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Effect of the lambs sex in some growth traits of three different Awassi sheep flocks

تأثير جنس الحملان في بعض صفات النمو لثلاثة قطعان مختلفة من الاغنام العواسية

Ahmed Ali Adhab* Bashar A. Ahmed*
*Lecturer – Animal Production – Agriculture College – Diyala University
ahmed.athab1980@gmail.com basharadh83@gmail.com

Abstract

In this study, 93 Awassi lamb used to find the effect of the sex of lamb in weight from birth to weaning and the weight gain from birth to weaning for three flocks of Awassi sheep (improved flock, not improved flock, breeder flock). It observed the presence outweigh the significant male weight in the fourth month in not improved flock (28.94, 23.61 kg) as well as male superiority over females in weight gain for the third month (6.42, 4.00 kg) and the fourth month (4.79, 3.26 kg).

While non significant effect on the sex of the lambs in the weight and weight gain of the flock is not improved and the breeder flock. The correlations between the weights and weight gain were significant with the exception of a relationship lamb birth weight with the first weight gain, third and fourth. As well as negative for the lamb weight for the first month with fourth weight gain insignificant between weight gain-fourth and the second and third lamb weight and third weight gain and negative with an first weight gain.

Key words: Awassi lambs, Weight, Gain, Improve flock.

المستخلص

أستخدم في هذه الدراسة 93 حمل عواسي لدراسة تأثير جنس الحمل في الوزن من الميلاد الى الفطام والزيادة الوزنية من الولادة الى الفطام لثلاث قطعان من الاغنام العواسي (القطيع المحسن ، القطيع غير المحسن ، قطيع المربي) . لوحظ وجود تفوق معنوي (P< 0.05) لوزن الحملان الذكور في الشهر الرابع في القطيع المحسن (28.94 ، 23.61 كغم) وكذلك تفوق الذكور على الاناث في الزيادة الوزنية للشهر الثالث (6.42 ، 4.00 كغم) والشهر الرابع (4.79 ، 3.26 كغم) . في حين لم يلاحظ وجود تأثير معنوي (P< 0.05) لجنس الحملان في الوزن والزيادة الوزنية للقطيع غير المحسن وقطيع المربي . وكانت الارتباطات بين الاوزان والزيادة الوزنية معنوية (P< 0.05) فيما عدا علاقة وزن الميلاد للحمل مع الزيادة الوزنية الاولى والثالثة والرابعة وكانت سالبة بالنسبة لوزن الحمل للشهر الاول مع الزيادة الوزنية الرابعة وغير معنوية (P< 0.05) بين الزيادة الوزنية الرابعة ووزن الحمل الثاني والثالث والزيادة الوزنية الثالثة وسالبة مع الزيادة الوزنية الاولى .

الكلمات المفتاحية : حملان عواسية ، اوزان ، زيادة وزنية ، قطيع محسن .

Introduction

The importance of intensive programming research to improve genetic breading due to local sheep performance vertical and horizontal is very important to raise production efficiency, the most important traits to provide lambs in marketing age which it growth speed, decreasing mortality and raise the twining rate which consider one of the importance reproduction traits it low inheritance estimated heritability up to 0.04 – 0.11 [1].

Many researcher notice that the ewe weight positive relationship with lamb weight in the birth. [2] showed that Awassi lamb weight at birth tend to raise when mothers weight raised so they found significant effect due to mother weight in there lamb weight at birth.

As well as [3] noted that high significant effect due to ewe weight in lamb weight at birth as the heavy ewe (60 kg or more) produced heavy lambs at birth (4.30 kg) and the lightly ewe (40 kg or less) produced lightly lambs (3.70 kg).

The weight at weaning is one of the important production traits which reflex ewe motherhood viability and efficiency of rearing lambs so that lamb genetic ability to growth during the suckling period, because that is positive correlation with ewe ability to milk production in this stage [4].

The important of weaning weight it was the final result of birth weight adding to it the sum of daily weight gain at the period pre-weaning so it one of the important parametters in the flock production . [5] noted a significant excellence to male comparison with female in Jordan Awassi sheep at birth so the male weight was 4.776 kg and female 4.473 kg . As well as [6] in his study on Awassi sheep that the weight of male and female was 3.53, 3.26 kg respectively, [7] found 4.26 3.61 kg and [8] 4.199 , 4 kg for male and female respectively.

The target of this study is to know the effect of the lambs' sex in the weight and weight gain at three flocks of Awassi sheep.

Materials and methods

This study was conducted at two sites, one of them in the breeding station and improve sheep and goats of the General board of Agricultural Research / Ministry of Agriculture (in Akrkov area 25 km west of Baghdad), and the second field outside the station continued for one sheep breeders (private sector) in Abu Ghraib to study the effect of different breeding system in sex lambs. The study includes three herds of Awassi sheep namely:

1. The first herd (improve herd): 30 Awassi lamb from flock have the ability to produce twins (elected 3-5 seasons to produce a recipe twins) and placed in a private hangar at the station.
2. The second herd (herd is unimproved): 24 Awassi lamb randomly selected from a herd station and placed in a private hangar at the station.
3. The third herd (breeder): 39Awassi lamb randomly selected and placed in a private hangar belonging to a breeder near his home in a nearby pasture.

Lambs breastfed colostrum from their mothers during the first few days after birth, and provided for newborns diet focused especially composed births of (bran, wheat 40%, barley crushed 27%, corn yellow rods 15%, SBM 15%, salt 2% and limestone crunched 1%) rate of 250 g / head / day in the first two weeks after birth with continued breastfeeding lambs from their mothers. Lambs Weight monthly from birth up to weaning and changing the amount of feed every two weeks until weaning, lambs weaned at four months old.

Have undergone all the lambs experience in experiment of health to veterinary supervision, it has dipped lambs once during the duration of the experiment, and vaccinated all the lambs vaccine (Pox-virus Sheep) of the Canadian company against sheep pox vaccine foot and mouth disease FMD disease (Foot and Mouth Diseases) Turkish origin and the vaccine (Enterotoxaemia) bacterial against bacteria clostridium causing fatty intestinal production company (Vetal) Turkish, and to get rid of internal parasites vaccinated lambs against worms hepatic vaccine (Fasinex) produced by Novartis Animal Swiss health vaccine (Fendex 227) against parasites pulmonary and intestinal and hepatic production SADDox- Italia, as well as veterinary surveillance of all lambs during the duration of the experiment to determine the health safety. Lambs are numbered at birth and recorded it weights monthly from birth until weaning (4 months) and calculated the weight gain of births per month by the following equation:

Weight gain (kg / month) = second weight - the first weight

Data were statistically analyzed using the general linear model method (GLM) within [9] statistical program follows the model:

$Y_{il}= \mu + s_i + e_{il}$

As :

Y_{il} : observation j due to the flock i .

μ : overall average to study trait.

s_i : effect of sex lamb (1- male 2- female).

e_{il} : random error which distribute normally with mean equal zero and contrast $\delta^2 e$.

And compared the significant differences between the averages test Duncan (1955) polynomial .

Result and discussion

Through the results prove that the sex of the lamb in improve herd significant effect on the weight at the fourth month (table1) as it outperformed males on females (28.94, 23.61 kg) and this result is consistent with [7] and [10] and [11] and [12] is not in keeping with [13] and the [14] the reason for male supremacy over females in weight at weaning to the effect of sex hormones during growth and development period, as the estrogen works to inhibit the longitudinal growth of the bones of the body while working androgen as builders hormone promotes muscle growth and accelerate the growth of the length of the bone [15].

The weight gain in the same flock outperforming males morally in the third month (6.42, 4.00 kg) and the fourth month (4.79, 3.26 kg) and agrees with [16] and [17] is not in keeping with [18] and interpret these results to the superiority of the male on female weights due to genetic ability for males to grow and develop faster than the ability of females and shows the superiority early during embryonic stage of growth and also increase the size of the cotyledons in males.

As well as, not improved flock, there was a significant effect of the sex of the lambs on all traits, as well as the case for the breeder flock (Table 2 and 3).

Table 1. Effect of sex lambs in weight and weight gain of improve flock of Awassi lamb (means ± SE)

	Sex	
Treatment / Trait	Female No. =13	Male No. = 17
Lamb weight at birth	3.92 ± 0.15 a	4.23 ± 0.19 a
Lamb weight at 1 month	10.63 ± 0.58 a	12.01 ± 0.60 a
Lamb weight at 2 month	16.34 ± 0.95 a	17.72 ± 0.92 a
Lamb weight at 3 month	20.34 ± 1.17 a	24.14 ± 1.43 a
Lamb weight at 4 month	23.61 ± 1.42 b	28.94 ± 1.90 a
Weight gain at 1 month	6.71 ± 0.50a	7.77 ± 0.56 a
Weight gain at 2 month	5.71 ± 0.43 a	5.70 ± 0.57 a
Weight gain at 3 month	4.00 ± 0.85 b	6.42 ± 0.65 a
Weight gain at 4 month	3.26 ± 0.39 b	4.79 ± 0.65a

Different letters within the same row indicate a significant difference

Table 2. Effect of sex lambs in weight and weight gain of non improved flock of Awassi lamb (means ± SE)

Treatment / Trait	Sex	
	Female No. = 10	Male No.= 14
Lamb weight at birth	4.10 ± 0.33 a	4.10 ± 0.09 a
Lamb weight at 1 month	12.75 ± 0.57 a	13.35 ± 0.62a
Lamb weight at 2 month	19.35 ± 0.84 a	19.46 ± 0.91 a
Lamb weight at 3 month	22.35 ± 1.05 a	23.46 ± 1.31 a
Lamb weight at 4 month	25.25 ± 0.94 a	27.10 ± 1.61a
Weight gain at 1 month	8.65 ± 0.68a	9.42 ± 0.58a
Weight gain at 2 month	6.60 ± 0.67 a	5.92 ± 0.39a
Weight gain at 3 month	3.00 ± 0.69a	4.00 ± 0.52a
Weight gain at 4 month	2.90 ± 0.49 a	3.64 ± 0.38a

Same letters within the same row indicate no significant effect

Table 3. Effect of sex lambs in weight and weight gain of grazing flock of Awassi lamb (means ± SE)

Treatment / Trait	Sex	
	Female No.= 14	Male No. = 25
Lamb weight at birth	3.83 ± 0.22 a	4.05 ± 0.37 a
Lamb weight at 1 month	10.97 ± 0.63a	11.37 ± 0.63 a
Lamb weight at 2 month	16.90 ± 0.89 a	17.89 ± 0.78a
Lamb weight at 3 month	21.96 ± 1.27 a	23.78 ± 0.98 a
Lamb weight at 4 month	26.22 ± 1.31 a	29.92 ± 1.18 a
Weight gain at 1 month	7.14 ± 0.55 a	7.32 ± 0.58 a
Weight gain at 2 month	5.93 ± 0.38 a	6.51 ± 0.28a
Weight gain at 3 month	5.06 ± 0.51 a	5.89 ± 0.43a
Weight gain at 4 month	4.26 ± 0.74 a	6.14 ± 0.90 a

Same letters within the same row indicate no significant effect

Table (4) shows the links between body weight and weight gain was highly significant between birth weight and the the other body weights except the weight gain at the age of 1, 3 and 4 months were links between the lambs weight at one month of age with the other body weights high moral except the fourth weight gain was the relationship between them is negative, while the relationship between lamb weight at the age of two months with the other weights of the lambs were significant except for the weight gain at fourth month that their relationship was not significant with the second month of lamb weight.

As for the relationship lambs weight at the age of three months, with weights of lambs were highly significant except for its relationship with weight gain for the fourth month, and the link between lamb weight at the age of four months and weight gain of the fourth-month was high morale, while the link between weight gain for the first month with a second and third month was significant and with the fourth month counterproductive, and the second weight gain high significant compared with the third and fourth.

Table 4. Link between the weights of the body and weight gain of Awassi lambs

Weight gain 4	Weight gain 3	Weight gain 2	Weight gain 1	Lamb weight 4	Lamb weight 3	Lamb weight 2	Lamb weight 1	Trait
0.073	0.097	*0.234	0.053	**0.319	**0.340	**0.404	**0.407	Birth weight
-0.081	*0.238	**0.371	**0.933	**0.605	**0.763	**0.892		Lamb weight 1
0.064	**0.310	**0.750	**0.817	**0.767	**0.878			Lamb weight 2
0.113	**0.728	**0.689	**0.701	**0.892				Lamb weight 3
**0.550	**0.672	**0.693	**0.536					Lamb weight 4
-0.117	*0.222	**0.314						Weight gain 1
**0.251	**0.294							Weight gain 2
0.133								Weight gain 3

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