

- Organic Matter : 47.8 ± 1.0 % dry matter ;
- Crude Fibre (WEENDE) : 24.0 ± 2.0 % ;
- Crude Protein : 53.1 ± 2.1 %.

The total water intake level was very low : 1 140 g water/kg DM intake.

At this time (Oct. 86), all the experimental results were not analysed and thus we are not able to propose satisfactory conclusions. Nevertheless, we must say that, in our specific conditions, browsing behaviour in cages is very close to that recorded on the range with a moderate stocking density. The first estimates of apparent digestibilities show that fibres were very poorly used and point out to a digestibility of oak proteins better than expected. In future studies, we will test mixed diets in cages and on the range, in order to define the best nitrogen/energy ratio and quality to improve this fibre utilization.

Key words : Digestibility, *Quercus ilex*, goat, rangeland.

Intake and digestibility of kermes oak (*Quercus coccifera*) browse in goats, as affected by phenological stage and supplementation

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Intake and digestibility of kermes oak browse (*Quercus coccifera*) was tested in goats in digestion trials during spring, summer, fall and winter. Additionally, the effect of sugar beet pulp (14 g/BW⁷⁵/animal/day) and soybean meal (25 g/BW⁷⁵/animal/day) on intake and digestibility were tested, during the winter season. For comparative purposes a digestion trial with good quality alfalfa was conducted. Forage on offer was presented as fresh branches at amounts over three times the maximum intake observed during the 10-day preliminary period preceding each trial.

Crude protein content of DM consumed did not vary significantly among seasons. It was 7.8 % during the spring period, 6.5 % during summer, 7.2 % during fall and 7.1 % during winter. No significant differences were found in NDF, ADF and total energy content ranging from 51.2 to 54.6 %, 37.0 to 37.9 %, 4.8 to 4.9 Kcal/g respectively. A significant increase was found only in lignin content from 13.3 % in spring to 17.6 % in summer.

Intake of spring collection kermes oak 79 g/kg BW⁷⁵ was significantly higher than that of oak collected during the other seasons in which intake ranged from 51 to 59 g/kg BW⁷⁵. Intake by goats consuming winter collection oak was increased only when animals were supplemented with soybean meal. However, when kermes oak was considered alone no significantly increased intake was observed. Intake of plain oak all seasons but Spring was very low and corresponded to less than 45 % of their potential intake capacity when compared to alfalfa hay intake (129 g/kg BW⁷⁵).

Apparent DM digestibility of spring oak (70 %) was significantly higher ($P \leq 0.05$) than that (53-56 %) of oak collected during the other phenological stages. There was no significant difference between oak collected during summer, fall or winter. This was partially a result of the selective grazing of the animals. The overall digestibility when supplemented with sugar beet pulp (54 %) or soybean meal (55 %) was not significantly affected. *In vitro* digestibility determined by the TILLEY and TERRY (1963) method using inoculum from goats browsing fresh oak underestimated *in vivo* findings by 10 units for mature oak foliage and by 20 units for the immature foliage.

Nitrogen digestibility was significantly higher (66 %) for the spring foliage when compared to the remaining oak diets (42-46 %). Similar results have been found for the apparently digested energy. Nitrogen content in spring oak compared to tabulated values was adequate for maintenance while it was below the requirements for milk production. Nitrogen content of oak from the remaining seasons was insufficient even for maintenance. Digestible energy content per kg of feed (over 2.4 Mcal/kg) was sufficient for maintenance but insufficient for lactation all seasons but spring. However, digestible energy actually consumed was well below the maintenance requirements due to the low level of intake and its low digestibility.

Key words : *Quercus coccifera*, goat, digestibility, intake.