

The Effect of Offering Concentrates During the Dry Period on Dairy Cow Performance

31st August 2016

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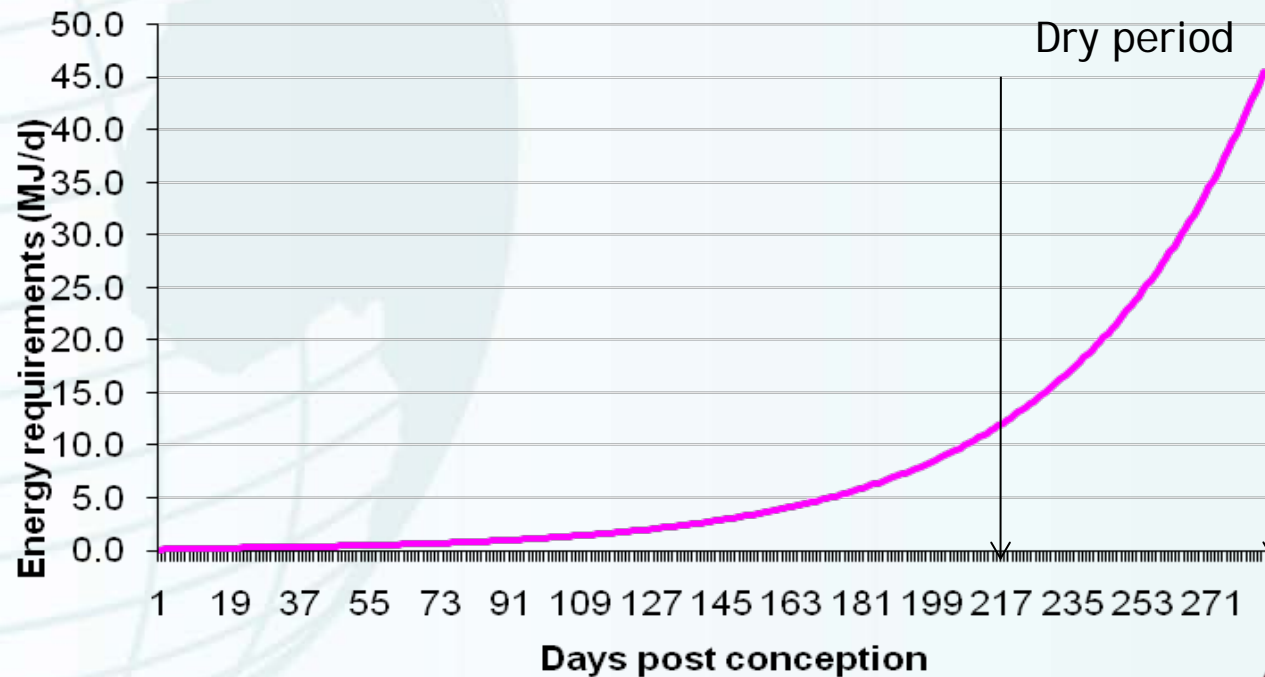
Objective of Successful Dry Cow Management

- ◆ Stress free calving and healthy calf
- ◆ Healthy cow post calving (minimal risk of metabolic problems or infectious disease post calving)
- ◆ Cows with potential to achieve high levels of performance post calving
- ◆ Cows which cycle quickly and go back in-calf easily
- ◆ Improved profitability



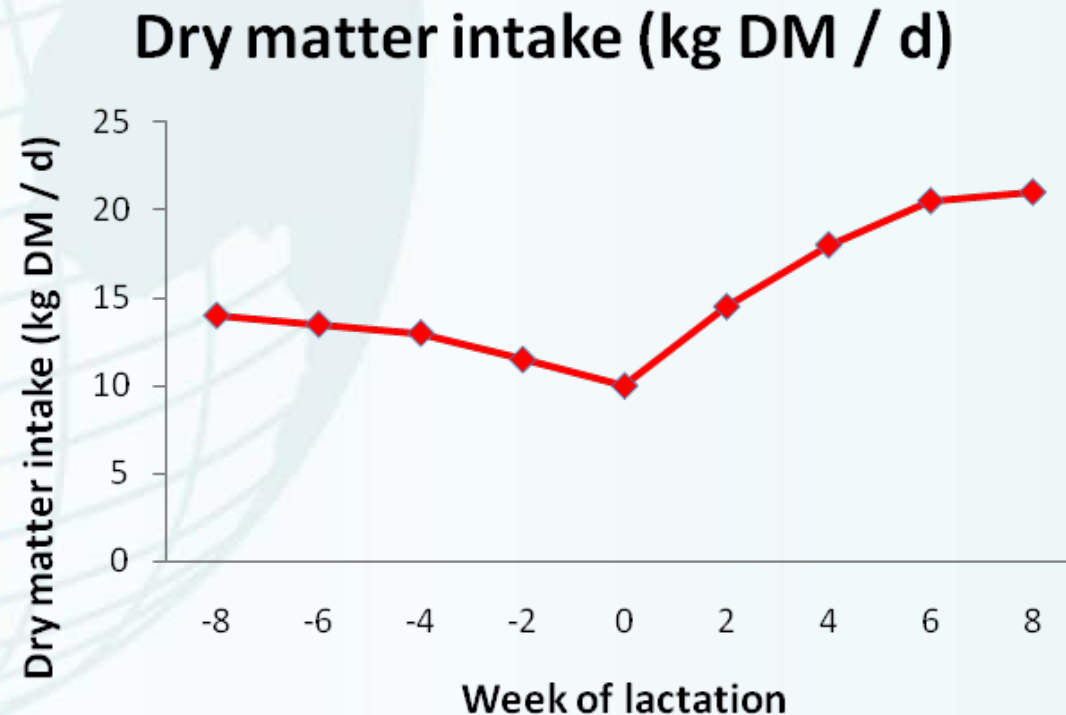
Challenges of Feeding the Dry Cow - Increasing Energy Requirement

- ◆ Average energy requirement during dry period = 107MJ/d
- ◆ Energy requirements for pregnancy



Challenges of Feeding the Dry Cow - Declining Intakes

- ◆ Dry matter intake decreases on approach to calving
 - ◆ 10kg dry matter at calving
 - ◆ Not meeting energy requirements



Some Current Dry Cow Theories

- ◆ Feed high quality diet pre-calving to put condition on cow?
- ◆ Feed concentrates pre-calving to allow the rumen to adapt?
- ◆ Feed a bulky straw based diet to maintain rumen fill?
- ◆ Restrict nutrient intake to encourage the cow to start mobilising body tissue?
- ◆ Modify mineral status of dry cow diet to minimise risk of metabolic disorders post calving?
- ◆ Combination of above



Questions Raised!!

- ◆ Are concentrates necessary in dry period?
 - ◆ Science suggests more negatives than positives
- ◆ If so, does duration of concentrate feeding have an effect?
- ◆ If so, is there an effect of BCS on response to concentrate feeding?



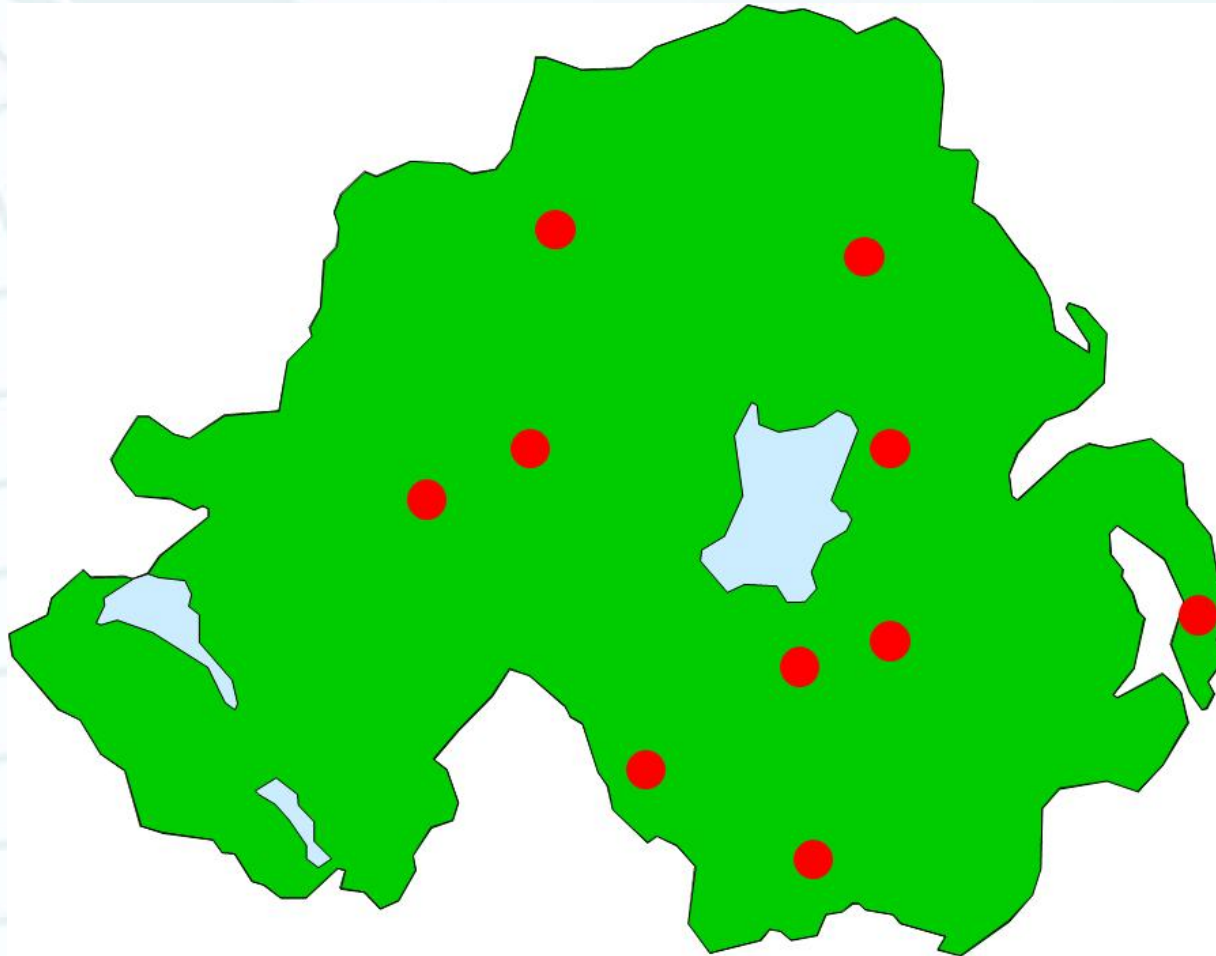
Objectives

- ◆ To compare a number of dry cow management treatments on 10 Northern Ireland dairy farms, and to examine the effect of these treatments on cow fertility, health and milk production performance.



Overview of Study

- ◆ 1200 cows
- ◆ 10 farms
- ◆ 2 years



Concentrate Feeding During the Dry Period

Body condition score at dry-off

Nutritional treatment

Body condition score range 100 - 250 (1068 cows)

Forage + concentrates for entire dry period (FC8 - 160kg)

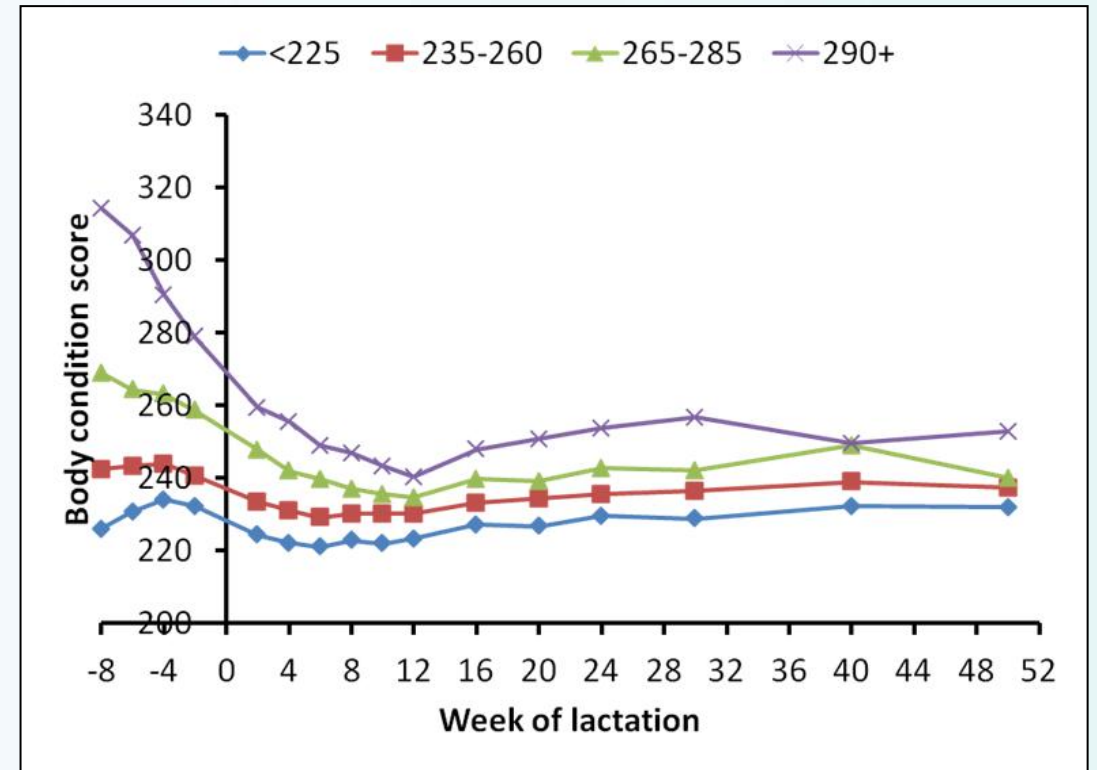
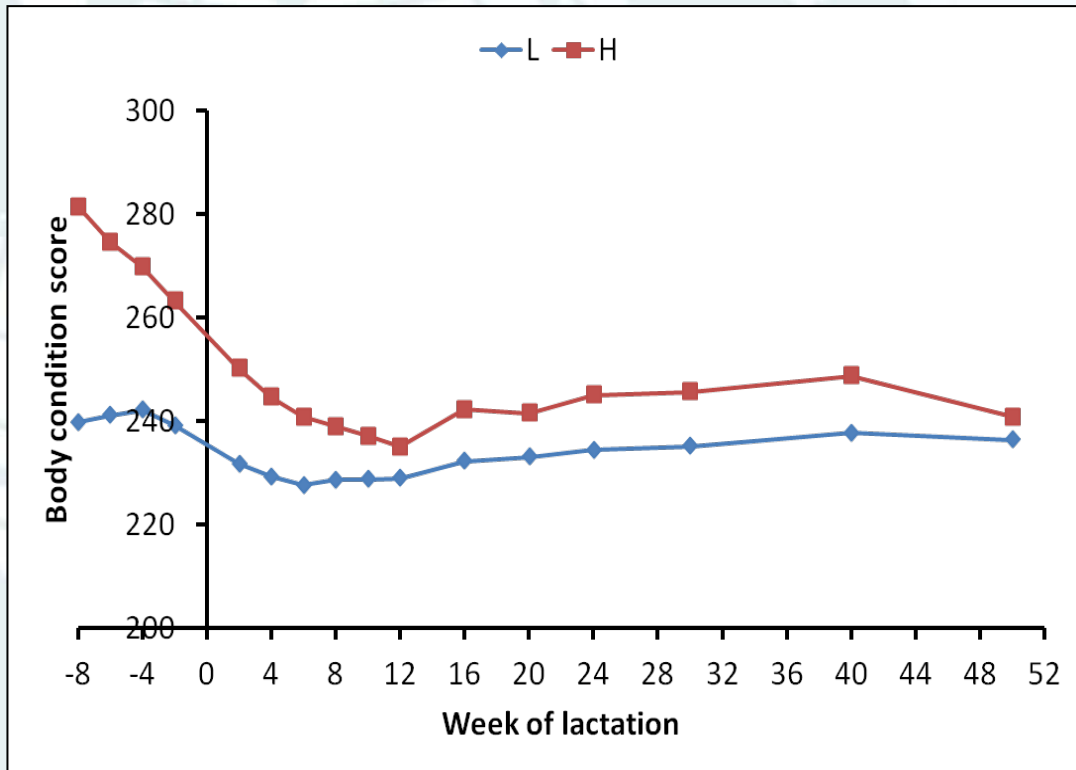
Forage + concentrates for last 3 weeks only (FC3 - 60kg)

Body condition score range 275 - 500 (149 cows)

Forage only for entire dry period (F)

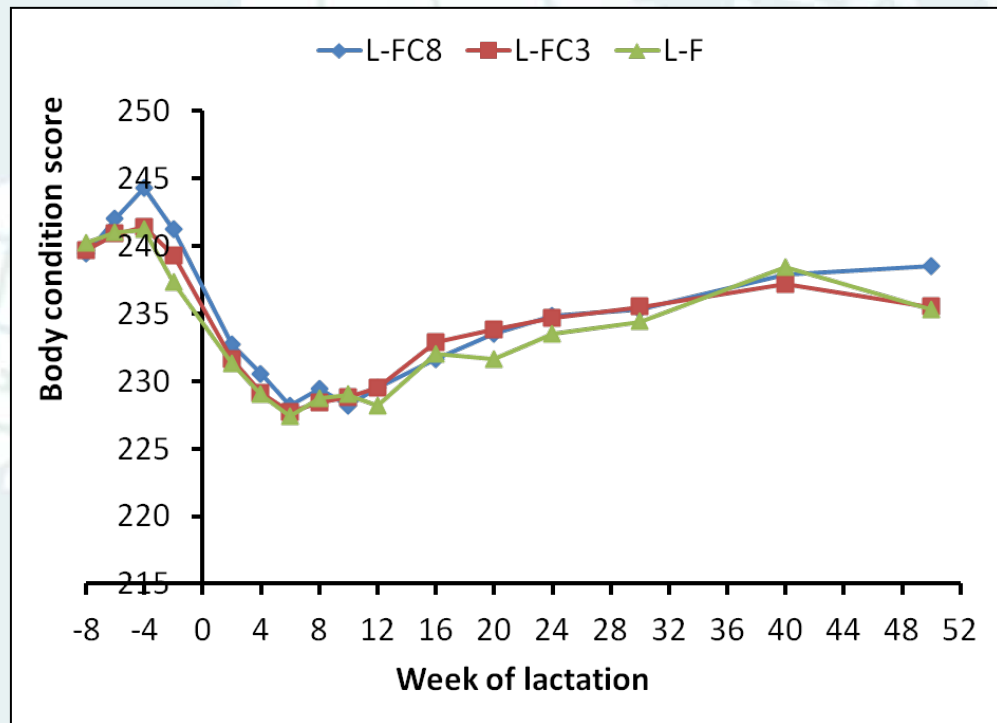


Results - Effect of BCS at Dry-Off on BCS

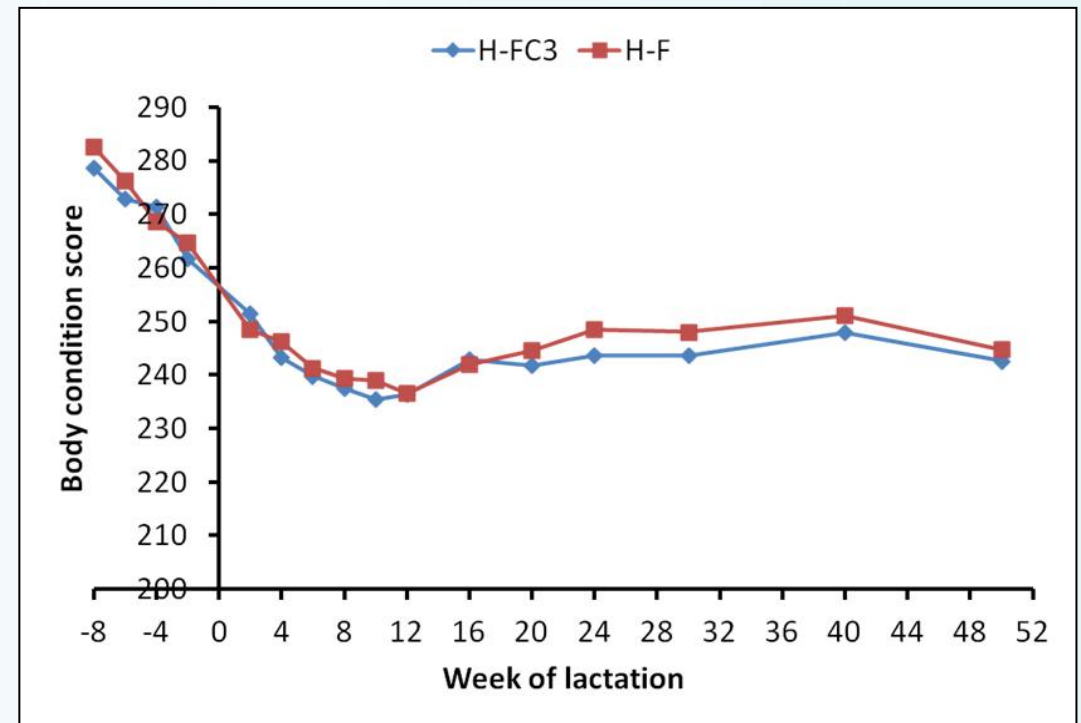


Effect of Nutritional Treatment on BCS

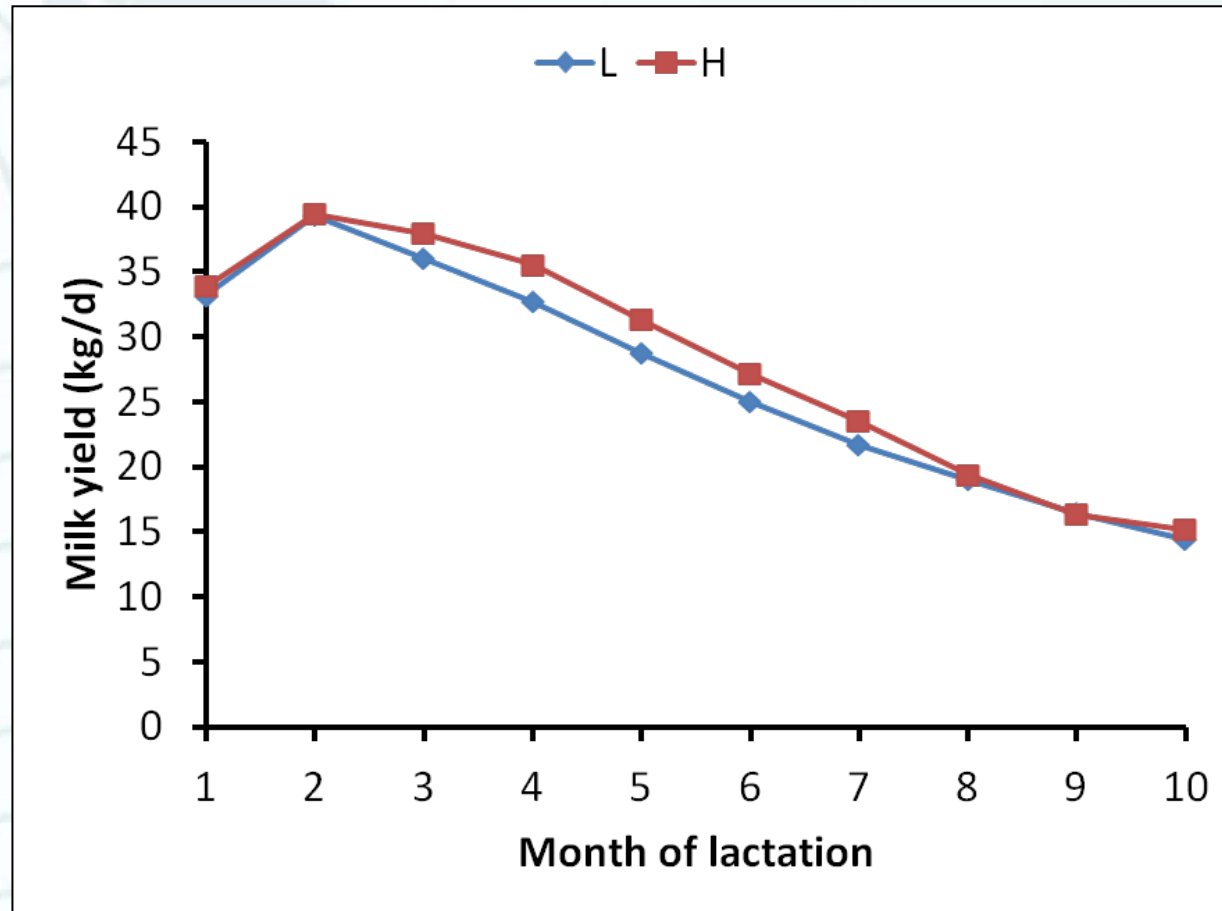
(Low BCS group)



(High BCS group)

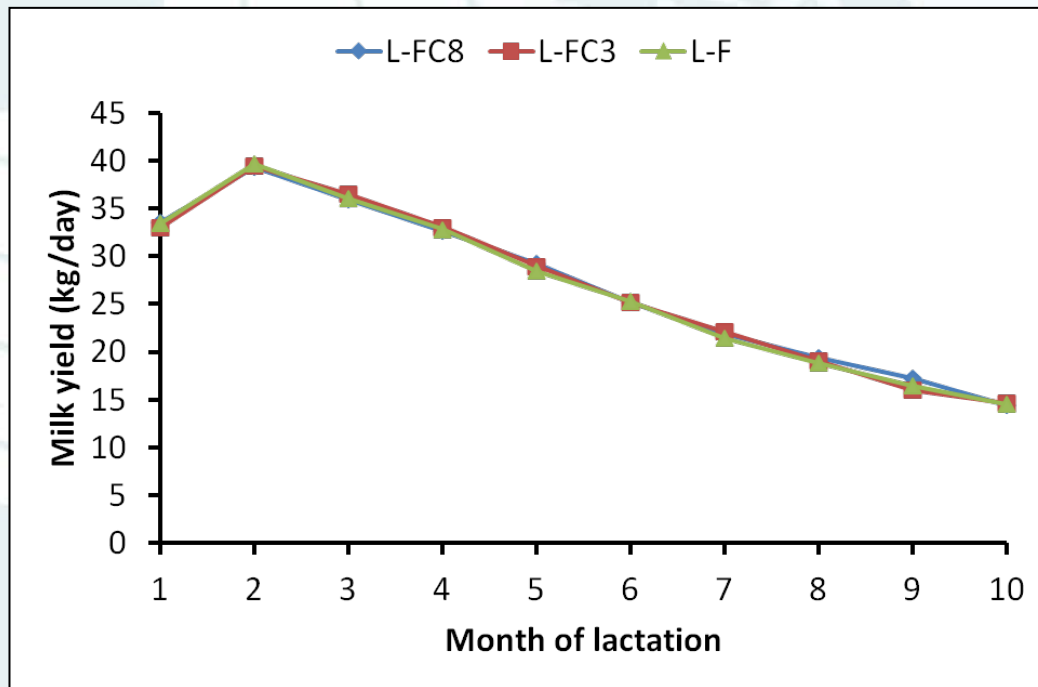


Effect of BCS at Dry-Off on Milk Yield

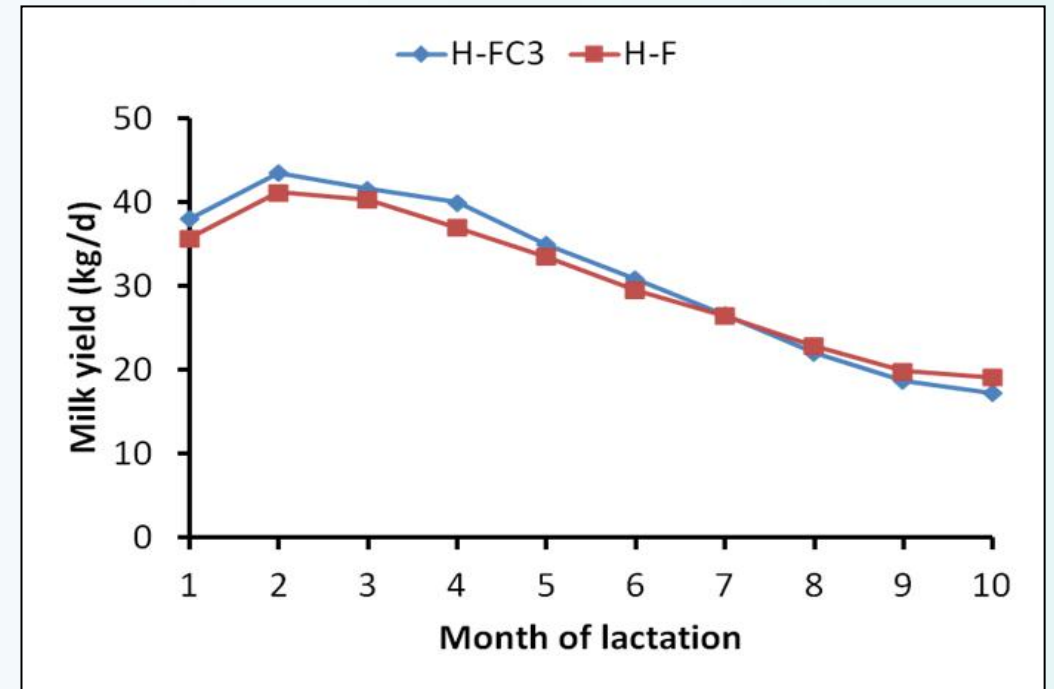


Effect of Nutritional Treatment on Milk Yield

(Low BCS Group)



(High BCS Group)



Effect of BCS at Dry-Off and Nutritional Treatment on Calf Birth Weight

	BCS group at dry-off		P-value
	L	H	
Calf birth weight (kg)	43.4	44.3	0.094

	Nutritional Treatment			P-value
	FC8	FC3	F	
Calf birth weight (kg)	43.7	43.6	43.4	0.764



Effect of BCS at Dry-Off on Fertility

	BCS group at dry-off		P-value
	L	H	
Conception rate 1 st service (%)	31.8	26.4	0.246
Conception rate 1 st & 2 nd service (%)	55.9	47.4	0.099
Overall CR Year 1 (%)	85.0	76.4	0.086



Effect of BCS at Dry-Off and Nutritional Treatment on Conception Rate to 1st Service & 1st and 2nd Service

Nutritional Treatment	BCS at dry-off				P-value
	≤225	235-260	265-285	≥290	
FC8	43.2	32.1			0.054
FC3	18.0	31.3	26.5	25.4	
F	25.5	32.9	28.7	25.0	0.934

Nutritional Treatment	BCS at dry-off				P-value
	≤225	235-260	265-285	≥290	
FC8	64.8	55.4			0.116
FC3	47.4	55.5	43.5	35.2	
F	75.4	54.9	52.0	48.2	0.215

Effect of BCS at Dry-Off and Nutritional Treatment on Culling Rate during the First 60 Days Post-Calving (%)

Nutritional Treatment	BCS at dry-off				P-value
	≤225	235-260	265-285	≥290	
FC8	8.5	5.6			0.284
FC3	9.1	5.7	0.0	4.7	
F	21.2	5.8	6.4	4.1	0.086



Conclusions

- ◆ BCS at dry-off is more significant than nutrition during the dry period
- ◆ Offering 2-4kgs concentrate / head / day resulted in no practical improvement in BCS
 - ◆ Very difficult to change BCS during the dry period
 - ◆ Cows should be dried-off at appropriate BCS
- ◆ Cows in very low BCS at dry-off, and on a low plane of nutrition, are more at risk to being culled in the first 60 days of lactation



Discussion

