

EFFECT OF FAT PRILLS, PRE- AND POSTPARTUM ON LIVER TRIGLYCERIDE CONTENT, MILK YIELD AND COMPOSITION OF DAIRY COWS

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Increasing dietary energy density by feeding supplemented fat may enhance lactation performance as well as metabolic efficiency of lactating cows (Kronfeld 1980). Inadequate energy intake prepartum and during early lactation has been associated with increased incidences of metabolic disorders (Curtis *et al.* 1985) and poor reproductive performance. The aim of this study was to determine the effects of pre- and postpartum supplementation of dietary fat on milk production and liver triglyceride concentration in dairy cows.

Twelve high yielding multiparous Friesian cows were blocked at random in 2 groups 5 weeks prior to par-turn in a Latin Square change-over design. The cows were housed individually in pens and the diets were offered *ad libitum* twice daily. Treatments were as follows: basal diet (mixed ration) and basal diet supplemented with 500g/day fat (Prilplus 10). Prilplus 10 is a protected fat and was fed with the morning feeding. Milk yield was recorded daily and milk composition determined fortnightly. Liver biopsies were taken by percutaneous needle biopsy 5 weeks before and 2 days and 5 weeks post parturition. All data were analysed statistically by analysis of variance. Results are presented in Table 1.

Table 1. Milk production, milk composition 5 weeks post partum and triglyceride (TG) content of liver biopsies from dairy cattle. (Mean value \pm SD)

	Basal diet	Basal diet + fat
FCM (kg/day)	30.8 (4.2)	33.6 (2.5)
Milk fat (%)	3.9 (0.9)	3.6 (0.8)
Protein (%)	3.6 (0.3)	3.4 (0.2)
Lactose (%)	5.1 (0.1)	4.9 (0.2)
Total Solids (%)	13.3 (1.2)	12.7 (0.4)
TG 5 weeks prepartum (mg/g)	1.5 (0.7)	1.7 (1.1)
TG 3 days post partum (mg/g)	3.1 (0.2)	5.6 (4.5)
TG 5 weeks post partum (mg/g)	2.2 (1.1)	4.0 (2.0)

Within rows, data with * alongside are significantly different, ($P < 0.05$).

Although milk production of fat supplemented cows were higher, no significant ($P < 0.05$) differences were found in milk production, milk composition and triglyceride content. The small number of cows per group ($n=6$) may have affected the above results. However the results agree with those achieved by previous authors.

CURTIS, C.R., ERB, H.N., SNIFFEN, C.J., SMITH, D.R. and KRONFELD, D.S. (1985). *J. Dairy Sci.* 68: 2347-9.

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