

THE EFFECT OF DIFFERENT ENCAPSULATED FAT SUPPLEMENTS ON MILK YIELD AND COMPOSITION OF HOLSTEIN-FRIESIAN COWS

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For the lactating cow, fatty acid output in milk usually exceeds daily intake of fatty acids. Thus, lipid metabolism must play an important, if not central, role in the energy economy of lactating cows (Palmquist and Jenkins 1980). To achieve maximum food intake without compromising rumen microbial metabolism, an inclusion of rumen-inert fat in the diet is recommended (Palmquist 1988). The aim of the study was to determine the effect of 2 fat supplements, Adolac (CSFA) and Prilplus 10 (fat prills) on milk yield and milk composition.

Twelve high yielding multiparous Friesian cows were supplemented with 2 fat supplements: Adolac (CSFA) and Prilplus 10 (fat prills) at a rate of 500 g/day. The cows were blocked at random in a Latin Square change-over design from 5 to 110 days post partum. The experimental periods for each respective fat supplementation and control were 5 weeks. Data from weeks 4 and 5 of each period were used in the statistical analysis. Milk yield was recorded daily and milk composition determined twice during weeks 4 and 5 of each experimental period. Liveweight and body condition score were determined weekly. All data were analysed statistically by analysis of variance (Snedecor and Cochran 1980). Results are presented in Table 1.

Table 1. Dry matter intake (DMI), Fat corrected milk yield (FCM), milk composition, liveweight (LW) and body condition scoring (CS) of cows given different supplementations. (Mean value \pm SD)

	Control	Adolac	Prilplus 10
DMI (kg/day)	24.3 (1.7)	23.6 (2.7)	23.8 (1.8)
FCM (kg)	34.9 (5.4)	34.8 (5.1)	34.5 (5.6)
Milk fat (%)	3.35 (0.3)	3.47(0.4)	3.58(0.2)
Protein (%)	3.28 (0.2)	3.30 (0.2)	3.28 (0.2)
Lactose (%)	5.07 (0.1)	5.04 (0.1)	5.05 (0.2)
TS (%)	12.57 (0.6)	12.49 (0.7)	12.60 (0.4)
LW (kg)	586(49)	570 (42)	579 (44)
CS	2.7 (0.62)	2.5 (0.45)	2.5 (0.67)

Within rows, data followed by * is significantly different ($P<0.05$).

In this study no significant ($P<0.05$) treatment effects were found in DMI, milk production, milk components, LW and CS. The small number of cows ($n=12$) may also relate to the non-significance of the results. It seems that the use of the complete diets fed in this study fulfill all the nutritional needs of the experimental cows, and fat supplementation had little effect in this study.

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