



Theoretical levels rarely achieved What level of performance can grazed grass sustain? What is the true response to supplementation? 

**Agri-Food and Biosciences Institute** 



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# Supplementing cows at grass

Supplement type

### **Grass availability** and quality

### Response to Supplementation

Supplement feeding level

### **Substitution Rate**

(kg reduction in grass intake per kg supplement) Concentrates – 0.1 - 0.7 Forages - 0.4 - 1.0+ Stocking rate / Land Requirements

(kg increase in milk output per kg supplement)  $\succ$  Concentrates - 0.5 - 2.0 Forages – 0.3 – 0.6 Relative cost of feeds versus milk price

### Farm Nutrient Balance

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### Cow genetics and stage of lactation

### Milk response

## Maintenance+ value



Concentrate intake (kg/cow/d)

Milk Yield (kg/cow/d)

-Food and

Milk F+P yield (kg/cow/d)

Percentage milk from grass (%)

Margin over feed costs (£/cow/d)



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Theory	85%	70%
1.8	3.2	4.9
19.0	21.8	23.8
1.51	1.70	1.84
88	80	72
4.04	4.50	4.66

## **Concentrate Feed Rate**

Concentrate feed rate (kg per litre of milk produced above Maintenance-Plus values)							
	0.25	0.45	0.65				
Concentrate intake (kg/cow/d)	1.6	3.0	4.5				
Milk yield (kg/cow/d)	17.3	19.8	20.4				
Milk yield response (kg milk/kg conc) 1.8 0.4							
Milk F+P yield (kg/cow/d)	1.27	1.43	1.48				
Margin over feed costs (£/cow/d)	3.65	3.96	3.82				

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- 'High' M+ values unrealistically high
- 'Feed to Yield' system feed rate of 0.45 kg per litre optimal
- Important to monitor Body Condition and be flexible to cope with adverse grazing conditions
- Concentrates should be used as a supplement for high quality grass, not as a substitute

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