

**Breed variation in milk production between
Awasi and Karrdi sheep**

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Summary

26 Awasi ewes and 21 Karradi ewes were raised in middle part of Iraq for studying the variation in milk production. Milk production was measured at weekly by hand milking and suckling regime till weaning (87 days) , the highest milk yield attained during 10-24 days of lactation period , total and daily milk production during lactation period for Awasi and Karradi sheep were 51.47, 0.58 and 49.42,0.56 respectively.

Literature review

Sheep milk coneder one of the most important economical production as a result of its consumption in a larg quantity , in addition that its very important in early stages of lambs growing . There are many routs for determination milk production in ewes like ; lambs lactating method (Acharya and Bawa 1971) , manual or machinery method (Acharya and Bawa 1971) , hormonal treatment method (Corbett 1968), Gow and Moore 1992, manual milking with lamb lactating (Al-Timimi 1983, Khuzaai 1985) ,and this method which used in this study also used by (Guirgis et al. 1980), and alternative testing method (Othmane and Trabeisi, 2007)

There are many factors effecting milk production like , breed, dam age, sex of lamb, dam weight, lambing weight, ewe

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nourishment during the last stage of pregnancy, number of the lamb that lactating by the dam, lactating system and the ewe nourishment during the lactating stage, (Louca 1972, Wilmut et al. 1990, Snowden and Glimp 1991, Almahdy et al. 2000, Rupp et al. 2003, Sawalha et al. 2005, Cringoli et al. 2008.)

This research will study the variation in milk production due to breed difference .

Milk production varied according to the breed of sheep and cross bred, Louca 1972, observed that Cyprus sheep (wide tail) and Quos had a milk production 190.4, 267.9 kgm. respectively during a lactating period about 178.0 and 198.0 days respectively .

Lawlor et al. 1974 showed that milk in Ques and Awasi had a significantly higher milk production than that in fatty tailed Cyprus sheep ($p < 0.01$).

Doney et al. 1981, showed that the breed of the ewe have a significant effect in all the weeks of milk production , so the milk production of cross East Friesian land more than that of Scotch black face and the lamb breed effect significantly on the milk production during the first five of the six week of lactating season , and the dam of the cross bred lamb have a milk production more than that obtained from the pure bred Scotch black face.

Also Aboul-Nage et al. 1981 recorded a differences in milk production between Osemi, Rahmani and Bargi sheep breed . Kishove et al. 1983 observe the milk production in Avivastra and Avikalin during a period of 92 days , and they were 41.36 and 43.52 kgm respectively .

Al-Timimi 1983 said that the milk production during the lactating period in Arrabi sheep was 66.45, while Khuzaai 1985 showed the production of the same breed was 50.77 kgm.

Jaitner et al. 2006 showed in his study on Gambia Dwarf goats the average daily milk offtake was 0.18 during a period of 127 days.

Morrissey et al. 2007 recorded 82.7kgm milk producing during a period of 120 day in a selected ewes for dairying from existing population of sheep in Australlia.

Materials and Methods

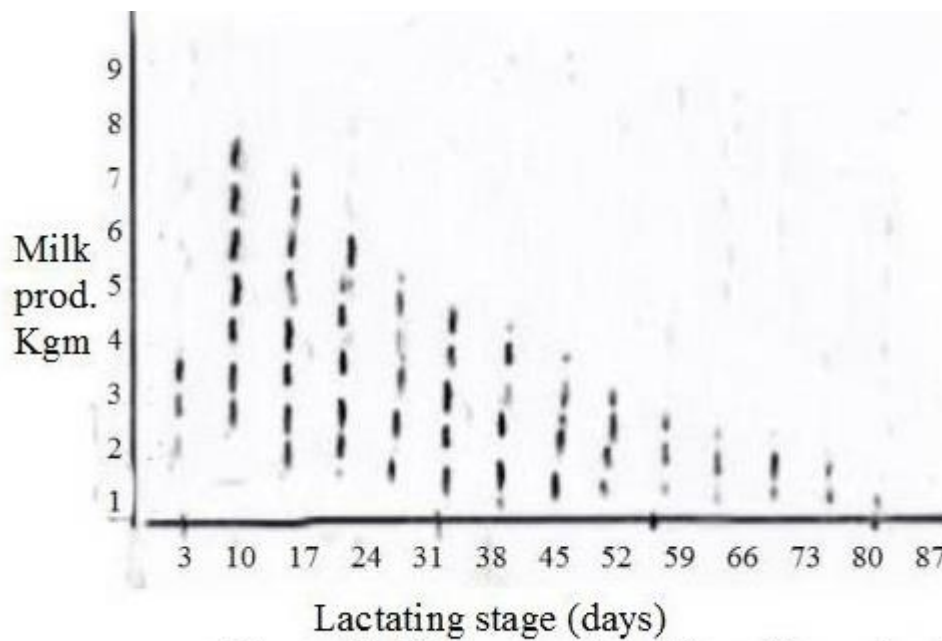
The study raised on two kind of Iraqi sheep breed ; Awasi which habituates to live in middle part of Iraq and the Karradi sheep which habituated the north part of Iraq, tow herds consist of 26 Awasi dam and 21 Karradi dam had brought to middle part of Iraq for studying the performance and livability of each type for the new environment and kept with uniform feeding and environmental condition .

After parturition the lambs kept with their dams for three days and also to be sure that the lambs took the colostrums , the lambs weight through the first 12 hours after parturition .

The measurement of milk quantity production start from the third day of parturition and the procedure of milk production measurement continue weekly while the ewes were milked manually and recorded the milk quantity , and then “after that” the lambs released with their dams for half an hour for lactation and “to” evacuate the udder from the milk, and the milk quantity which had been taken by the lamb was measured by a counting the differences in lamb weight before and after lactation, and this process was repeated at morning and evening once weekly . The quantity of daily milk production was calculated by: quantity of milk milked at morning + quantity of milk sucking at morning + quantity of milk milked at evening + quantity of milk sucking at evening .

Results and discussion

Figure (1) shows the distribution of milk production during a period of 87 days (weaning period).



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Figure (1) The mean of weekly milk production

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Table (1): The mean weekly and daily milk production of Awasi and Karradi sheep

Day of lactation	Awasi	Karradi
3	3.06 ± 0.07	2.81±0.08
10	9.17 ± 0.20	8.64±0.22
17	7.86± 0.02	6.78±0.22
24	6.23± 0.13	5.62±0.14
31	5.45±0.17	4.80±0.19
38	4.12±0.11	3.79±0.12
45	3.46±1.10	3.11±0.12
52	2.84±0.10	2.64±0.11
59	2.48±0.11	2.50±0.12
66	2.06±0.08	2.07±0.09
73	1.75±0.08	1.81±0.09
80	1.40±0.07	1.49±0.08
87	1.41±0.20	1.16±0.22
Daily production	0.58±0.01	0.56±0.01
Total production	51.47±1.12	49.42±1.21

These results were more than that found by Sahni and Tiwari 1975 in MalBara and Jokla and Jagralasy, 45.3, 41.46, 36.30 and respectively, with a period of 90 days, and also more than that found by Kishore et al. 1983, in Avivastra and Avikalin sheep their milk production were 41.36 and 43.52 respectively in a period of 92 days lactation, while milk production was lower than that found by Al-Timimi 1983 and Khuzaai 1985 about 21.09 and 5.02 kgm respectively , and that due to unfit comfortable environment and nourishment during lactation state.

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The highest milk production recorded after 10 days starting of lactation as seen in figure 1, and this result similar to that which showed by Hernandez and Hohenboken 1979, Cowan et al. 1981, Al-Timimi 1983, Khuzaai 1985 . The lowest milk production recorded after 32 days after parturition , while Timimi 1983 and Khuzaai 1985 found the lowest point in milk production recorded after 52 days after parturition.

Awasi ewes have a more milk production than that in Karradi ewes and the difference was significance ($p < 0.01$), in milk production after 17 and 24 days after parturition and the difference was significant ($p < 0.05$), in milk production after 3,31,38,45 and 52 days after parturition and showed no significant result in the reminder week production, and this agreed with Al-Timimi 1983, Khuzaai 1985. The overall milk production in Awasi and Karradi were 51.47 and 49.42 kgm respectively , while the mean of daily milk production were 0.58 and 0.56, and the differences didn't reach the significance level , and these result agreed with Owen 1975 and Marrogenis 1982.

From data above the conclusion arise that Awasi sheep have a better ability for acclimatization in the middle part of Iraq , so the recommendation in case the existence of the desire for breeding the Karradi sheep in the middle part of Iraq is better to crosses this breed with Awasi breed , and also there is a opportunity for studying the marked gene which indicate the production and reproduction ability for the most important three breed of sheep in Iraq (Al-Samarrae 2006) .

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