Tropentag, September 18-20, 2019, Kassel

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for sustainable resource management"

Effect of Using Different Levels of Willow Silage on Growth Performance of Jordanian Awassi Lambs

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Abstract

The objective of this study was to substitute wheat straw as a common forage source in Jordan with different levels of willow silage (*Salix* spp.) to study its effect on growth performance of Awassi lambs. Twenty-six male Awassi lambs were randomly assigned to one of three groups: control (8 lambs) were only wheat straw was used, silage-10 (9 lambs) were both straw and willow silage were used, and silage-20 (9 lambs) were only willow silage was used as forage source.

At the age of 110 days, weaned lambs were caged in separate pins at Khanasri Station for Animal Research in which dry matter intake was measured daily, and lambs body weights were measured weekly. Average initial body weights for control, silage-10 and silage-20 were 22.0, 22.5 and 22.1 kg, respectively. Lambs consumed an isocaloric, isonitrogenous high concentrate diet *ad libitum* (20:80, F:C ratio) for 90 days to study the effect of different levels of willow silage as a substitute of wheat straw on growth performance of fattening Awassi lambs. Metabolisable energy of the diets was between 2.9 - 3.0 Mcal kg^{-1} and crude protein content was 16 % (all on DM basis). Fecal samples were collected after 9 weeks of the experiment to measures the digestibility of crude protein, neutral detergent fiber (NDF) and acid detergent fiber (ADF).

Substitution of different levels of willow silage had no significant effect on dry matter intake or average daily gain compared to the control. Feed to gain ratio for silage-20 was slightly higher than other groups but the difference was not significant. On the other hand, crude protein digestibility was significantly higher ($p < 0.02$) in lambs consumed silage-20 and silage-10 diets (78.3 and 75.5 %, respectively) compared to control group (61.6 %). Lambs consumed silage-20 diet had significantly higher ($p < 0.001$) NDF and ADF digestibility compared to silage-10 and control groups.

In conclusion, using willow silage as a forage source not only increase the digestibility of nutrients but also provide livestock with fresh high quality forage.

Keywords: Akwassi lambs, fattening, growth performance, *Salix* spp., willow silage

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