

K.I. = 12 months) or the longer the suckling period or the higher the milk yield and the higher the lipid mobilization.

We also observed changes in the production of milk fat + protein (83.0 g/day for females with K.I. of seven months vs 86.4 g/day with a K.I. of twelve months).

This work showed the importance of body conditions in goats at mating and its effect on fertility. It also demonstrated the necessity of perfecting for evaluating the reproductive and milk potential of goats in extensive systems of production.

Key words : Extensive system, body condition, kidding period, kidding interval, grading scale, goat.

Effect of concentrate allowance on *ad libitum* hay consumption by lactating British Saanen goats

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Twenty seven British Saanen goats were offered a controlled ration during the last 12 weeks of pregnancy. The daily allowance was 1.5 kg grass hay (8.0 p. 100 CP) plus 150 g of dairy concentrate (17 p. 100 CP) until 4 weeks before predicted kidding, then concentrate was increased to 450 g until kidding. At kidding the goats were allocated to three treatments of low (0.7 kg) medium (1.2 kg) or high (1.7 kg) daily concentrate allowance. The concentrate allowance was gradually increased so that all goats received their full allowance by week 3 of lactation and was then held constant until week 11. Hay was available *ad libitum* throughout the lactation period. Milk yield, milk fat, live weight and hay and concentrate intake were monitored throughout the trial. In a similar way to what has previously been observed in cattle, the hay intake was substantially reduced (669 g) in the group offered a high level of concentrate (1 389 g) and there was only a slight reduction (1 102 g) in the medium group (1 000 g concentrate) compared with the low group (1 222 g hay/593 g concentrate). The calculated replacement rate of hay dry matter (DM) intake by concentrate DM intake was 0.25 between low and medium but 1.0 between the medium and high concentrate allowance. Both milk yields (2.69, 2.94, 3.21 kg/day) and calculated Metabolisable Energy (ME) (17, 21, 23 MJ/day) intake increased according to a pattern of « diminishing return » as concentrate allowance increased. The milk fat concentration was generally low at the time of the trial and there was little effect on concentrate allowance. The results confirm principles established with dairy cows that high rates of concentrate allowance will reduce forage consumption and utilization. The economic consequences will depend on the concentrate milk price ratio, but in general, excessive concentrate allowance will not optimise economic efficiency of goat milk production.

Key words : Goat, concentrate, forage, replacement.