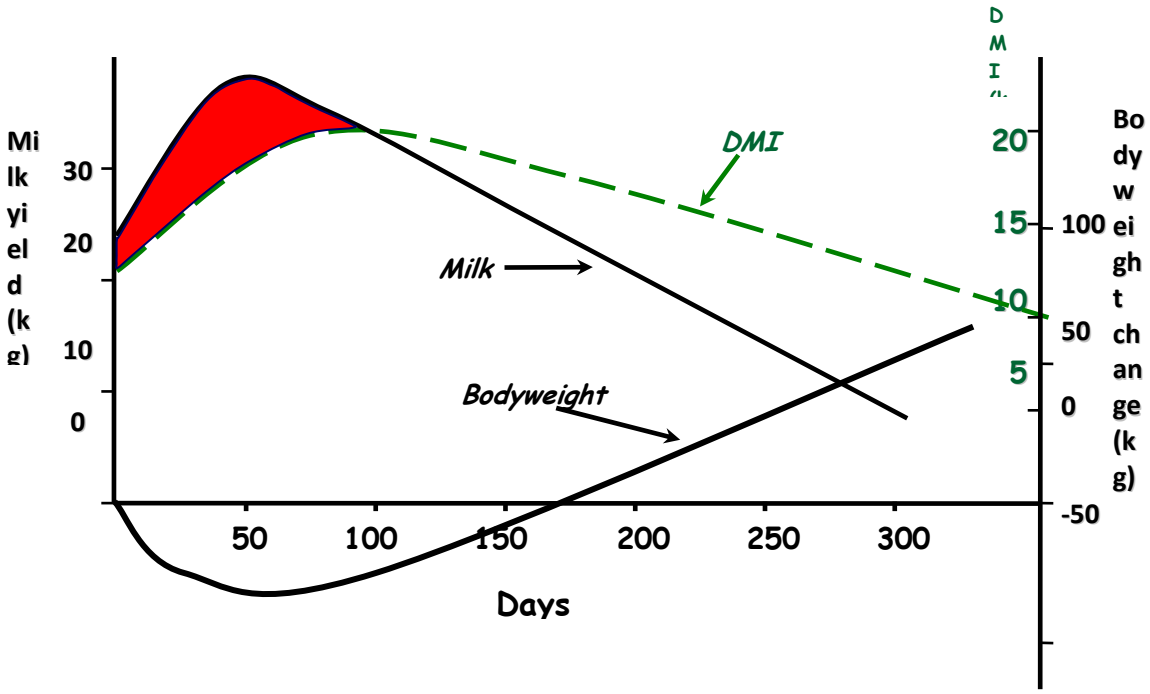
- **Milk Protein:** 3.05% min point, +0.05%/month min.

- **Milk Fat :Protein ratio:** max 1.5:1

- **Milk Lactose:** 4.5% min point.
- **BCS:** **3.0** at drying off and calving down (Holstein).
  0.5 max loss in early lactation.
  2.75 min at breeding.

- **Feed a high NE diet.**

Energy is important



Cow Requirements:

	Energy	Protein
600kg Cow IC=17LFU	UFL	PDI g
• Maintenance/day-housed	5	400
-grazing	6	400
• Milk 3.6% Fat: 1 gal	2	1.5 x Milk Protein
1 kg	0.44	1.5x33g=50g
• Condition: +/-1 kg	4.5/-3.5	
+/-1 BCS	200/-150	
• Pregnancy: 45kg Calf	200	

FEED GUIDE - kg/day with Grass Silage

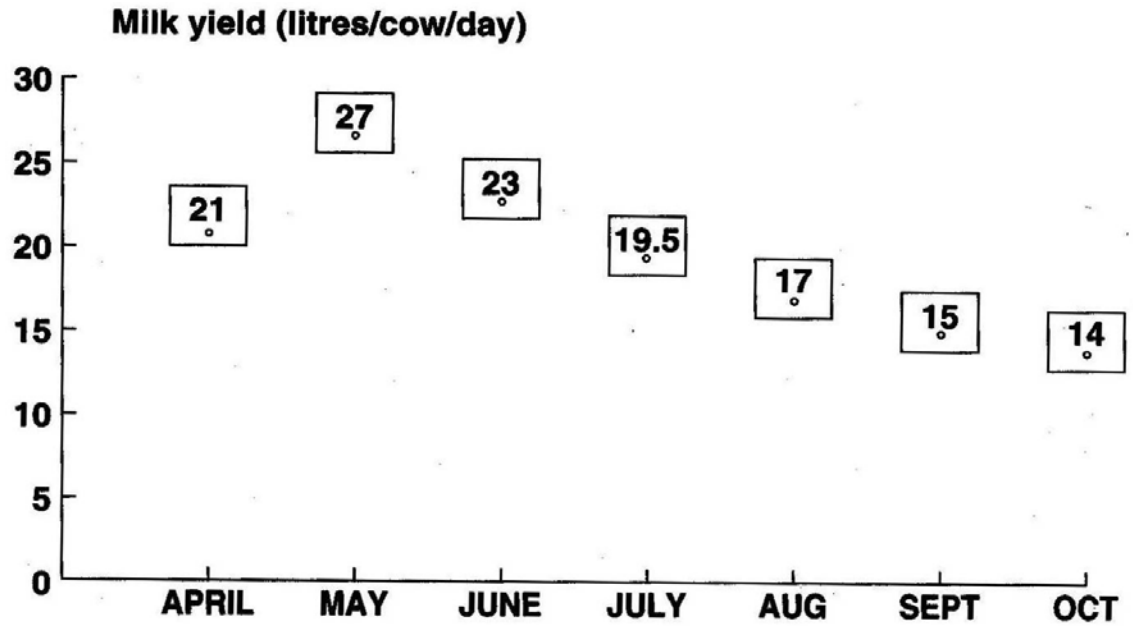
	Y	I	E	L	D
Silage	**23 Litres**	**25 Litres**	**28 Litres**	**33 Litres**	**37 Litres**
***Q**	**5 gals**	**5.5 gals**	**6 gals**	**7 gals**	**8 gals**
60 DMD	9.0kg **Drive**	10.0kg **Advance**	11.0kg **Progress**		
65 DMD	7.5kg **Enhance**	8.5kg **Drive**	9.5kg **Advance**	11.0kg **Progress**	
70 DMD	6.0kg **Optimise**	7.0kg **Enhance**	**8.0kg Drive**	9.5kg **Advance**	11.0kg **Progress**
75 DMD	5.0kg **Boost**	6.0kg **Optimise**	7.0kg **Enhance**	8.0kg **Drive**	10.0kg **Advance**

*Silage Q: Wet (<20%DM) = +1kg/day. Poor preservation = +1kg/day.
Body Condition: Feed rates assume 0.5kg/day bodyweight loss.
Underfeeding reduces Milk Protein%, Body Condition, Milk Yield & Fertility.

Dairy cow turnout problems

- Variable milk yields
- Low milk protein %
- Low milk fat %
- Fertility
- Pasture scorch/scouring
- Grass tetany

Yield potential on grass alone under ideal conditions



Grass Intake

- Animals will utilise approx 95% of grass allocated to them.
- For an intake of 19kgDM, an allocation of 20kgDM is required.

e.g Paddock size 1.5 acre	=	0.607 ha
No. Dairy Cows	=	45
Grass cover	=	1500
Total Grass available	=	910kgDM
Grass per cow	=	20kgDM
Grass intake @ 95%	=	19kgDM

- To achieve 95% utilisation optimum grazing conditions are required.
- Grass DM
  @ 20% DM for 18kgDMI = 90kg fresh grass
  @ 18% DM for 18kgDMI = 100kg fresh grass
  @ 12% DM for 18kgDMI = 150kg fresh grass

- In wet condition its difficult for a dairy cow to meets its DMI requirements from fresh grass alone. In theses conditions to improve DMI a dry feed (good quality silage or concentrates) will need to be introduced.

Milk Protein

Value
Every 0.1% increase = 0.41c/l

Factors

1. **Breed**
   Between Breeds

	Holstein Friesian	Montbeliarde	Normande	Jersey
Fat (%)	3.74	3.91	4.41	6.02
Protein (%)	3.26	3.43	3.57	4.07

   Within Breed
   Select bulls which are positive for protein production

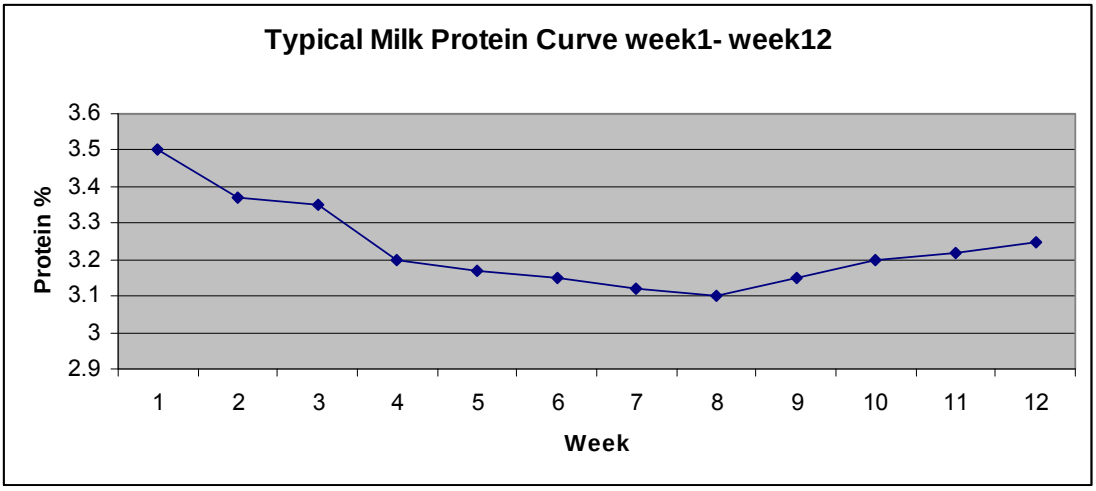
2. **BSC**
   BCS at Drying Off→ BSC at Calving → DMI intake precalving→ DMI intake Post Calving→ Degree of Negative energy balance suffered→ Milk Protein → BSC at mating

3. **Lactation No.**
   0.1% drop from heifers to 5th Lactation

4. **Milk Yield**
   Dilution effect

5. **SCC**
   SCC of over 250,000 have a negative effect on milk protein.
   Target SCC below 200,000

6. Stage of lactation



7. Calving Pattern

The more compact your calving pattern the more severe your trough will be. If you calve 60% of your herd in the first month then 60% of your cows will be in the downward phase at the same time

8. Nutrition

Shortage of energy and protein (PDI) will severely affect milk protein
Shortages of energy are due to feeding low UFL feeds or feeding insufficient levels of high UFL feeds

Energy requirement
UFL /day = 6 (maintenance) + 0.44/L, i.e. 30 litres = 6 + 0.44*30= 19 UFL

72 DMD grass silage has a UFL of 0.81
85 DMD spring grass has a UFL of 1
Good concentrates have a UFL of 1.11
i.e Grass silage is on average 15-20% lower in energy than grazed grass

Energy Density required= 19UFL/20DMI = 0.95UFL/kgDM

Protein requirement
PDI requirements (g/day) = (100 + 0.5 x BW)+ (1.5 X milk protein yield), approx 400 + 1.5x33g/L

For a dairy cow to utilise the soluble protein in her diet an adequate supply of non fibre carbohydrates (NFC, (starch, sugar)) are necessary.
This is more important on silage diets.

9. Concentrate Spec

Concentrates range in energy from 1 – 1.13 UFL
High level of starch will have a positive effect on milk protein, especially by pass starch from Maize Meal
As always concentrates should be introduced gradually after calving.

10. Feeds for protein

Grass Silage: +5 DMD	+0.1%
Wilt/Additive	+0.1
Maize Silage (good) @ 2MS:1GS	+0.1-0.2
Wholecrop Silage	+0.0-0.1
Grass by day	+0.1-0.2
Beet or Molasses	+0.1-0.2
Concentrates +2kg/day	+0.1
Starchy concentrate	+0.15
Novatan in-feed protein protector	+0.1-0.2
Amino Acid balance (high yielders)	+0.0-0.2
Feeding Method TMR v Parlour	+0.0

11. Improving Milk Protein Content at Grass

Table 1. Monthly Targets for milk protein content Feb-March calving herd.

Month	F	M	A	M	J	J	A	S	O	N	D
Milk Protein	3.4	3.18	3.2	3.23	3.26	3.34	3.42	3.6	3.89	3.72	3.38

The table above (Table1.) outlines the average protein content in each month for a herd achieving an annual protein content of 3.40%.

Important Factors

- breeding
- more importantly nutrition during the grazing season.

With a Feb-March calving herd, the protein content should improve each month from March (lowest Month) right through to the end of the grazing season.

The main limiting factor affecting milk protein production on pasture is energy intake. For cows to achieve high energy intake at grass they must be offered enough leafy grass. The amount of grass offered and quality (digestibility) of grass offered should be the main concerns of dairy farmers throughout the grazing season.

Digestibility Variations (OMD)

Spring 84 – 86%

Summer 78-80%

	DMD%
Green leaf	75 - 80%
Green stem	60 - 70%
Mature stem	40 - 50%
Dead material	35 - 45%

Fertility Targets *(Moorepark)*

- Submission rate 60-80%
- Pregnancy to first service 50-65%
- Calving to service days 60-70 days
- Calving to conception days 80-85 days
- Services per conception 1.4-2.0
- Infertile rate 5-10%

Fertility – Management

- Heat detection.
- Tail-painting.
- Visual inspection – 4 x 20mins/day.
- AI or bull?
- Records.
- Vet.

Fertility – Disease

- BVD (Bovine Viral Diarrhoea)
- Leptospirosis
- Metritis
- Mastitis
- Salmonella
- Lameness
- "Cold Cow Syndrome"
- Grass Tetany

Feed to Breed

- Feed to minimise condition loss early on.
- Max loss 0.5 BCS, 0.5kg/day or 30kg in 8 weeks.
- Feed to gain condition from 8 weeks calved.
- Prioritise cow BCS over pasture management.
- Minimise effect of excess Protein in Spring grass – provide Energy supplement +/- N binder.
- Provide full mineral & vitamin requirements.

Effect of body condition loss on conception rate (Moorepark 2001)

BCS @ calving	**BCS loss calving to service**		
	<0.25	**0.25-0.50**	**>0.50**
>3.00	72%	64%	53%
2.75-3.00	64%	55%	44%
<2.75	57%	49%	37%

"Turnout" infertility

Month of Service	Conception Rate %
Dec	60
Jan	60
Feb	60
Mar	40
Apr	20
May	20
Jun	40
Jul	50
Aug	60
Sept	60

Infertility due to high blood urea at pasture

- Excess Protein (25%+) in lush Spring grass.
- Increases rumen AmmoniaN & Blood Urea N (BUN).
- High BUN damages egg long before service.
- High BUN leads to poor uterine conditions.
- Leads to poor conception and early embryonic loss.

Recommendations
- Turn cows out gradually to lush grass.
- Don't feed high protein winter feed at grass.
- Supplement to help absorb rumen Nitrogen & BUN.
- Use Feeds containing Novatan

Blood urea nitrogen (BUN) levels in dairy cows

	umol/L
Normal Limits	4 - 8.3
Indoors	2 - 10
Spring/Summer Grass	4 - 18

Low Butterfat

Balance total diet carbohydrates

- Low milk fat on grass indicates fibre shortage leading to low rumen pH (sub clinical acidosis).
- Long fibre (silage/hay/straw) is important on lush spring grass, particularly regrowth
- Up to 80% of cows grazing grass could be suffering from SARA (sub acute rumen acidosis)" Dr Finbar Mulligan, Veterinary department UCD.

SARA (Sub Acute Rumen Acidosis)

Reasons for SARA at grass:
- high levels Starch, Sugars in the diet
- low levels of structural fibre in the diet
- new grass varieties are selected to be high in NFC (sugars) and protein and low in stem (fibre)
- better grazing techniques mean farmers are grazing lower covers which are higher in NFC, protein with little structural fibre (stem)

SARA can cause:

- lower rumen ph
- lower DMI intake
- low milk butterfat
- can lead to increased incidence of displaced abomasum (growing problem with cows grazing lush grass)

Preventing SARA:

- always ensure a balanced diet
- at grass feed low protein concentrates that are made from hi-energy digestible fibre raw materials

Cal Mag inclusions to supply "2oz/hd/day"

Feed Rate/day		**Cal Mag (50% Mg)**	**"Sweetened" Cal Mag (33% Mg)**
kg/day	***lb/day***	***kg/tonne***	***kg/tonne***
9	**20**	**6.25**	**10**
4.5	**10**	**12.5**	**20**
2.25	**5**	**25**	**37.5**
1.1	**2.5**	**50**	**75**