

*Brief Communication*

PLASMA THYROXINE THROUGH PARTURITION  
AND EARLY LACTATION IN GOATS FED SILAGE  
OF GRASS AND RAPE

The plasma thyroxine levels in dairy cows have been reported to decrease by about 75 % during the first week of lactation (*Kesler et al.* 1981). The results to be presented here indicate that a decrease in plasma thyroxine may occur immediately after parturition also in dairy goats.

Blood samples were obtained from goats on a feeding trial in which grass silage was given ad lib. in the morning. In the evening, silage of rape was offered also ad lib., until the fourth week of lactation when it was gradually replaced by grass silage in 7 out of 14 animals. Concentrates (0.6 kg or according to yield) and some hay (0.2 kg) were given throughout the sampling period.

As determined by radioimmunoassay (*Andresen et al.* 1980) the plasma thyroxine levels at parturition,  $106 \pm 35$  nmol/l, were close to those found by *Kesler et al.* in cows ( $79 \pm 16$  ng/ml or about 100 nmol/l). During the first week of lactation the levels decreased by about 30 % and remained lowered for at least 3—4 weeks (Table 1). In the samples obtained after 2 months of lacta-

Table 1. Plasma thyroxine levels in goats through parturition and early lactation.

Days before or after parturition	Animals sampled	Thyroxine, nmol/l, means $\pm$ s
19— 6	7	$107 \pm 17$
5— 2	7	$120 \pm 18$
Parturition	13	$106 \pm 35$ (a)
3— 4	13	$76 \pm 15$ (b)
6— 9	14	$72 \pm 13$
12—20	14	$76 \pm 11$
22—25	11	$71 \pm 13$ (c)
62—67	13	$83 \pm 13$ (d)

a vs. b:  $P < 0.001$

c vs. d:  $P < 0.05$   
(Wilcoxon's test)

tion a slight but significant increase was apparent. At this stage the rape silage earlier given once daily had been replaced by grass silage for 1 month in half of the animals. However, on the average, the thyroxine levels in these subgroups were nearly identical.

Four additional animals sampled were fed grass silage twice daily and did not have access to the rape. Their thyroxine levels at parturition ( $92 \pm 14$  nmol/l) and 1 week later ( $72 \pm 14$  nmol/l) did not deviate significantly from the levels in the main group investigated. Thus, although perhaps containing goiterogens (Virtanen 1961), the rape silage did not seem to affect thyroxine to any noticeable extent.

The thyroxine depression after parturition in the goat as well as in the cow is probably conditioned by the onset of lactation. The causative factors involved remain to be identified.

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