

**A STUDY ON INCREASING LAMBING RATE
OF SHEEP THROUGH MANAGEMENT**

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The purpose of the present study is to investigate the possibility of increasing lambing rate by about 50% every year through a new management practice which allows a three lambing seasons every two years instead of one per year. The effects of raising three lamb crops every two years rather than one crop per year on body weight, lambing rate per season and lamb mortality rate were studied.

There were no serious significant effects on body weights between lambs born in winter, summer and spring lambing seasons. The total number of lambs born in the three lambing seasons was 52 with mean lambing percentage of 110.6 per season. The mean lamb mortality rate for the three lambing seasons was 9.6% per season.

The results obtained in the present study offer considerable hope of success to have three lambs per ewe in two years instead of two.

The mating season in U.A.R. usually takes place from the month of May to the end of July inclusive so that lambing starts from October to the end of December. This may be due to the fact that better climatic conditions and abundance of Egyptian clover (*Trifolium alexandrinum*) during this time of the year encourages growth of lambs. Therefore, this normal management practice allows one lambing season only every year. However, it is well known that the increase of lambing rate in the flock improves the net gain profit from sheep raising. It may be possible to increase lambing rate by about 50% every year through a new management practice which allows a three lambing seasons every two years instead of one per year.

It is the purpose of this study to investigate the effects of raising three lamb crops every two years rather than one crop per year on body weight, lambing rate per season and lamb mortality rate.

Materials and Methods

This experiment was carried out in Gimmeza Animal Research Station, Ministry of Agriculture, which is located at the middle of the Delta. The normal farm practice is to arrange mating season from May to July inclusive so that lambing season starts from October to the end of December (winter season).

In the present study the mating seasons were arranged to allow the ewes to raise three lamb crops every two years rather than one crop per year. The time of mating and lambing seasons were arranged as follows to allow a limited lambing season as possible:

Mating season	Lambing season
May and June 1965	October and November 1965 (winter)
January and February 1966	June and July 1966 (summer)
October and November 1966	March and April 1967 (spring)

Lambs born during October and November are referred to as winter born lambs, those born during June and July are summer born lambs and those born during March and April are spring born lambs. Twenty Ossimi ewes were used but 5 ewes were excluded from the experiment after the first lambing season for different reasons.

From November until the end of May the ewes were allowed to graze on Egyptian clover (*Trifolium Alexandrinum*). During summer months sheep used to graze in residues of the different crops. After harvesting, green fodder (Sorghum plants) was also available and clover hay (0.75 kg. per ewe) was supplied when there was scarcity in grazing. At the end of the day the sheep were given about 0.3 kg of concentrates per head (25 parts cotton-seed meal, 25 parts rice polish 20 parts wheat bran, 15 parts corn or barley, 12 parts linseed-oil meal, 2 parts calcium carbonate and 1 part of salt, 5% molasses added).

The Ossimi ewes and lambs were all fed and cared for under nearly similar conditions throughout the experiment. Management practices were also kept as uniform as possible during the two years. All lambs were weighed (to the nearest 0.1 kg.) and ear tagged immediately after parturition, then every month till they reached 12 months of age. Single and twin lambs were used in the present investigation owing to the small number of lambs born in every lambing season. The number of ewes lambing and the number of lambs born in the three lambing seasons are shown in Table I.

TABLE I.—NUMBER OF EWES LAMBED AND NUMBER OF LAMBS BORN FOR THE THREE LAMBING SEASONS

Lambing Season	No. of Ewes	No. of Ewes Lambed	No. of Lambs Born		
			Male	Female	Total
Winter	20	20	8	12	20
Summer	15	13	6	9	15
Spring	15	14	10	7	17

Effect of Body Weight of Lambs

Table 2 and 3 present the mean body weights, standard errors and coefficients of variability of male and female lambs born in the three lambing seasons. Male lambs born in winter season were heavier than those born in summer and spring. The differences were statistically highly significant ($P < 0.01$). Female lambs born in winter were also heavier than those born in the other two lambing seasons but the differences were only significant ($P < 0.05$). Kassab et al (1961) found also that the Barki lambs born in winter were a heavier at birth than those born in the spring but the differences were not significant.

After birth, the body weight of lambs increased until weaning. At weaning (4 months) the differences between body weights of both male and female lambs of the three lambing seasons were not significant. However, Asker *et al.* (1954) reported that Ossimi lambs born in winter were superior to those born during summer in body weight either at birth or at weaning age at Giza. The results obtained in the present investigation could be explained in physiological terms. Bonsma (1939) and Wallace (1948) found in their studies a strong correlation between milk yield of the ewe and growth rate of its lamb. In the present experiment the good care and sufficient feed with green fodder available during summer were reflected in the milk production of the ewe. Moreover, summer in the middle of the delta is within bearable limits.

At yearling age although summer born lambs were heavier yet the differences in body weight of the three lambing seasons were not significant. These results may be due to the fact that summer born lambs were on Egyptian clover and under better climatic conditions during this period. The winter born lambs were at the end of the summer months while the spring born lambs were in cold weather in the middle of the Delta.

The results obtained in the present study offer considerable hope of success to have three lambs instead of two per ewe in two years. This management practice would be possible if good care, dry feeding and green fodder are available in summer months. However, Karam (1959) suggested that lambing in March, April and May should be recommended to those who can afford dry feeding or can grow green fodder in the summer.

TABLE 2. — MEAN BODY WEIGHTS OF MALE LAMBS BORN IN WINTER, SUMMER AND SPRING AT DIFFERENT AGES (IN KG.)

Age	Winter (1965)				Summer 1966)				Spring (1967)			
	No.	Mean kg.	S.E.	C.V. %	No.	Mean kg.	S.E.	C.V. %	No.	Mean kg.	S.E.	C.V. %
At Birth	8	4.1	0.126	8.73	6	2.5	0.22	22	10	2.5	0.18	23.6
4 months	8	20.3	0.99	13.79	6	19.1	2.12	27.07	9	20.5	0.77	10.9
8 months	8	32.8	1.8	15.49	5	26.4	2.77	23.48	9	28.4	1.32	13.02
12 months	8	37.4	1.89	14.30	5	42.4	3.2	16.98	9	36.1	2.02	16.06

TABLE 3.—MEAN BODY WEIGHTS OF FEMALE LAMBS BORN IN WINTER, SUMMER AND SPRING AT DIFFERENT AGES (IN KG.)

Age	Winter (1965)				Summer 1966)				Spring (1967)			
	No.	Mean kg.	S.E.	C.V. %	No.	Mean kg.	S.E.	C.V. %	No.	Mean kg.	S.E.	C.V. %
At Birth .	12	3.4	0.143	14.56	9	2.8	0.148	15.71	7	2.6	0.214	20.27
4 months	12	19.4	0.77	13.92	7	18.7	0.85	12.19	5	20.4	2.03	22.20
8 months	11	29.3	1.18	13.41	7	23.1	1.29	14.72	5	26.1	2.54	21.65
12 months	11	33.1	1.17	11.06	7	37.1	3.90	27.84	5	30.2	2.19	16.22

Effect on Lambing Rate :

From the economical point of view the high lambing rate improves the net gain profit from sheep raising percentages of ewes lambled in every lambing season were shown in Table 4. The mean percentage of the ewes actually lambled in the three lambing seasons was 94.0 which is within the normal limits of the Ossimi sheep.

TABLE 4.—PERCENTAGES OF EWES LAMBLED IN THE THREE LAMBING SEASONS

Lambing Season	No. of ewes	Ewes actually lambled	
		No.	%
Winter	20	20	100
Summer	15	13	86.7
Spring	15	14	93.3
Total & Mean . . .	50	47	94.0

Lambing percentages were 100.0, 115.4 and 121.4 for winter, summer and spring lambing seasons respectively (Table 5). The total number of lambs born in the three lambing seasons was 52 with mean lambing percentage of 110.6. Although the number of lambs is not sufficient enough to give clear cut results yet the results are about the normal lambing rate of the Ossimi sheep. However, Labban et al (1966) reported that the mean lambing rate of Ossimi sheep for 5 years was found to be 115.2 and there was no effect to year or month of lambing on lambing rate.

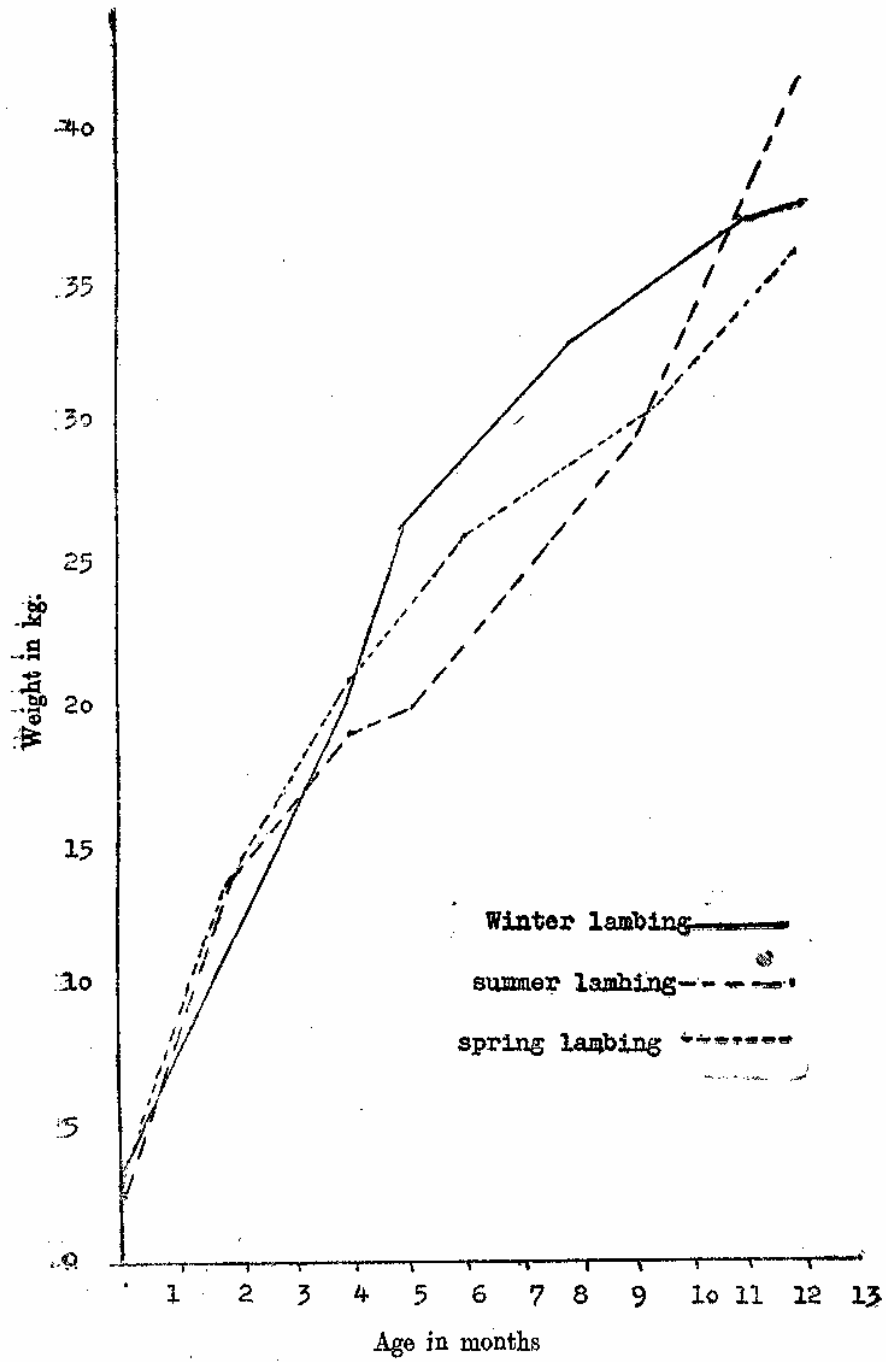


Fig. 1.—Growth curves of the male Ossimi lambs

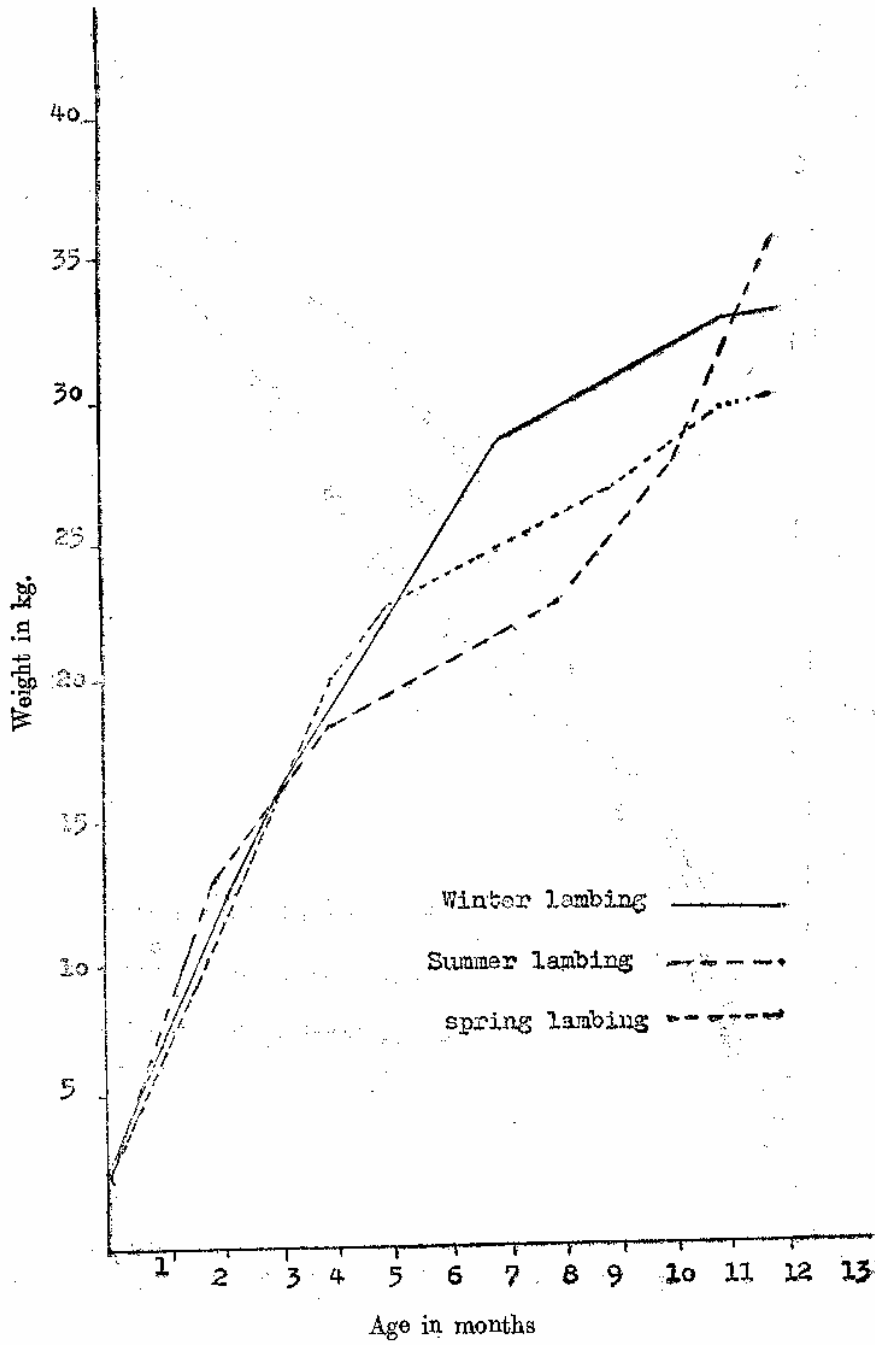


FIG. 2.—Growth curves of the female Ossimi lambs

TABLE 5.—EFFECT OF SEASON OF LAMBING
ON LAMBING RATE

Lambing Season	No. of Ewes lambled	No. of Lambs born	Lambing %
Winter	20	20	100.0
Summer	13	15	115.4
Spring	14	17	121.4
Total & Mean . . .	47	52	110.6

Effect on Lamb Mortality Rate:

Lamb mortality percentages from birth to weaning (4 months) were 0.00, 13.3 and 17.6 for winter, summer and spring lambing seasons respectively. The mean lamb mortality rate for the three lambing seasons was 9.6% (Table 6).

TABLE 6.—EFFECT OF SEASON OF LAMBING
ON LAMB MORTALITY RATE

Lambing Season	No. of lambs born	Mortality (Birth-4 months)	
		No.	%
Winter	20	0.00	0.00
Summer	15	2	13.3
Spring	17	3	17.6
Total & Mean . . .	52	5	9.6

Mortality rate of lambs especially from birth to weaning age at 4 months is of great importance since high mortality rate causes severe economic losses to flock owners. It is therefor evident that information on the effect of different lambing seasons on lamb mortality will aid in bringing down these losses to a minimum.

However, Labban et al (1966) found that the lamb mortality rate of Ossimi sheep from birth to weaning ranged from 7.33% to 20.05%. They also found that the important factor effecting lamb mortality is the birth weight of the lamb. Although the number of lambs in the present study is not sufficient yet the lamb mortality rates were within the normal limits.

It is, therefore essential owing to the results obtained in this investigation to tackle this problem comprehensively. It is planned to study this problem with large number of ewes of different breeds especially Merino sheep at various parts of the country representing various climatic conditions. Moreover, it is decided to investigate the effect of repeated treatment in successive years on the prolificacy of the ewe and detailed results will be reported in the future.

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دراسة زيادة النسبة المئوية للمواليد في الأغنام نتيجة لتغيير نظام الرعاية

فتوح اللبان ، عزيز غالى

المخلص

الفرض من هذه الدراسة هو بحث العمل على زيادة النسبة المئوية للأغنام بحوالى ٥٠٪ كل سنة نتيجة لتغيير الرعاية بحيث يمكن الحصول على ثلاثة مواسم ولادة كل سنتين بدلا من موسم ولادة واحدة كل عام . وقد درس تأثير ذلك على وزن الجسم للحملان والنسبة المئوية للمواليد في كل موسم - وكذلك نسبة التفوق في الحملان .

لم يظهر تأثير سييء على وزن الجسم للحملان نتيجة مواسم الولادة المختلفة وكان عدد الحملان التى ولدت في الثلاث مواسم ولادة هو ٥٢ بمتوسط نسبة مئوية للمواليد ١١.٠٦ في كل موسم - وكان متوسط النسبة المئوية لتفوق الحملان في المواسم الثلاثة ٩.٦

أظهرت النتائج امكان الحصول على ثلاثة مواسم ولادة للأغنام الأوسيمي كل سنتين بدلا من موسم واحد كل سنة دون تأثير سييء على الحملان وذلك في منطقة وسط الدلتا .