

# Effect of willow silage on carcass characteristics and meat quality of fattening Awassi lambs

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## Introduction

Awassi is the most numerous and widespread breed of sheep in Jordan. Awassi sheep is a fat-tail breed with dual purposes; livestock in Jordan bred Awassi for their milk and meat.

Willow silage is been used recently in small ruminant diets as a source of forage. Its newly introduced as non-conventional fresh forages with high protein contents (9.5% as DM basis).



## The Objective

To evaluate the effect of willow silage on carcass characteristics and meat quality of Awassi lambs in Jordan

## Materials and Methods

26 weaned Awassi male lambs were placed in individual pens and offered high concentrate diet *ad lib*.

They assigned to 3 groups;

- Control (0 % willow silage) were only fed wheat straw as forage;
- WS50 group were fed 50% of forage as willow silage;
- WS100 group only fed willow silage as forage in their diet.

Lambs were fed high concentrate diet (20:80, F:C ratio) for 90 days after which 5 lambs from each group were sacrificed to study carcass characteristics and meat quality.



## Results

⇒ Hot carcass weight, cold carcass weight, dressing percentages and weight of internal organs were all unaffected by feeding willow silage.

⇒ Kidney fat for control lambs was significantly ( $p < 0.05$ ) higher (141g) compared to the WS50 and WS100 (64 and 81g, respectively).

⇒ Control had significantly ( $p < 0.05$ ) heavier loin cuts and lighter fat tail compared to other silage groups

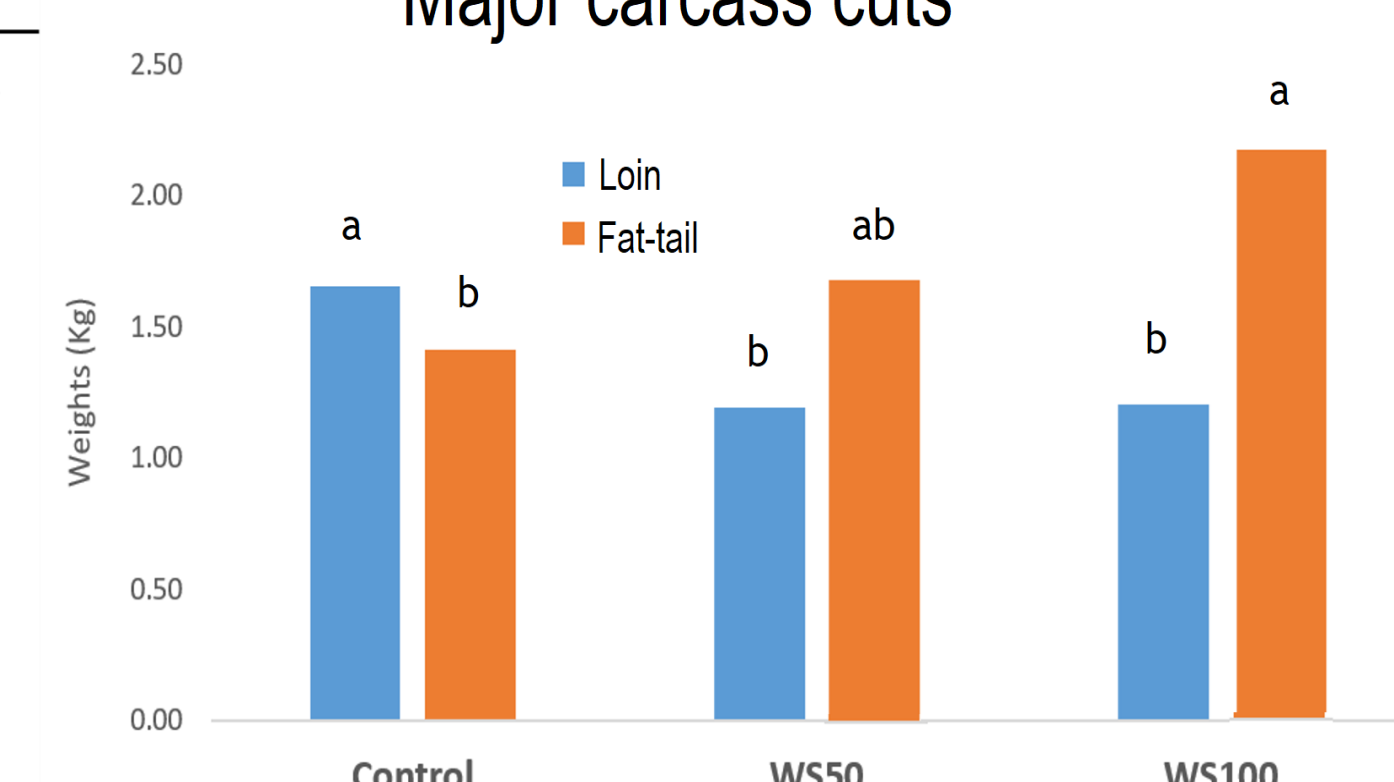
⇒ Lambs meat fed WS100 were lighter than lambs fed WS50 and control groups but the different was not significant. On the other hand, shear force measurement on Longissimus muscle was significantly lower in WS100 compared to control (6.1 vs 8.8 newton).

Table . Carcass characteristics of Awassi lambs fed different concentration of Willow silage

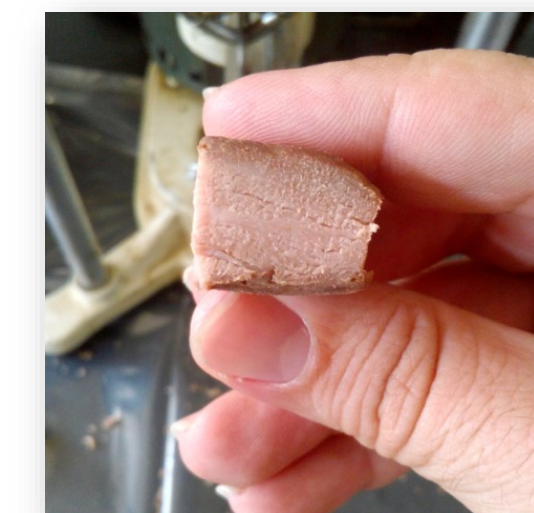
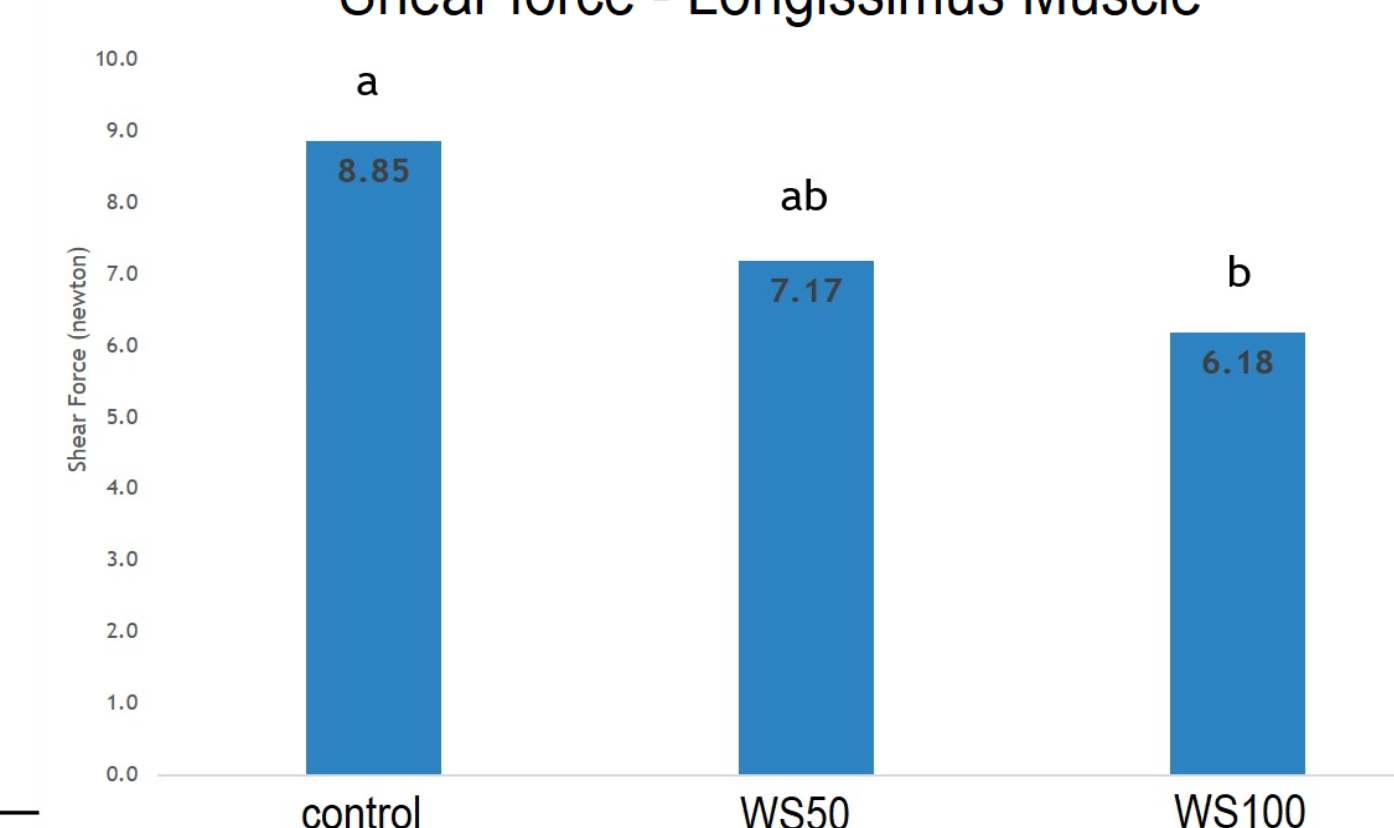
	Control	WS50	WS100	P - Value
Fasting Wt (Kg)	35.1	32.5	33.0	
Hot Carcass Wt (Kg)	17.9	16.8	17.6	
Cold Carcass Wt (Kg)	17.4	16.2	17.1	
Dressing %	49.5	49.7	51.8	
<b>Carcass Cuts (kg)</b>				
- Shoulders	6.64	6.03	6.12	
- Legs	5.60	5.53	5.60	
- Racks	1.34	1.33	1.46	
- Loins	1.65 a	1.19 b	1.2 b	***
- Fat Tail	1.42 b	1.71 ab	2.2 a	**
<b>Internal Organs (g)</b>				
- Heart	182.8	157.0	163.6	
- Liver	546.0	533.3	527.6	
- Lungs & Trachea	624.0	604.7	545.4	
- Spleen	82.0	72.3	90.8	
- Kidney	102.0	106.7	101.0	
- Testes	150.0	155.8	158.0	
- Mesentric fat	334.0	177.0	210.4	
- Kidney Fat	142 a	65 b	80 b	**
Loin Area (sq cm)	11.89	11.31	11.07	
<b>Loin (mm)</b>				
L3	3.2	2.9	3.0	
GR	12.0	11.2	11.7	
J	2.5	2.4	2.3	
A	52.2	53.6	51.7	
B	24.8 a	21.9 b	22.2 b	***
C	2.3	1.9	2.4	
S2	2.0	1.8	1.5	

a, ab: means with different superscript were significant \*\* P < 0.05 ; \*\*\* P < 0.01

### Major carcass cuts



### Shear force - Longissimus Muscle



## Conclusions

In conclusion, Feeding willow silage to weaned Awassi lambs increase fat deposition on the tail and increase meat tenderness (Lower shear force) with lighter meat color of compared to lambs fed dry forage which is favorable in Jordanian market.