

The study of the effect of *Sinapis arvensis* on digestibility, protozoa morphology, blood parameter and thyroids hormones in Arabi sheep

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Abstract

This study was conducted to investigate effect of *Sinapis arvensis* on digestibility, protozoa species, and blood parameters and thyroids hormones in the Arabi sheep. Diet containing 25% *Sinapis arvensis* instead of alfalfa were used in feeding of Arabi sheeps with average weight 25±5 kg and 1-year age. These diets containing 50% forage and 50% concentrate were used for a 45 days' period. At the end of the experiment, feed intake, digestibility of nutrients, ruminal fermentation parameters, protozoa population and blood metabolites of animals were measured. The result showed that adding *Sinapis arvensis* to sheep's diet had not significant effect on dry matter and organic matter intake. Digestibility of dry matter, organic matter, neutral and acid detergent fiber was significantly not different between treatments. But digestibility of crude protein in diet containing *Sinapis arvensis* was lower than control (69.32 and 61.41 % for control and diet containing *Sinapis arvensis*, respectively). The time of feed eating; resting, rumination and chewing were not affected by the experimental diets. Ammonia nitrogen and pH of control and diet containing *Sinapis arvensis* had no significant difference. Adding *Sinapis arvensis* had not significant effect on rumen protozoa population and species of sheep. Based on the result, blood urea decreased (16.13 and 13.40 mg/dl for control and diet containing *Sinapis arvensis*, respectively) and triglyceride was greater in diet containing *Sinapis arvensis* (11.32 and 18.13 mg/dl for control and diet containing *Sinapis arvensis*, respectively) than the control treatment, respectively. But blood cholesterol, glucose, HDL and LDL didn't influence by treatments. Also effect of *Sinapis arvensis* on aspartate aminotransferase and **alanine** aminotransferase, T3, T4 and TSH hormones and cratinin was not significant. According to the result of this study, due to the lack of a negative effect on digestibility and fermentation and blood parameters and thyroids hormones of sheeps, it may be *Sinapis arvensis* can be used by 25% as replacement with alfalfa in Arabi sheep diet.

Key words: *Sinapis arvensis*, Arabi sheep, Digestibility, Blood Metabolites, Thyroid's hormones

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