

Workshop 2: **Meeting Herd Feed Requirements This Winter and Next Spring**



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Meeting herd feed requirements this winter and next spring

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Topics to be covered

- What are the energy requirements of the cow?
- Quality of forage and concentrate ingredients
- Dry matter intakes in early lactation
- Energy density of the diet – at pasture vs housed

Energy requirements of the cow

- Maintenance (see table below)
- Growth – for all animals under 40 months
- Lactation – 0.42-0.46 /kg milk in early lactation
- Gestation – increasing energy requirements from month 7-9 pregnancy
- BCS gain/loss

Table 1. The UFL requirements of the cow based on bodyweight and daily activity

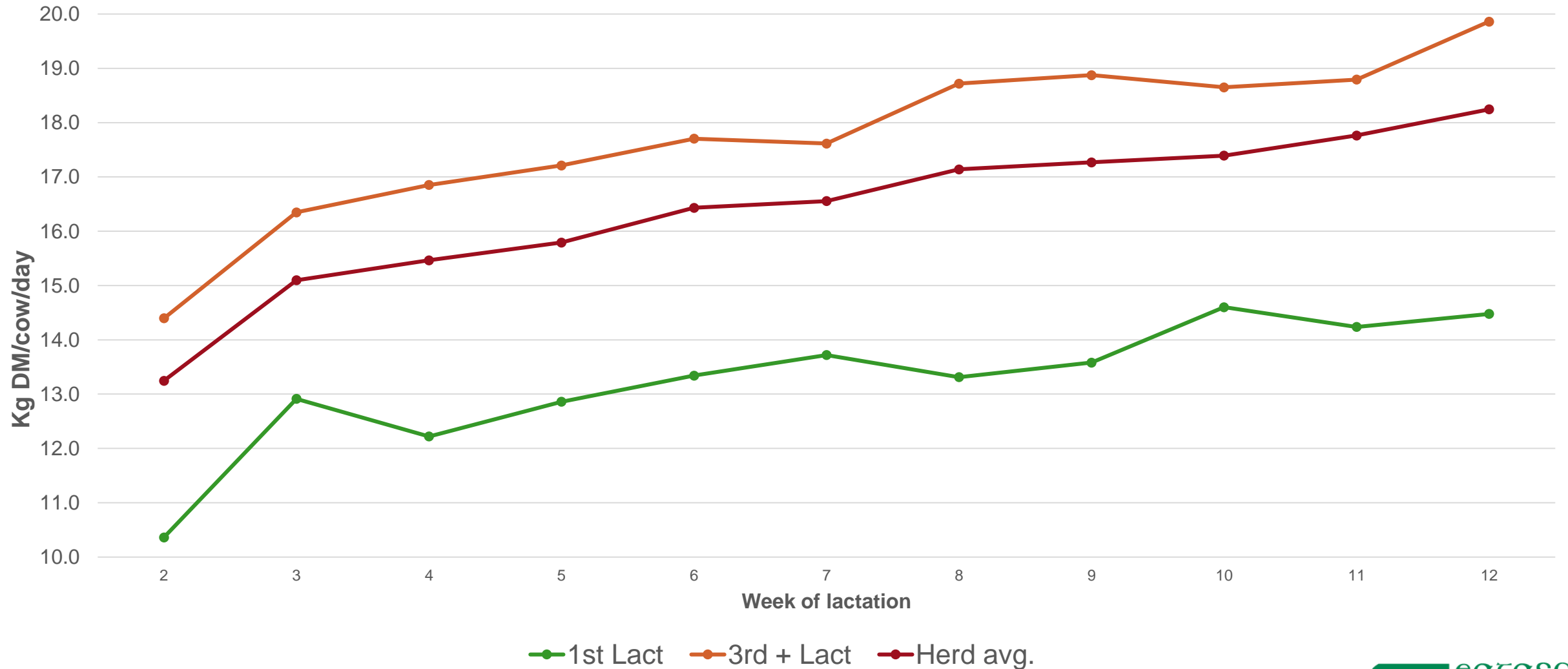
Bodyweight	Housed	Grazing	Long walks/ steep farm
500 kg	5.7	6.3	7.4
550 kg	6.1	6.7	7.9
600 kg	6.5	7.2	8.5
650 kg	6.9	7.6	9.0

Calculating herd requirements

- 600 kg cow producing 25 kg @ 4.2% fat and 3.4 % protein
- Maintenance = 6.5 UFL
- Milk = $0.44/\text{kg} \times 25 \text{ kg} = 11 \text{ UFL}$
- Growth = 1.3 UFL for 1st calver at 24 months
- BCS loss – depends on duration and severity of negative energy balance
- Total requirement = 17.5 UFL/day

Dry matter intake curves

Dry matter intake in early lactation

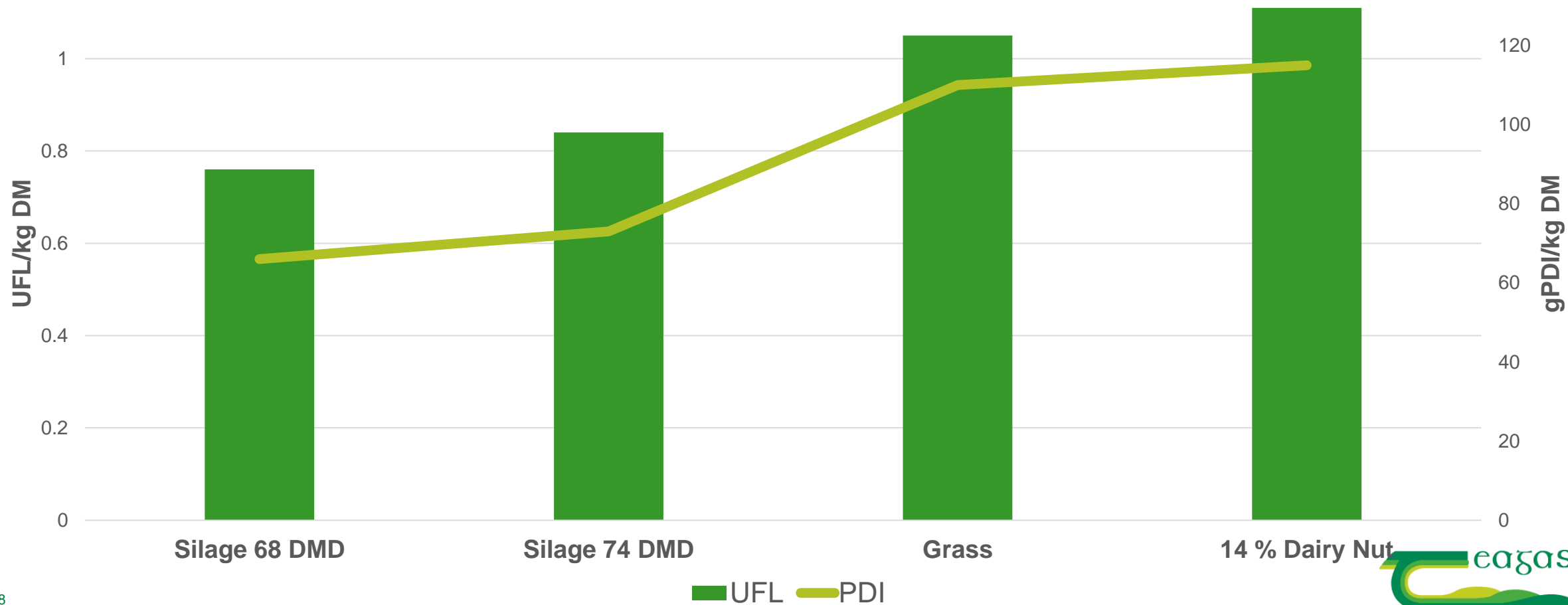


Dry matter intake

- Rapid increase in dry matter intake in first 3 weeks
- Mature cows eating 13 kg DM/day post-calving
- Peaking at 20 kg DMI/cow/day
- Heifers increasing from 9 kg to approx. 14.5 kg DM/cow/day
- Need heifers calving in early and on target for BW to give them every chance to resume positive energy balance in advance of breeding



The UFL and protein availability (PDI) of grass, silage and concentrate



Effect of grass in the diet in spring

	68 DMD + 6 kg meal	68 DMD + 8 kg meal	74 DMD + 6 kg meal	Grass by day	Grass Fulltime
Grass Silage 68 DMD	10.3	9.3		5.5	
Grass Silage 74 DMD			11.0		
Grass				6.5	13
14 % concentrate				4.4	3.5
18 % concentrate	5.2	7.0	5.2		
Total kg DMI	15.5	16.3	16.2	16.4	16.5
UFL/kg DM	0.88	0.91	0.93	0.95	1.02
Kg milk supported by diet*	16	18.4	19	20	23
UFL:PDI ratio (1.0 UFL:100 g)	1:102	1:105	1:102	1:102	1:109

*Body reserve loss may result in higher actual yield

Benefits of increasing level of grass in the diet

- Increased energy density of the diet
- Improved milk yield and milk protein %
- Reduced daily feed costs
- Increased milk sales
- Reduced need for supplemental protein

Dry cow requirements

Table: Dry cow diets of varying forage sources and allowance balanced to 9 UFL

	Diet A - silage	Diet B – low silage	Diet C - hay	Diet D – PKE + low silage	Diet E – straw
66 DMD silage	11	8		7	4.5
Hay			7		
Straw					3
PKE				4	
Hulls					
Barley	0.7	2.1	2.7		2.6
Distillers	0.3	0.9	1.3		1.6
UFL intake	9.0	8.9	8.9	8.9	8.9

Key take home messages

- Energy density of the diet is key
- Grass as the base forage underpins early lactation performance
- Aim to consistently achieve at least one grazing per day
- Test silage and reserve best quality feed for next spring!