

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



المركز الوطني للبحوث الزراعية  
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## Introduction

Forage availability is one of the major factors affect livestock production sector in Jordan. Despite of lower quality, wheat straw is commonly used as a source of forage for sheep and goat in Jordan

Livestock household paid higher prices for dry and low quality forage.



Willow tree (*Salix spp.*) grows naturally in Jordan near water streams. Willow's leaves have high content of crude protein (16% as DM basis) with high contents of phenolic compound (Muklada et al., 2017).

Ensilage willow plants and use it as fodder to animals is considered a new fresh forage source with high protein contents (9.5% as DM basis).



## The Objective

To study its effect of feeding willow silage on growth performance of fattening Awassi lambs.

## Materials and Methods

26 weaned Awassi lambs were placed in individual pens and offered a high concentrate diet *ad lib.* that contain 20% forage and 80% concentrate.

They assigned to 3 groups; control, silage-10 and silage-20 were lambs fed 20% of diet willow silage as source of forage (Table 1).

Forage portion of the diet was offered once daily and concentrate was fed twice daily in amounts to insure 10% orts.

Body weights were measured once weekly.

Table 1: Feed ingredients and diet chemical analysis for each group			
Ingredients	Control	Silage 10	Silage 20
Wheat Straw	20	10	-
Willow Silage	-	10	20
Barley	56	57.5	59.5
Soybean meal	21.3	19.5	17.7
Limestone	1	1.3	1.1
Salt	1	1	1
Bicarbonate	0.6	0.6	0.6
Premix	0.1	0.1	0.1

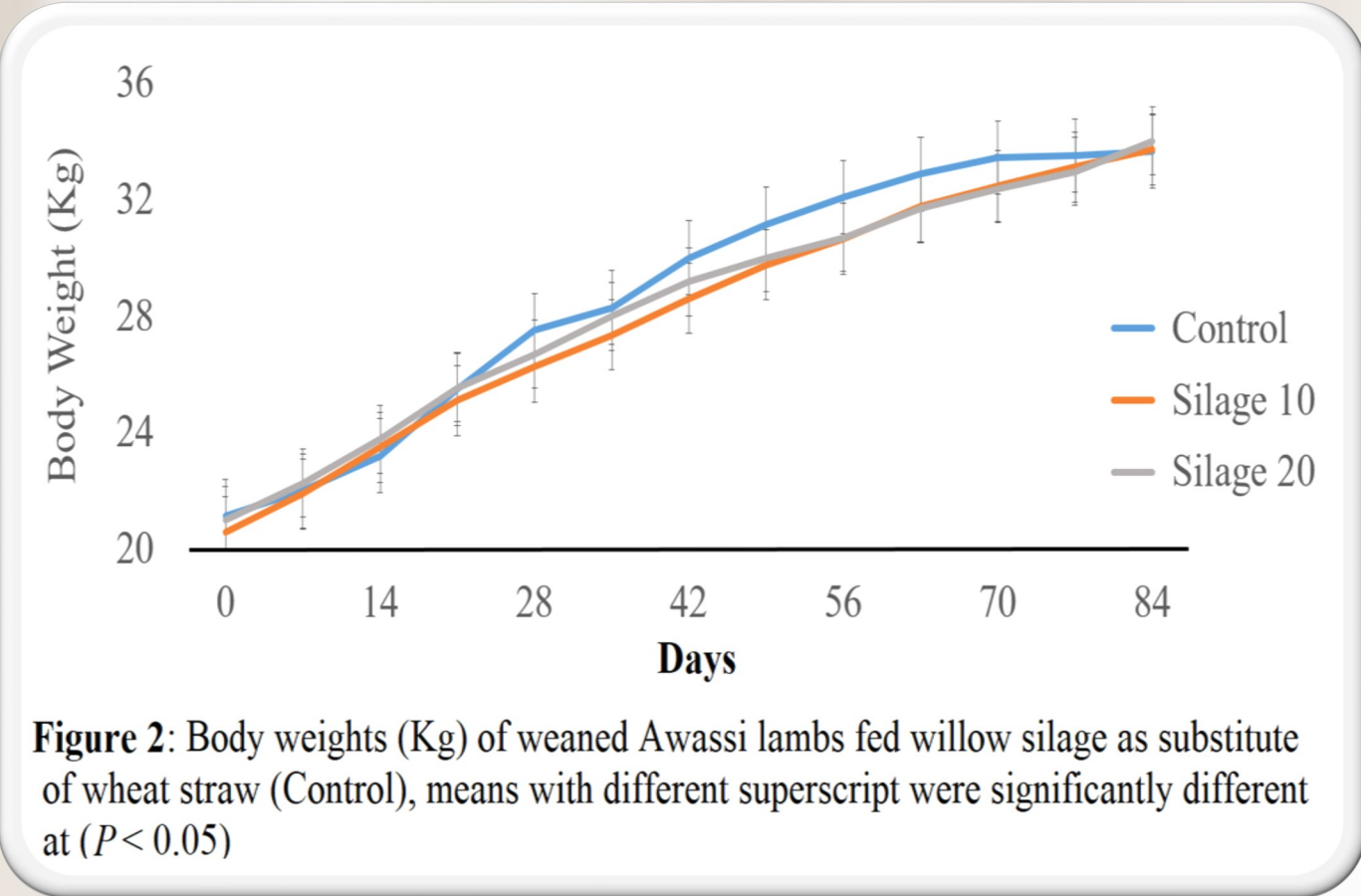
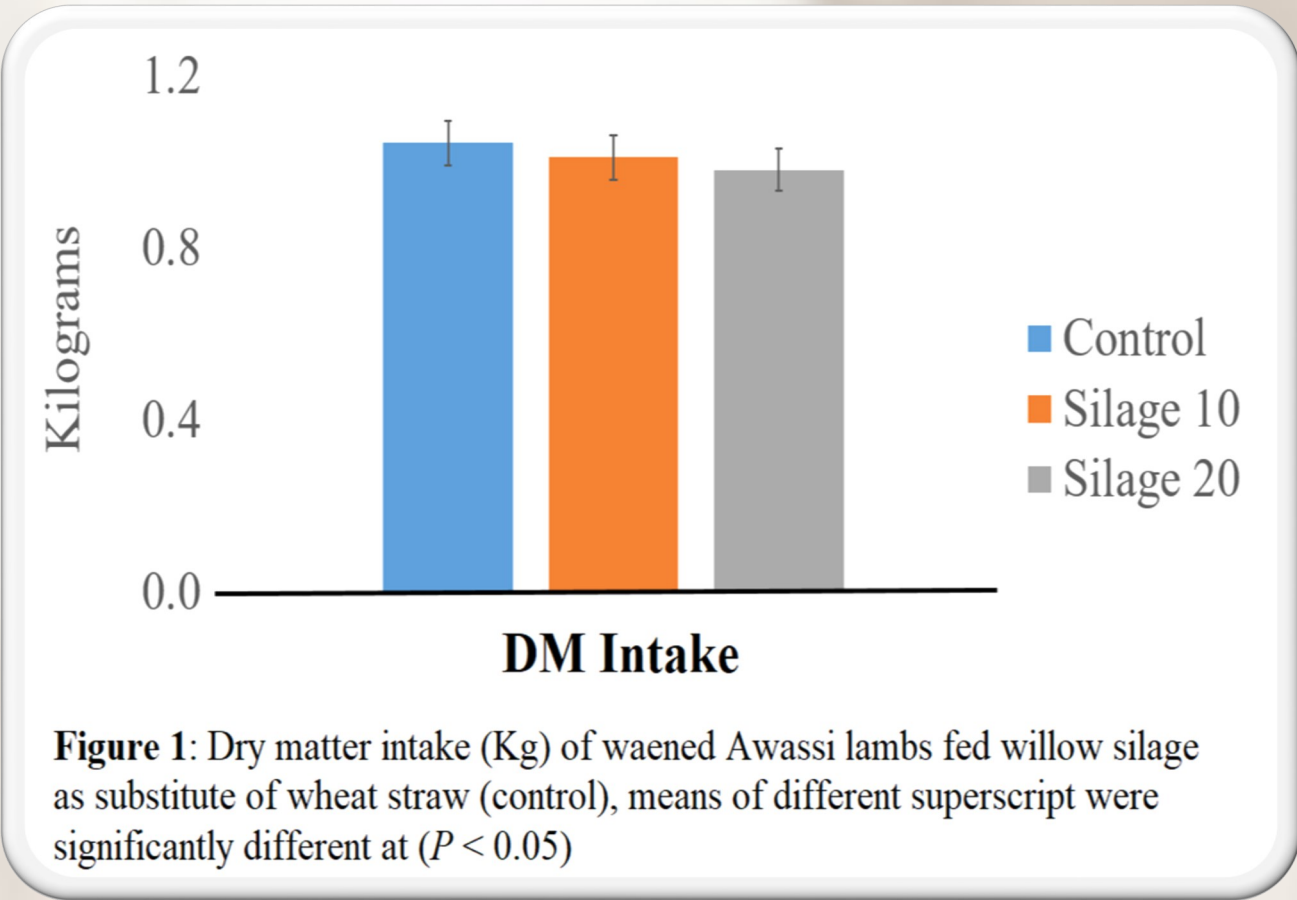
  

Feed Analysis	Control	Silage 10	Silage 20
DM (%)	90.4	85.5	80.5
ME (Mcal/Kg)	2.9	3.0	3.1
CP (%)	16.0	16.0	16.0
NDF (%)	28.3	25.8	23.4
ADF (%)	17.0	14.4	11.9
Ash (%)	4.3	3.9	3.6
Ether Ext. (%)	1.8	2.0	2.2

## Results

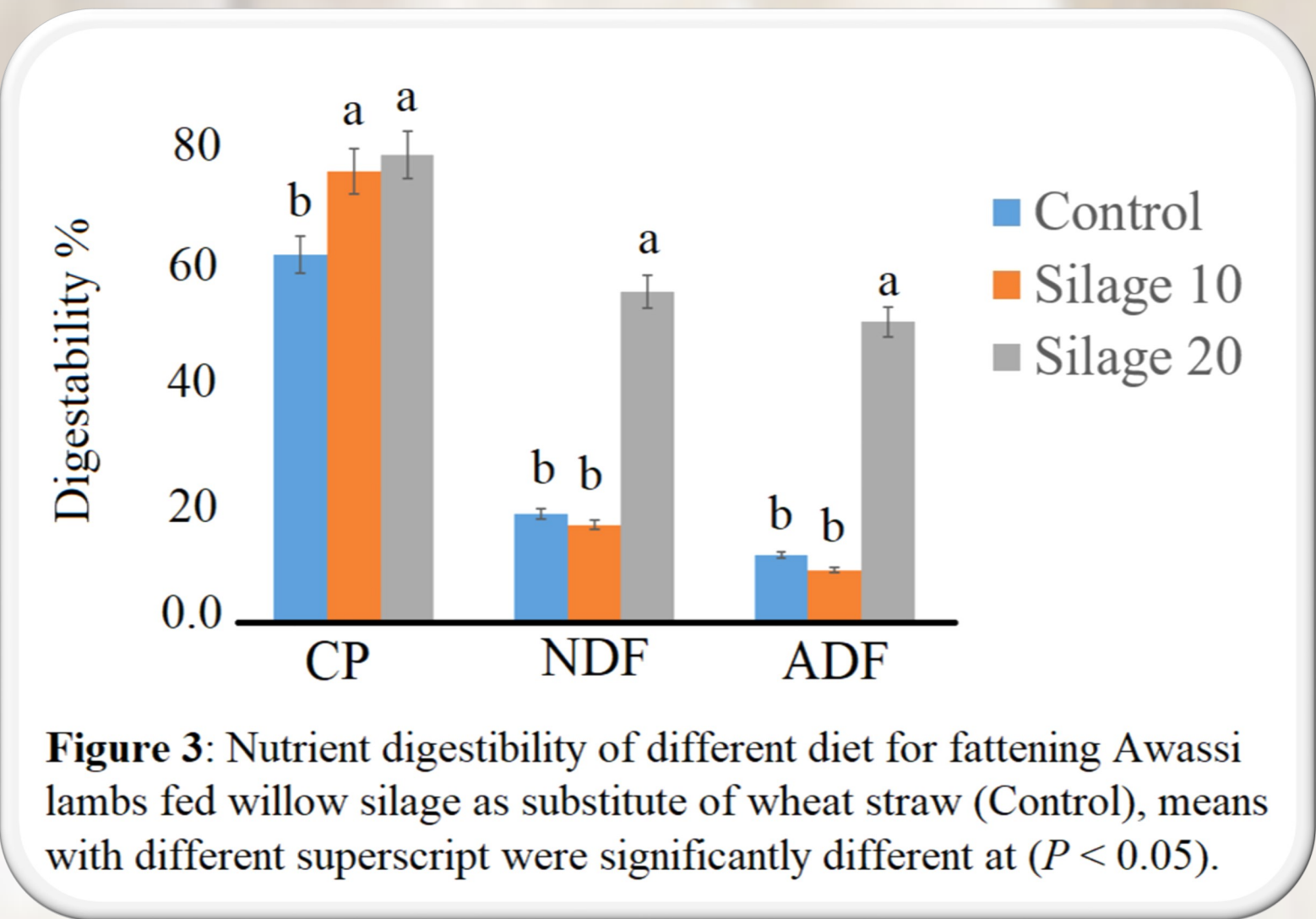
Substitution of different levels of willow silage had no significant effect on dry matter intake (fig. 1) or average increase in body weight (fig. 2) compared to control where only wheat straw was used.

Feed to gain ratio for silage-20 was slightly higher than other group but the difference was not significant.



Crude protein digestibility was significantly ( $P < 0.05$ ) higher (fig. 3) in lambs fed silage-20 and silage-10 diets (78.3 and 75.5 %, respectively) compared to control group (61.6 %).

Lambs fed silage-20 diet had significant ( $P < 0.05$ ) higher NDF and ADF digestibility (55.3 and 50.4 %) compared to silage-10 and control groups.



## Conclusions

Using willow silage in a diet increase feed to gain ratio, which means that less feed is needed to reach daily requirement

Using willow silage as a forage source not only increase the digestibility of nutrients but also provide livestock household with high quality and fresh forage throughout the season.



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