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The Effect of Feeding Silage on Assaf Sheep Milk Quality and Quantity

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Introduction

Silage activities are one of the main activities of Palestinian Ministry of Agriculture through several projects such as Middle East Regional Agricultural Programme (MERAP) – animal wealth component. However silage was made from different kinds of crops and byproducts using both barrel and trench method. Feed trail was conducted to study the effect of feeding silage on Assaf sheep milk quantity and quality was implemented through EVAP project which was funded by JICA. However, twenty one lactating Assaf ewes were divided according to daily feed intake to three groups: group A one fed concentrate and wheat hay as roughage source, group B fed concentrate, and roughage (50% hay, and 50% silage), and group C fed concentrate and the source of roughage was 100% silage. Total milk yield to 90 days of lactation TMY90, total milk yield to 120 days of lactation TMY120, and total milk yield to 150 days of lactation TMY150 were estimated. Milk samples were analyzed for fat, protein, minerals, lactose, and non-solid fat percentage. Data were analyzed using SPSS 16 for windows. The results showed no significant difference ($p>0.05$) in milk production between group 1 and group 2, the difference was between group3 and the other two groups ($p<0.05$) which produced more milk. Also the percentage of fat was significantly higher in group B ($p<0.05$) compared to group 1 and group 2. Moreover, feeding silage raised milk production by 14% and lowered the cost of feed by 10.6 - 21.3% in group 2 and group 3 respectively. It was concluded that substitution wheat hay by 50% of silage on lactating Assaf ewes feed increased milk production and decreased daily ration cost. More feed trails are needed to study the effect of replacing part of concentrate and roughage with sufficient amount of silage.

Introduction

In Palestine feed contributes more than 75% of the total cost of the animal production, where most of ingredient are imported from foreign sources at high cost. Utilizing by product as components of animal feed may decrease the total cost of feeding which could increase the profitability of livestock producers.

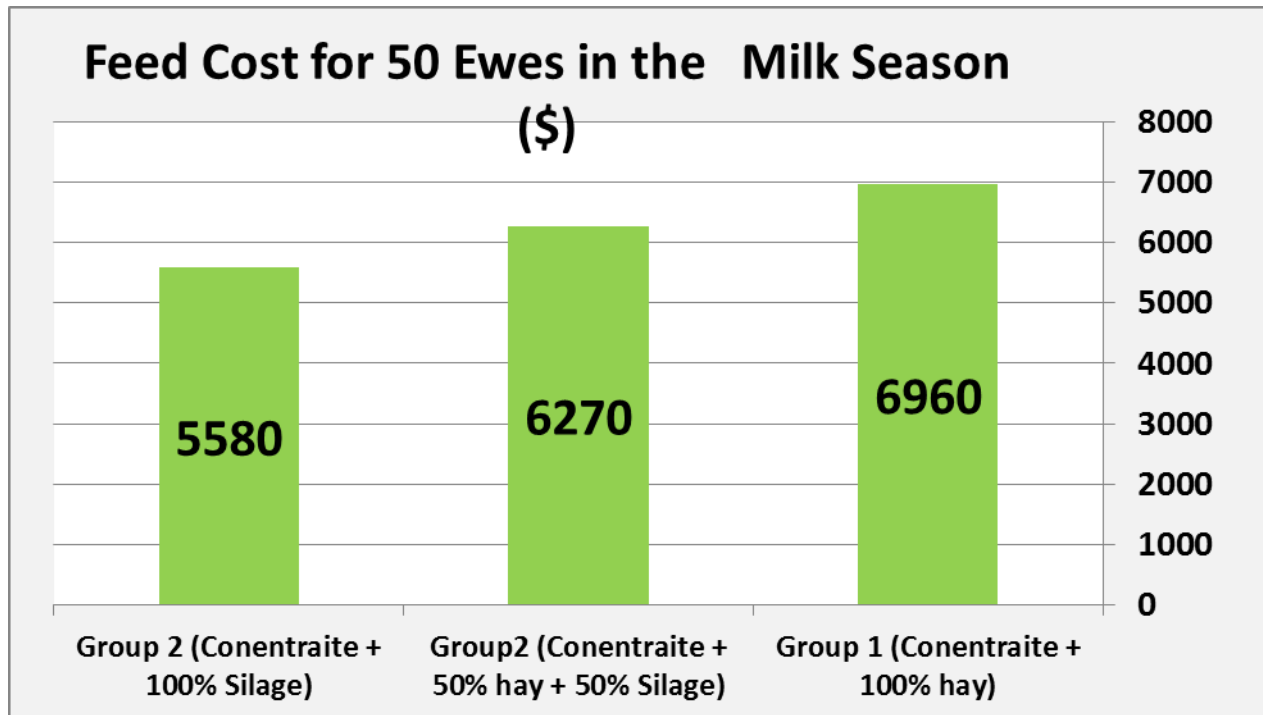
Material and Methods:

Twenty one ewes were divided according daily ration to three groups

- Group 1 (G1): control (concentrate and wheat hay).
- Group 2 (G2): received concentrate, 50% wheat hay and 50% silage.
- Group 3 (G3): received concentrate, and 100% silage.

Several milking tests were made during milking season which normally last to 150 days for the Assaf breed, ewes were hand-milked twice daily (in the morning and the evening) and the total daily milk was recorded. The main objective were to study the effect of different levels of silage as alternative of roughages on Assaf sheep milk quality and quantity as well asto evaluate the economic effect of feeding silage to sheep as alternative to wheat hay.

Results and Discussion



Total milk yield at 150 days by sheep group.

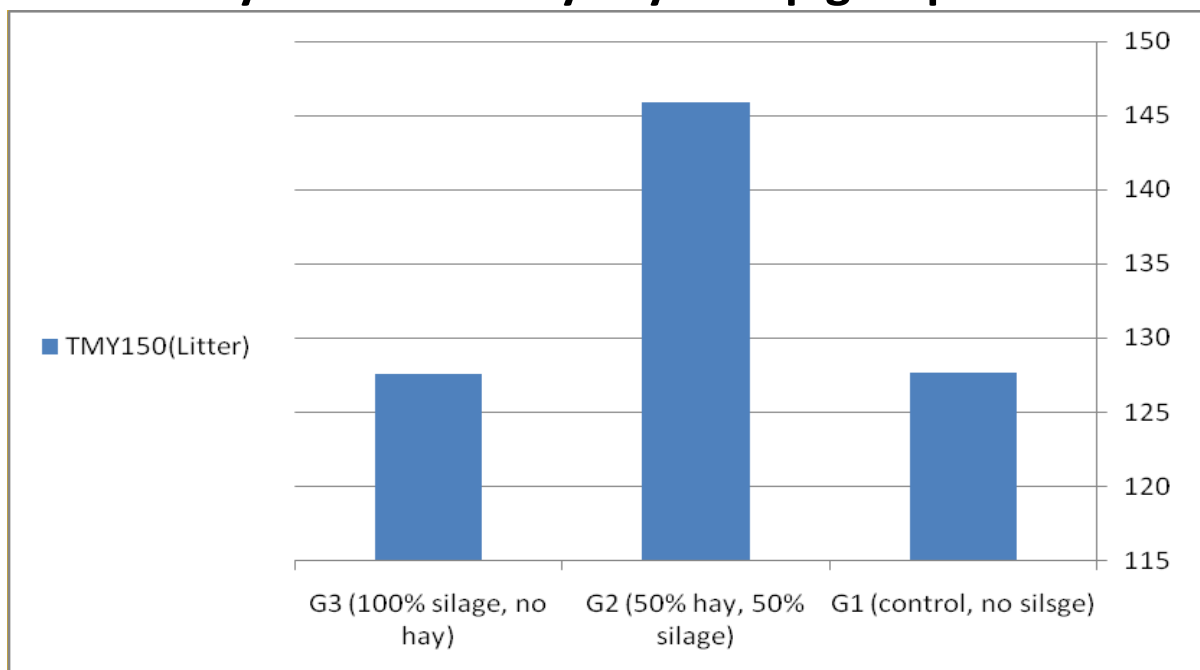
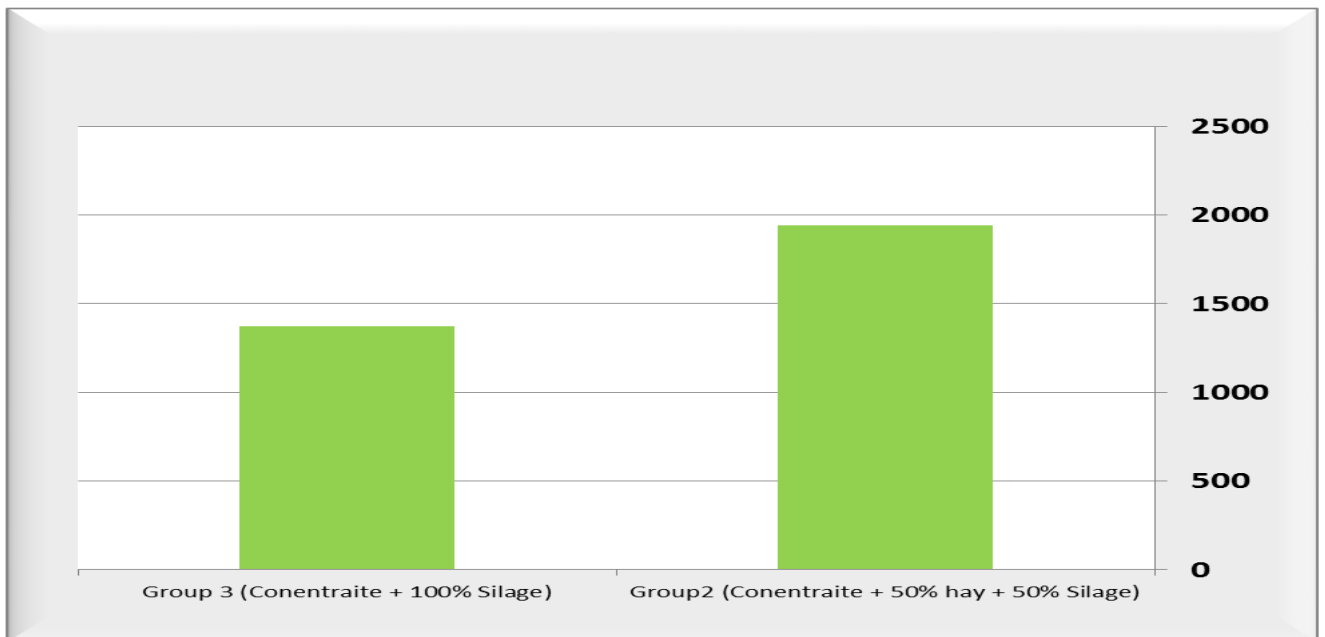
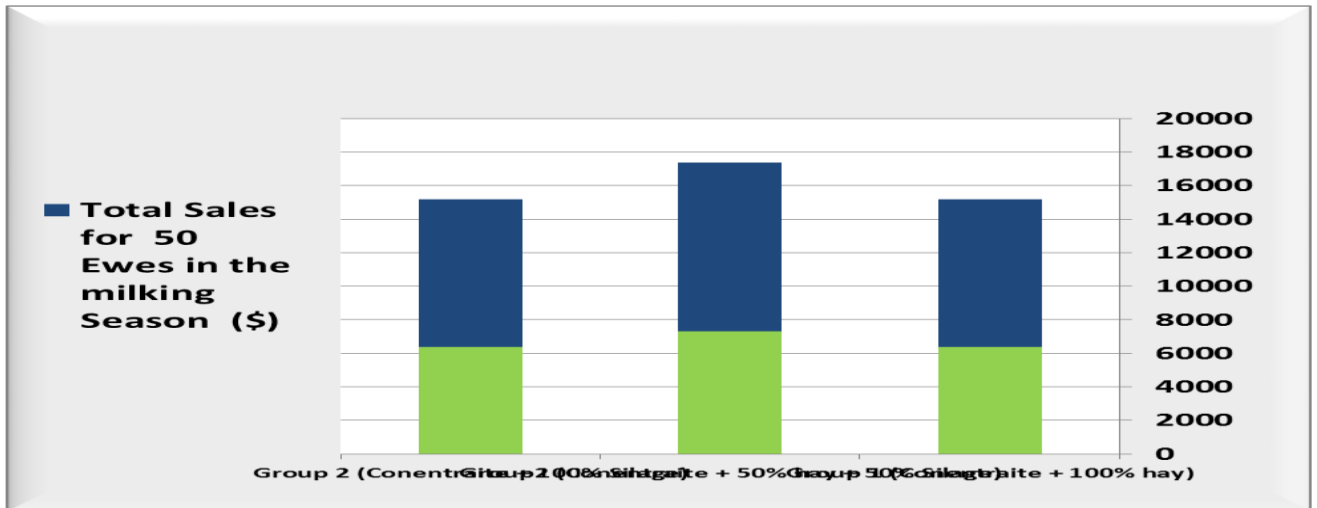


Table (1) Least squares means of milk composition traits (%) by feeding group.

Group ¹	Milk Composition Trait				
	Fat%	Protein%	Non Solid Fat%	Lactose%	Mineral%
1	5.61 ^{a 1.}	3.50 ^a	9.79 ^a	5.53 ^a	1.78 ^a
2	7.32 ^b	3.49 ^a	10.02 ^a	5.74 ^b	4.35 ^a
3	6.66 ^{ab}	3.50 ^a	9.96 ^a	5.68 ^{ab}	1.09 ^a



Conclusions and Outlook

- It was concluded that substitution wheat hay by 50% of silage on lactating Assaf ewes rations increased milk production by 14.2% and reduced feed cost by 10.6 %
- Also it was concluded that replace wheat hay by 100% of silage on lactating Assaf ewes rations did not increase milk production, but it decreased feed cost by 21.3% %.

Recommendations

- We recommend replacing silage by 50% of roughage in the rations of lactating Assaf ewes.
- To improve milk quality it's recommended applying silage as a part of sheep ration.
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