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SOME ECONOMIC CHARACTERS OF AWASSI SHEEP IN IRAQ

By

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SUMMARY

Records collected on the Awassi flock raised at Abu-Ghraib experiment farm during four lambing seasons were analysed to study factors influencing lambing percentage, mortality rate and birth weight of sheep. Results obtained can be summarized as follows :

(1) Mortality rate of animals from birth till 42 months of age was on the average 12%. Month as well as age of animal were the main factors affecting losses in sheep.

(2) Lambing percentage in this flock was found to be 110 which is rather low. Ewes served early in the mating season gave more lambs than those mated later.

(3) The birth weight of Awassi lambs varies according to sex and type of birth. The average birth weight for single male, single female, twin male, twin female were 10.4, 9.8, 9.1, 8.7 pounds, respectively. Mature males were heavier than females and the latter group reach practically their mature weight at 2—3 years of age.

INTRODUCTION

Sheep raised in Iraq belong to the fat tailed coarse wool group and are maintained for mutton, wool and milk production. The estimated number of sheep in Iraq comes to 10 million heads, although the Ministry of Planning census in1958shows that sheep population in the country comes to 5,600,000. This estimate, however, does not include nomadic and some semi-nomadic flocks. Besides that, some farmers give figures below actual ones. Most of the farmers in Iraq raise sheep, and the majority of nomadic tribes depend mainly on sheep as the main source of their income.

Although sheep is the most important animal in Iraq, yet information on economic characteristics of sheep is very scanty. This analysis was therefore undertaken to throw some light on important traits of the Awassi sheep which accounts for about 2/3 of the sheep population in Iraq. Factors influencing lambing percentage, mortality and weight of sheep were investigated. Such knowledge will help in planning schemes for improving sheep in the country.

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MATERIAL AND METHODS

Data collected on the Awassi flock raised by the animal breeding division at Abu Ghraib experiment farm, which is located obout 15 miles from Baghdad were used in this report. The number of animals included in the analyses came to 2096 which were born during four seasons between 1959 and 1962.

The flock was established 25 years ago with the purpose of producing well bred rams to be distributed to the farmers in order to grade up their poor flocks. Selection in the flock has been practiced for purity of white body colour with red head and for important economic traits i.e. twinning, fleece weight and mutton qualities.

Animals are maintained in the station under a higher standard of feeding and management compared to the rest of the flocks in the whole country. Mating starts during May, while the majority of lambs are dropped during November and December. Animals are sheared once a year during April. Although sheep graze on good pasture when available, yet they are given about one pound of concentrates daily during the mating and lambing seasons. The concentrate mixture used is composed mainly of barley with some cotton seed meal.

TheAwassi breed is white in colour with a brown or red head and about 15%of the animals have coloured fleece. Legs are usually covered with white hair and males have long spiral horns while the females either have short horns or are completely hornless. The breed is mainly a farm sheep, but some flocks migrate, especially those which are located near the desert regions. The majority of the breed, however, is concentrated in the middle and some of the northern plains of Iraq.

RESULTS

Mortality rate of lambs :

Effect of year, sex, age of the lamb, month and type of birth on mortality were investigated to evaluate the main causes of losses in the flock. Mortality was studied from birth till animals were 42 months of age.

Effect of year and sex :

Table (1) was prepared to show mortality rate in different years as well as for different sexes.

It can be observed from table (1) that losses decreased from one year to another and it was the lowest during the last season studied. Mortality rate for males was very close to that of females and differences between the two sexes in this respect was not statistically significant. Our results are in accordance with those reported bv Phillips and Dawson (1940) and Ragab el al (1954), studying this problem in the U.S.A. and U.A.R., respectively.

TABLE 1.— **Effect of Year and Sex on Mortality Rate.**

Year	Sex	No. of Births	No. of Deaths	Losses %
1959-1960	Male	245	47	19.2
	Female	198	43	21.7
1960-1961	Male	321	35	10.9
	Female	242	26	10.7
1961-1962	Male	304	34	11.2
	Female	255	27	10.6
1962-1963	Male	274	18	6.6
	Female	248	20	8.1
Total	Male	1153	134	11.6
	Female	943	116	12.3

The overall mortality in the present report is lower than that reported by other workers studying different breeds of sheep. Venkatchalam et al (1949) showed that mortality rate of lambs till weaning age for the Cotswold, Oxford, Hampshire, Southdown and Shropshire breeds ranged between 18 and 42%. Ragab et al (1954) studying the losses among Ossimi and Rahmani sheep in Egypt from birth till weaning was on the average 10%. It should be noted, however, that estimates on the Awassi sheep were from birth till 3.5 years of age. Of course the gradual decrease of mortality rate from one season to another denotes to the improvement of feeding and management of the flock.

Effect of Age :

Table (2) shows the effect of the age of the lamb on mortality rate of each age group, from birth till 42 months of age.

It is evident from table (2) that most of the losses occur during the first month of age, that being 34.0% of the total mortality. It can be seen also that losses decreases as the age of animals advances with few exceptions. About 54% of the losses took place before weaning at four months of age, while about three quarters of the losses occured during the first year of age.

TABLE 2.—**Effect of Age on Mortality Rate.**

Age Group	Losses (No.)	Losses %	Age group Months	Losses (No.)	Losses %
1st. 15 days.	54	21.6	12	9	3.7
2nd. 15 days	31	12.4	15	21	8.4
2 months	25	10.0	18	5	2.0
3 months	18	7.2	24	14	5.6
4 months	7	2.8	30	15	6.0
5 months	15	6.0	36	7	2.8
6 moths	11	4.4	42	4	1.6
9 months	14	5.6			

Naturally, younger animals are supposed to be weaker and probably more susceptible to particular diseases than elder ones. Unfortunately, it was not possible to study the causes of losses in lambs, but the available veterinary records indicate that enteritis and pneumonia are probably the main diseases effecting suckling lambs.

Effect of Month :

Table (3) shows the mortality rate of lambs in the flock during the differen months of the year for the seasons studied.

TABLE 3.—**Effect of Month on Mortality Rate.**

Month	Losses (No)	Losses %	Month	Losses (No)	Losses %
January . . .	36	14.4	July	7	2.8
February . . .	27	10.8	August	8	3.2
March	17	6.8	September . . .	5	2.0
April	12	4.8	October	4	1.6
May	16	6.4	November . . .	46	18.4
June	12	4.8	December . . .	60	24.0

Studying this table indicates that 67.6% of the losses occur during November, December, January and February. This is probably due to the fact that about 90% of the lambs are dropped during November and December and such lambs reach the weaning age after February. In other words, young lambs are in the critical stage between November and February when

mortality rates are the highest. The cold weather during the winter months coupled with the great differences in atmospheric temperature between day and night may be also responsible for the high losses during these months, since these are the predisposing reasons for either pneumonia and entritis which cause most of the losses.

Effect of Type of Birth :

During the four seasons studied, 39 twin lambs died out of a total number of 190 twins born bringing the mortality rate in this group to 20.5%. Losses in single lambs did not exceed 12.0%. Differences between single and twins in this respect were statistically significant (0.05 probability). Results on Awassi sheep are not in agreement with that reported on Egyptian sheep by Ragab et al (1954) who found that losses among single and twin lambs came to 11.5 and 11.6%. respectively. However, Venkatchalam et al (1949) concluded that losses for twins were significantly higher than that for single lambs, while Phillips and Dawson (1946) found no consistent differences in the ability of single and twin lambs to survive.

Twinning in Awassi She ep :

Number of ewes lambed, number of lambs born as well as lambing percentage are presented in table (4).

TABLE 4.—**Lambing Percentage**

Season	No of Ewes	No. of lambs born	Lambing
1959-60	413	452	109.4
1960-61	495	563	113.7
1961-62.	517	559	108.1
1962-63	481	522	108.5
Total and Average . .	1906	2096	110.0

Lambing percentage for the Awassi sheep studied came to 110 for the four years studied, although there was little variation between years in this respect. Ragab and Asker (1954) studied this problem in Egyptian sheep and found lambing percentage in the Ossimi breed to be 120%. Twinning percentage in non fat tailed sheep was reported to b more than that found for sheep in the Middle East (Chapman and Lush, 1932, Johansson and Hansson, 1943 and Kammlade, 1955).

Effect of Time of Mating on Lambing Percentage :

To study the influence of time of mating on lambing percentage, date of lambing for each animal was recorded and the scale was then moved back 154 days to get the approximate date of mating. Results obtained are shown in table (5) in which the class interval is fifteen days. Although ewes mated at the beginning of the season produced more lambs than those served later, the differences are not pronounced. However, investigators in other countries, Ragab and Asker (1954), Johansson and Hansson (1943), and Hammond (1944) reported that the incidence of twinning is greater in the first half of the mating season.

TABLE 5.—**Effect of Time of Mating on Lambing Percentage**

Time of Lambing	Lambing Percentage
16/5-30/5	113.8
1/6-15/6	112.5
16/6-31/6	109.4
1/7-15/7	108.6
16/7-30/7	109.0

Birth Weight :

Birth weight of single and twin lambs of different sexes are presented in Table (6).

TABLE 6.—**Birth Weight of Lambs**

Type of birth and sex	Number of lambs	Average in pounds
Single male	868	10.4 ± 1.50
Single female	839	9.8 ± 1.43
Twin male	198	9.1 ± 1.37
Twin female	178	8.7 ± 1.36

Differences between single male and single females in the present work was 0.6 pound while in the case of twin lambs males were 0.4 pound heavier than female lambs. Differences mentioned before, lack statistical significance and values were 0.086 and 0.031, respectively. The same trend was found comparing twin lambs with single ones belonging to the same sex. This trend as well as the superiority of single lambs over twin lambs in birth weight were reported by different workers in various countries (Asker et al 1952, Phillips and Dawson 1940 and Kammlade 1955).

It is interesting to note that the birth weight of the Awassi sheep in Iraq is heavier than that reported on Egyptian sheep (Asker el al 1952). The average birth weight for the Ossimi sheep irrespective of sex and type of birth was 8.3 pounds compared to 9.5 pounds for the Awassi sheep. The birth weight of Suffolk and Shropshire sheep as reported by Ensminger et al (1943) was also lighter than that found in the present work for Awassi.

Weight at different Ages :

All animals in the flock were weighed in March, 1963 to the nearest 0.25 pound and were grouped into different age classes according to date of birth Table (7) shows the average weight of animals studied with the average age of each group. Females and males available for this study came to 678 and 189 animals, respectively. Of course number of males and age groups were limited because most of the rams are kept only to breeding age, in the station, then distributed or sold to the farmers.

TABLE 7.—**Weight of Sheep at Different Ages.**

Females			Males		
Age Group (Mo)	No.	Mean (lbs)	Age Group (Mo)	No.	Mean (lbs)
13	200	80.2 ± 15.1	16.0	183	109.7 ± 21.0
25.5	133	93.1 ± 16.1	27.5	86	140.5 ± 16.0
36.5	103	96.6 ± 15.4	—	—	—
49.5	91	99.5 ± 13.8	55	20	151.1 ± 20.1
60.0	66	100.2 ± 14.3	—	—	—
73.0	28	106 ± 18.6	—	—	—
86.0	57	109 ± 616.	—	—	—

Examining the previous table indicates that males exceed females at comparable ages in weight. Moreover, ewes increased in weight up to 1 years, the oldest year studied, although the increase after the second year was quite slow. The annual report of the animal husbandry division at Abu Ghraib in 1958, include the average weight of Awassi sheep at different ages and estimates reported are close to that found in the present work.

DISCUSSION

This work included the study of three economic characters in Awassi sheep i.e. twinning, mortality and weight of animals, using the records collected on the flock at Abu Ghraib during four lambing seasons. Number of lambs that survived till marketing age as well as the weight of such lambs determine the profit of the sheep farmer in Iraq, since wool is of little economic value compared to mutton.

Results showed that lambing percentage in the Awassi breed is very low being on the average 110. It should be realised, however, that the flock studied is kept under favourable conditions compared to the commercial flocks in the country. The author collected information on 50 flocks distributed on the southern and middle parts of Iraq and the preliminary analyses indicate that not more than two ewes produce twins in every 100 lambings.

Estimates reported by Johensson and Hansson (1943), Desi and Winters (1951) and Ragab and Asker (1954), on the heritability of twinning showed that it is rather low. In other words, phenotypic selection will not lead to a rapid improvement in this particular trait. It seems, therefore, that raising the feeding standard especially before mating season will increase the lambing percentage. Flushing which is a routine procedure in all sheep farms in many countries, is not known to the average farmer in Iraq. Providing the breeders with concentrates at a reasonable price as well as extention service will definitely play a useful role in improving sheep husbandry in the country.

The mortality rate for Awassi sheep is lower than that reported by other workers in different countries for various breeds of sheep. The main factors responsible for increasing losses in Awassi sheep were age of lambs and month of the year. Mortality rate can be reduced if young lambs before weaning were put under a higher standard of management and provided with sheds to be protected from cold wind during winter nights. Of course, improving sanitation, feeding and housing will definitely reduce losses.

Since sheep raising is an important enterprise in Iraq, either in small or large farms, more attention should be given to improve the productive abilities of this animal. Various problems should be studied, not in experimental farms, but on flocks owned by the average farmer. Data collected on commercial farms denote to the fact that such flocks are inferior to the Awassi flock studied in twinning, mortality and weight of animals. It seems that inadequate feeding is the main factor responsible for the low production of sheep in Iraq.

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بعض الصفات الاقتصادية للأغنام العواسى فى العراق

الملخص

حللت سجلات الأغنام العواسى لقطيع مزرعة أبى غريب احصائيا ، لدراسة الظروف البيئية التى تؤثر على بعض الصفات الاقتصادية لهذا النوع من الأغنام واتضح من هذه الدراسة ما يلى : ـ

(١) تبلغ نسبة النفوق فى الأغنام العواسى من الولادة حتى عمر ٤٢ شهر ١٤٪ ، واتضح بأن شهور السنة وكذلك عمر الحملان لها أثر معنوى على نسبة النفوق فى الحيوانات .

(٢) أن نسبة انتاج الحملان من هذا القطيع يبلغ ١١٠٪ واتضح أن تلقيح الأغنام مبكرا يؤدى الى زيادة هذه النسبة .

(٣) اتضح أن وزن الميلاد للأغنام العواسى يتباين تبعا للجنس وتبعا لما اذا كانت الحملان فردية أو توأمية . كما قدرت أوزان الذكور والاناث البالغة فى أعمار مختلفة .