Once-daily milking ability of the Lacaune ewes : synthesis of the results of a 4 years French study

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Responses to a heat stress episode in lactating Saanen and Alpine goats

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This study aims to assess the effect of a sudden heat episode on lactating Saanen and Alpine goats bred under temperate climate (Paris area, France). Eight Saanen and eight Alpine goats were included in the experiment. They were offered *ad libitum* water and a total mixed ration twice daily; feed and water intake were recorded daily. The study extended over two 5-day periods: the first period served as control with a maximum thermal heat index (THI) of 64.5 and the second 5 days period represented the heat episode with a minimum THI of 68.0. Selected physiological parameters were analyzed including rectal temperature, plasma glucose, NEFA and urea, and blood pCO_2, Na^+ and HCO_3^-. Milk production and composition was also individually assessed. Data were analyzed using the mixed procedure of SAS® for repeated measurements. Blood analysis showed that the does resorted to hyperventilation to dissipate the extra heat load. In addition, heat stressed animals drank more water probably to compensate for water lost for cooling especially since rectal temperature increased. Finally, milk production was maintained, although milk fat and protein content dropped during the heat episode. The data were also subjected to PCA analysis which revealed a significant effect of the period and of the breed with no interaction between these two factors. In conclusion, the experiment showed that although the animals were born and raised under a temperate climate, they could handle a short heat wave with minimal physiological disturbances.

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In France, dairy sheep breeders aim at reducing the milking labor workload. The research program ROQUEFORT'IN included 10 experiments using Lacaune ewes bred in two experimental flocks (La Fage and La Cazotte) from 2009 to 2012, for a total of 574 lactations. Half of the ewes was milked twice a day (TDM) and the other half milked once a day (ODM – morning) from 50 days in milk to the end of the lactation. The ODM ewes were, either fed *ad libitum* individually or in batches, either fed according to the actual milk yield level of the batch or at higher levels up to the feeding of the TDM ewes. On average milk yield of the ODM ewes decreases significantly by 18% (from 10% to 25% depending on the experiment) with no significant differences between primiparous and multiparous ewes. Without feeding restriction, ODM ewes do not adjust their feed intake to their reduced milk yield. Compared to TDM ewes, milk protein content of ODM ewes tends to increase slightly, mainly due to soluble proteins increase. Milk fat content decreases significantly with at libitum feeding ODM ewes, while milk fat content is not significantly different from TDM ewes when feeding of ODM ewes is adjusted to their milk yield decrease. Thus overfeeding must be avoided and even more so feeding adjustement to the actual milk yield of ODM ewes does not reduce milk yield more. Milk somatic cells count of ODM ewes is not significantly different to TDM ewes (udder health) and milk flow is significantly higher for ODM ewes (milking duration preserved).These results show a good ODM ability of the Lacaune ewes. This research was supported by the ROQUEFORT'IN contract funded by FUI, Midi-Pyrénées region, Aveyron & Tarn departements & Rodez town.

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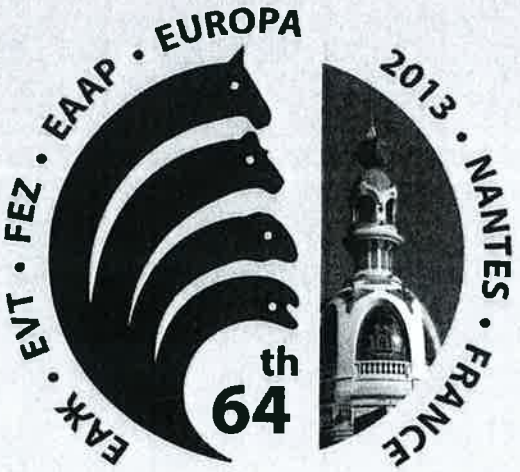

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