

# Technical and economic impacts of concentrates according to forage diet and stage and row of lactation of dairy cows

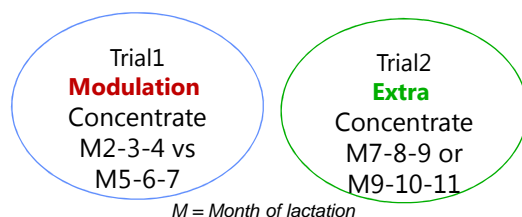


## WHY PROVIDE PRODUCTION CONCENTRATES TO DAIRY COWS?

In a high volatility context for both milk and crop prices in western Europe, dairy farmers need to be more flexible in terms of herd management to secure their incomes. One possible lever is to change feeding practices and especially to decrease concentrate levels, as this is the most expensive part of the diet. The production concentrate is the one fed over the required energy/protein balance of the diet. Two trials aimed at assessing its efficiency either when changing periods of feeding (**modulation**) or adding extra concentrate in mid and late lactation (**extra**).

## 245 LACTATIONS TO ASSESS THE EFFICIENCY OF CONCENTRATES

- 3-year trial 2011-14 in Trevarez experimental farm (CRA Bretagne, Idele, France)
- 2 trials: **modulation** (change feeding period) or **extra** concentrate fed
- Grazed grass diet or maize based diet
- 30 Holstein cows per group (40% primiparous)
- Concentrate in early vs mid-late lactation (12 or 18 months calving intervals):



## THE CONCENTRATE IS VERY REACTIVE BUT NOT VERY EFFICIENT

- The increase in concentrate leads to a very quick increase in dairy production (fig.1) as seen in week 18 when the delivering pattern reverses.
- Effect on protein (-0.12 ‰) and fat content (+0.18‰) only during months 5-7 when suppressing concentrates.
- Very little impact on body condition scores (+0.1 to +0.2 pt).
- No significant effect on reproduction and health.
- **The efficiency of the concentrate remained around 0.5 kg milk per kg extra concentrate** regardless of the parity, the stage of lactation (Tab.1) and the production level of the cows.
- Same efficiency on maize and grass based diets.

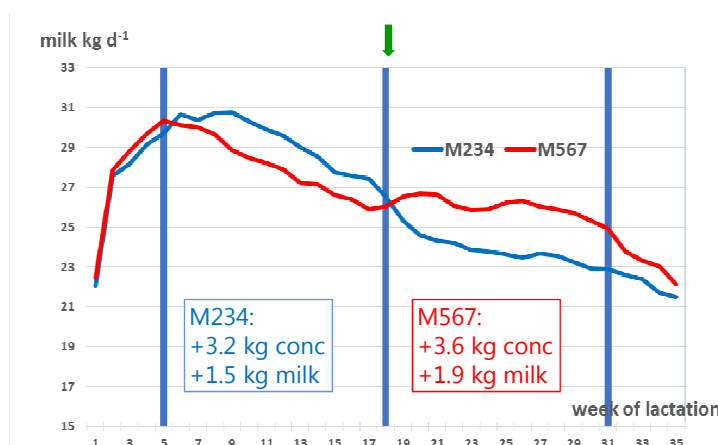


Figure 1: effect of concentrates on milk production at 2 stages of lactation (trial1-modulation)

Table 1: Efficiency - kg of milk per kg of production concentrate delivered

Month of lactation	Trial 1 Modulation	Trial 2 Extra concentrate in late lactation
2 to 4	0.47	
5 to 7	0.53	
7 to 11 according to CI (*)		0.50

(\*) Calving Interval 12 months: M7 to 9; CI 18 months: M8 to 11

Table 2: maximal price of concentrate according to the milk price to keep a positive margin over feeding cost at farm level

€ per T	Milk price (off farm)					
	220	260	300	340	380	420
Maximum price for concentrate	180	200	220	240	260	280
% of the milk price	82	77	73	71	68	67

## SIMPLIFY CONCENTRATE PATTERNS!

- These experiments confirm **the low efficiency of concentrates in regards to milk production** when the forage diet is of good quality and fed ad libitum.
- **The same level of concentrate may be fed to all animals** regardless of parity, stage of lactation or potential.
- Concentrates may be fed when the concentrate to milk price ratio is favorable (Table 2) to keep a positive margin over feeding cost – in average **below 70% of the milk price**.
- This only happened for a few weeks in Western France over the 5 years period of the economic study...

### Authors:

Brocard, V. (1), Tranvoiz E. (2), Portier B. (2)

(1) Institut de l'Élevage, Le Rheu, France

(2) Chambres d'Agriculture de Bretagne, Quimper, France

Contact: valerie.brocard@idele.fr

