Three couples of compound feeds were formulated with the same *a priori* organic matter digestibility (about 80 %) and protein content. Within each couple, blend R was as rich as possible in digestible fibre (mean crude fibre value : 15.7 % dry matter) and the other one (P) was as poor as possible in those fibres and contained a maximum of starch (mean crude fibre value 6.6 % dry matter). The concentrate was given according to milk production : 350 g dry matter per kilogram fat corrected milk : it was offered in combination with two kinds of very different forages (lucerne hay and maize silage).

The 124 data concerned only situations where the level of forage refusals was at least 10 %. The statistical analyses were performed for each basal diet using as a co-variable the measured energy balance expressed as grams of digestible organic matter (DOMB).

TABLE 1

Influence of nutritional parameters on milk composition and fat composition.

Basal diet	Lucerne hay		Lucerne hay + maize silage		Maize silage	
Number of observations . . .	54		48		22	
	R-P	Covariate	R-P	Covariate	R-P	Covariate
Fat production (g/day) . . .	1.26 NS	+	13.56 NS	++	− 8.63 NS	NS
Fat content	0.79 NS	+	2.56 NS	++	− 1.53 NS	NS
Protein content	0.96 NS	NS	0.83 NS	++	1.15 NS	NS
% C4-C14	− 1.63 NS	++	0.92 NS	++	− 1.26 NS	NS
% C16	3.48 ++	++	0.90 NS	++	0.15 NS	NS
% C18 : 0 + C18 : 1	− 2.52 NS	++	− 1.56 NS	++	1.93 NS	+

Level of significance : 1 p. 100 ** ; 5 p. 100 *.

The energy balance had a negative effect on the tested parameters but the type of concentrates, within a given forage, had no influence on milk composition and level of fat produced (tabl. 1). However, these results seem to point out that blend « R » might slightly increase the milk fat or protein content and the fat production level in comparison to starch diets. The milk fatty acid composition was also measured and the statistical analysis was performed with 3 acid groups (sum C4 to C14, C16 and sum C18 : 0 + C18 : 1) expressed as per cent fat or as levels of production per liter of milk or per day and per goat. Except in the case of per cent of C16 or production of C16/liter of milk, there was no significant effect of the type of concentrate.

In conclusion, it appears that the nature of the concentrate had no specific influence goat milk composition or on the fat production.

Key words : Goat, milk composition, fibre, starch.

Influence of dietary organic matter digestibility on goat nutrition and production at the onset of lactation

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The negative energy balance of goats after parturition has drawn our attention upon its practical significance. Three diets (A, B, C) were given to 30, 38 and 59 goats respectively of

similar production potential. Lucerne hay (LH), maize silage (MS) and beet pulp silage (BP) were offered in *ad libitum* (AL) or restricted (R) quantities according to the following table :

Diets		A	B	C
Feed	Lucerne hay	AL	R	R
	Maize silage	R	AL	—
	Beet pulp silage	—	—	AL

The organic matter digestibility (OMD) of these feeds was measured *in vivo*. In each experiment, the animals received the concentrate according to a previously determined programme. Results were recorded 1, 2, 4, 6 weeks after parturition.

The mean organic matter digestibility (OMD) were 71.2, 76.0 and 77.0 % respectively for A, B, C. Improvement of the dietary OMD increased the levels of dry matter and energy intake ; consequently, the raw milk yield was about 300 g/d higher with diet B vs A and C vs B respectively, while the fat content was the same between A and B and only slightly smaller with diet C (50.5 % vs 51.7 %). The calculated energy balance did not vary between diets A (− 0.86 Mcal/d), B (− 0.90) and C (− 0.78) : however, the plasma glucose content was different significantly between diets A (0.540 g/l), B (0.593) and C (0.618) while the N.E.F.A. values showed a reverse hierarchy between diets A (577.1 µeq/l), B (465.0) and C (385.9). These differences in energy intake and nutritive status influenced the milk fatty acid secretion : the C4 : 0 to C12 : 0 production was 22.4, 28.8 and 35.8 g/d for diets A, B, C and the C14 : 0 + C16 : 0 level of production was 52.7, 54.7 and 60.6 g/d, and C18 : 0 + C18 : 1, 51.6, 51.7 and 44.6 g/d for diets A, B and C.

Such data emphasized the zootechnical and nutritional advantage of improving the OMD of goat diets through roughage choice at the onset of lactation.

Key words : Digestibility, goat, onset of lactation, energy balance.

Performance of Zaraibi and Damascus lactating does fed high and low energy rations

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Fourty-six healthy lactating Zaraibi and 22 Damascus lactating does were used. The average body weight of these does was 30 and 40 kg, respectively. This study started after gestation and lasted for 32 weeks. Does were housed and group-fed according to the NRC (1981) low activity standards. Milk production requirements were based on 1 kg daily 3.5 % fat milk yield. Two energy levels, 100 and 125 % on a starch equivalent basis were investigated using diets providing 40 % of its net energy from roughages.

Available roughage were clover, hay and sweet sorghum which were fed along with a concentrate mixture to cover the rest of the energy needs. A proportional 25 % increase of diet ingredients was applied to formulate the high energy rations.

The average daily milk yield in Zaraibi does during the whole experimental period was 0.691 and 0.715 kg, respectively with low and high energy diets, and 0.743 and 0.960 kg, respectively for Damascus does. Lactation ceased in does earlier than after 32 weeks. Therefore, the average lactation length was 208 and 182 days out of a total period of 224 days in Zaraibi does fed low and high energy diets while it was 170 and 203 days for Damascus does. According, total milk yield based on daily yield and lactation length showed that Zaraibi does produced 131.0 and 130.1 kg milk, respectively, with low and high energy diets, while Damascus does produced 126.6 and 194.9 kg, respectively.