

Short Communication

Dam age and weight, lamb sex, breed and kidding type effects on the mortality of local, Turkish Awassi and cross bred

Authors:

Jayel Elia V

Institution:

Animal Production
Department,
College of Agricultural,
University of Baghdad,
Iraq.

Corresponding author:

Jayel Elia V

ABSTRACT:

The research was done at the sheep and goat research station which belong to the Public Authority for Agricultural Researches – Ministry of Agriculture in Abu Ghraib area at Baghdad-Iraq, we have used the records of 220 new born lambs (82 local Awassi, 84 Turkish Awassi and 54 Turkish crossbred) of the production season 2014-2015. The data were analyzed using Chi square test in the statistical program SAS. The results showed that the overall average rate of loss from birth to weaning was 16.36%, and the impact of dam age was significant ($P < 0.01$) in the proportion of birth loss until weaning. The mortality percentage was higher at 2 and 4 years of dam ages (25.40% and 17.31%), respectively. Furthermore, the type of birth significantly affected ($P < 0.05$) the mortality percentage, having reached 14.45 and 23.40% for the birth of the individual and twins respectively. The percentage mortality varied significantly ($P < 0.01$) as a result of difference in kidding statuses, it was 12.02% when there was a natural birth, and 37.84% when there was a dystocia. It was clear that the weight of dam at kidding and lamb weight at birth were statistically significant ($P < 0.01$) on lambs mortality percentage, while there were no significant differences between breeds and between the sexes (male and female) on lambs mortality percentage. It was noticed that the most important lambs mortality percentage reasons increased in weak, meager, dystocia and poisons statuses. The conclusion from this study was that the mortality percentage of lambs from birth until weaning was too high and significantly effected on many fixed factors, studying mortality reasons would reach us to the connect rightly and healthy in order to reduce the mortality and subsequently increasing the economic material return from sheep rearing.

Keywords:

Mortality, Turkish Awassi, Cross bred.

Article Citation:

Jayel Elia V

Dam age and weight, lamb sex, breed and kidding type effects on the mortality of local, Turkish Awassi and cross bred

Journal of Research in Ecology (2018) 6(1): 1528-1533

Dates:

Received: 30 Jan 2018 **Accepted:** 28 Feb 2018 **Published:** 07 April 2018

Web Address:

[http://ecologyresearch.info/
documents/EC0539.pdf](http://ecologyresearch.info/documents/EC0539.pdf)

This article is governed by the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which gives permission for unrestricted use, non-commercial, distribution and reproduction in all medium, provided the original work is properly cited.

INTRODUCTION

Sheep is the most popular and famous ruminant animal in Iraq, with plays a major role in economic animal recourses by supplying all kinds of products such as milk, meat, wool, skins and fertilizer. Awassi sheep is considered as the most popular breed comparing other local breeds, reporting to be about 58% of other Iraqi sheep breeds which is estimated to be 6772.17 thousand sheep heads. Due to hot climate and less rain during the months of April - November in Iraq, the breeders suffer from poor natural pastures and poor feeding quality to fed their animals. So, they had to follow the classic method by travelling with their sheep through those poor pasture for grazing, and the sheep don't get their nutrient requirements for maintenance and production, and that was reflected on their healthy and low milk production, for those reasons the new born cannot get any useful feed (Oldham *et al.*, 2011).

Sheep rearing in Iraq are done for two main purposes which are meat and milk, the breeder economic benefit depend on weaned new born production and milk production, each of them contributed 80% and 20% respectively. Vatankhah and Talebi (2009) showed that there are many reasons for not getting ram and ewe lambs requirements from colostrum or milk, some of those reasons are sickness, poor bodies, low activities or ewe's bad mothering because of its weakness, mastitis, bad climate and separation from of their babies or bad farm management.

Everett-Hincks *et al.* (2005) found that shortage of feeding in last period of gestation is a main reason for lambs mortality, because this shortage lead to shortage in lambs weights and its weakness later, besides this shortage lead to milk production shortage and bad mothering. This study showed that mortality numbers was higher because of dystocia comparing with other reasons, it was 14 death for 220 births, also, there were many reasons for lambs mortality like run over, broke down, sinking and suffocation as a result of crowding,

bad management, stress and high temperature (Christley *et al.*, 2003).

MATERIALS AND METHODS

The research was conducted at the research station for sheep and goats of the Public Authority of Agricultural Research in Abu Ghraib, where the follow-up record of 220 (82 local Awassi, 84 Turkish Awassi and 54 Turkish crossbred) of the production season 2014 - 2015 to estimate lambs mortality from birth to weaning and factors affecting on it such as weight and age of dam at birth, lamb situation at birth, new born lambs from the total lambs (220), reasons of lambs mortality and their factors such as choking, crowding in barn, farm bad management, stress and raising temperature (Vatankhah and Talebi, 2009).

The aim of this study is to predict factors affecting local and Turkish Awassi lambs mortality, besides showing an important mortality from birth to weaning. The data were analyzed using the Chi square test within the statistical program SAS (2012).

Ewe were raised in open barns, they fed on different rations under various seasons, they fed on alfalfa with a concentrate ration of 500gm / head/ day and increased per kilo/ head/ day before mating season, through the last months of gestation and through suckling. All farm animals are submitted to healthy program starting from mating season, all animals are dipped for four time/ year (May, June, August and October) to terminate the external parasite like Lice and others. (before and after wool shearing), all animal are vaccinated against diseases.

Lambs mortality were calculated using the following equation (Ajeel *et al.* 2003) :

$$\text{Mortality Percentage} = \frac{\text{No. of lambs mortality}}{\text{Total no. of lambs}} \times 100$$

Table 1. Age, weight of dam at kidding new born situation and immortality percentage

Affecting factors	Total number of new born	Lambs mortality	Mortality percentage	Chi-square value (χ^2)
General average	220± 15.8	36± 4.7	16.36± 7.7	-----
Damage at kidding (year)				
2	63± 3.6	16±2.1	25.40± 5.3	6.027 **
3	105± 10.4	11± 1.9	10.48± 2.4	
More than 4	52± 2.7	9± 1.05	17.31±3.05	
Dam weight at kidding (kg)				
less than 45	71± 3.8	15± 2.2	21.13±4.6	4.893 *
55-45	82± 3.9	10±1.4	12.20±2.3	
More than 55	67± 2.7	11±2.5	16.42±4.2	
New born situation at kidding				
Naturally	183±8.9	22±4.1	12.02±2.8	8.372 **
Difficulty	37±2.5	14±1.9	37.84± 6.99	

* (P<0.05), ** (P<0.01).

Statistical Analysis System - SAS (2012), were used for data analyses to study the effect of different factors in studying percentage, the significant difference was compared between percentages by using Chi-square test.

RESULTS AND DISCUSSION

Table 3 shows that the average of mortality percentage from birth to weaning in Awassi sheep was 13.89%, and it is considered too high comparing with other mortality of lambs breeds, the reason of those high mortality was dystocia and other reasons were shown in

the same above table. Table 1 shows that the age of dam have high significance (P<0.01) on lambs mortality and it was found to be 25.40, 10.48, 17.31% for dam under ages 2, 3 and over 4 years respectively, Aged dams suffer from feeding intake, may be as a result of falling of their teeth and is reflected on their health and lambs mortality later.

Schwulst and Martin (1993), Ajeel *et al.* (2003), Mohamed *et al.* (2009), Maan *et al.* (2013) and Muhammad *et al.* (2014) supported that ages of dam had a significant effect on the lambs mortality percent-

Table 2. Effect of sex, type of kidding and breed on lambs mortality

Affecting factors	Total number of new born	Lambs mortality	Mortality percentage	Chi-square value (χ^2)
Breed				
Turkish Awaasi	82± 8.5	11±2.3	13.41±1.66	5.484 *
Local Awassi	84±4.7	19±3.8	22.62± 3.07	
Crossbred Awassi	54± 3.6	6±0.99	11.11±1.04	
Lamb sex				
Male	118± 9.5	16±1.2	13.56±2.03	4.055 *
Female	102± 5.8	20±2.06	19.61±2.40	
Type of kidding				
Single	173± 14.7	25± 4.88	14.45±3.4	4.924 *
Twin	47± 5.7	11± 3.02	23.40± 2.6	

* (P<0.05), ** (P<0.01).

Table 3. Mortality reasons and its percentage depending on total lambs numbers and mortality

S. No	The reasons	Mortality numbers	Percentage of total lambs mortality (36)	Percentage of total new born lambs mortality (220)
1	Dystocia	14±2.01	38.89± 4.30	3.36±0.41
2	Weakness	5±0.9	13.89±2.65	2.27±0.077
3	Poisons	5±0.87	13.89±2.75	2.27±0.08
4	Intestinal diseases	2±0.11	5.56±1.44	0.009±0.0002
5	Respiratory diseases	2±0.06	5.56±0.89	0.009±0.0001
6	Kidding distortion	2±0.08	5.56±0.54	0.009±0.0002
7	Another reasons	6±1.9	16.67±3.10	2.73±0.07
8	Chi-square value (χ^2)	-----	9.641 **	1.0043 ^{NS}

* (P<0.05); ** (P<0.01); NS Non- significant

age, while Vatankhah and Talebi (2009) did not find any sciatic effect of the dam age. The same table shows that dam ages had a significant effect (P<0.05) on lambs mortality, the percentages were 21.13, 21.20 and 16.42% for dams under weights less than 45, 45-55, and more than 55 kg respectively. Table 1 shows that calving situation was significant (P<0.01) on lambs mortality; the mortality average in difficulty calving 37.84%, is also seen while it was reduced in normal calving to 12.02%, may be the reason is a late in calving and new born negative affecting through calving.

Table 2 shows that various breed had a significant effect (P<0.05) on lambs mortality, the lambs mortality percentage at kidding until weaning age according to the genetical diversity of the groups *viz.*, Turkish Awassi 13.41%, local Awassi 22.62% and Turkish crossbred 11.11% (Schwulst and Martin, 1993; Vatankha and Talebi, 2009; Ishaq and Ajeel, 2013). Christley *et al.* (2003) did not find any significant effect of the breed on lambs mortality.

It turns out that type of twin kidding was more than 23.40% the other reasons may be the twins competitors on feed in dam uterus, so that was refluxed on the lamb body at kidding, besides dam milk may also not sufficient to cover the lamb requirements (Table 2). Schwulst and Martin (1993), Mohamed (2009), Chniter *et al.* (2011) and Abdelqader *et al.* (2017) turned out

that type of kidding had a significant effect on lambs mortality percentage, while Maan *et al.* (2013) and Muhammad *et al.* (2014) did not find any significant effect on the type of kidding on lambs mortality. Sex of lambs had a significant effect (P<0.05) on lambs mortality, the percentage was 13.56 and 19.61% for male and female respectively, Mohamed *et al.* (2009), Christley *et al.* (2003) and Bangar *et al.* (2016) supported that, male mortality was more than female mortality, while Ahrar *et al.* (2006) and Maan *et al.* (2013) did not find any effect of sex on lambs mortality.

Results represented in Table 3 showed that the mortality percentage differed significantly according to the mortality reasons. The mortality percentage which resulted from dystocia compared to total number of new born was 3.36% and its about 38.89% from total lambs mortality and this due to the deficiency of dam feeding before lambing. The results are similar with those of Vatanhah and Talebi (2009), whom they referred that ewes feeding especially in last stage of gestation effected significantly on lambs mortality. Another mortality reasons came after dystocia it was 16.67% comparing to total lambs mortality, may be the reason to bad management caring (Christley *et al.*, 2003).

CONCLUSION

It is concluded from this research that lambs

mortality percentage from birth until weaning considered high, and it was affected by many fixed factors, studying mortality reasons that can reach us to connect healthy and right management to reduce this percentage and subsequently increasing economic benefit from sheep rearing projects.

ACKNOWLEDGMENT

Special thanks to sheep and goats researches station staff which belong to the Public Authority for Agricultural Researches - Ministry of Agriculture in Abu Ghraib area at Baghdad, Dr. Nasar and Dr. Hassan Saad Jawad, Department of Animal Production- Agriculture college – Baghdad university, whom lend their support in this research.

REFERENCES

- Abdelqader A, Rabie I, Mohammad JT, Mohannad A, Hosam T and Al-Fataftah AR. 2017.** Factors influencing Awassi lambs survivorship under fields conditions. *Livestock Science*, 199: 1-6.
- Ahrar K, Muhammad AS, Muhammad AJ and Iftikhar H. 2006.** Risk factors of lamb mortality in Pakistan. *Animal Research Journal*, 55(4): 301-311.
- Ajeel HM, Majid SA, Taha SA and Hadi HJ. 2003.** Effect of age, body condition and teeth condition on reproductive performance of Awassi ewes. *Iraqi Journal of Agriculture*, (Special issue) 8(1): 94-102.
- Chniter M, Hammadi M, Khorchani T, Krit R, Lahsoumi B Mohsen BS, Raymond N and Mohamed BH. 2011.** Phenotypic and seasonal factors influence birth weight, growth rate and lamb mortality in d'man sheep maintained under intensive management in Tunisian oases. *Small Ruminant Research*, 99(2-3): 166-170.
- Christley RM, Morgan KL, Parkin TD and French NP. 2003.** Factors related to the risk of neonatal mortality, birth-weight and serum immunoglobulin concentration in lambs in the UK. *Preventive Veterinary Medicine*, 57(4): 209-226.
- Everett-Hincks JM, Lopez-Villalobos N, Blair HT and Stafford KJ. 2005.** The effect of ewe maternal behavior score on lamb and litter survival. *Livestock Science*, 93(1): 51-61.
- Maan AA, Sadic AT, Nazar IK and Findia HH. 2013.** Effects of parents sex, birth type, and age on livability of Turkish Awassi sheep lambs. *Diyala Agricultural Science*, 5(2): 114-121.
- Mohamad Ishaq A and Hmod Ajeel M. 2013.** Reproductive performance characteristics of local and Turkish Awassi sheep in semi-intensive system. *The Iraqi Journal of Agricultural Sciences*, 44(5): 615-623.
- Mohamed C, Serya M, Mohamed H, Touhami K, Harab H, Riadh K, Mohamed BH, Gley K and Raymond N. 2009.** Effects of dam age, litter size and gender on birth weight of d'man lamb - consequence on lamb mortality. *Journal of Arid Land Studies*, 19(1): 169- 172.
- Muhammad IM, Mian MM, Muhammad L, Muhammad KB and Abdur Rauf K. 2014.** Factors influencing lamb mortality from birth to weaning in Pakistan. *Pakistan Journal of Life and Social Sciences*, 12 (3): 139-143.
- Oldham CM, Thompson AN, Ferguson MB, Gordon DJ, Kearney GA and Paganoni BL. 2011.** The birth weight and survival of Merino lambs can be predicted from the profile of live weight change of their mothers during pregnancy. *Animal Production Science*, 51: 776-783.
- SAS / STAT. 2012.** Users Guide for Personal computers release 6.12, SAS Institute Inc., Cary, NC, USA.
- Schulst FJ and Martin LC. 1993.** Factors affecting pre weaning lamb death losses. *The Professional*

Animal Scientist, 9(1): 10-13.

Vatankhah M and Talebi MA. 2009. Genetic and non-genetic factors affecting mortality in lori-bakhtiari lambs. *Asian-Australasian Journal of Animal Science*, 22(4): 459-464.

Bangar YCS, Pachpute ST and Nimase RG. 2016. The analysis of the potential risk factors affecting lamb mortality in Deccani sheep. *Journal of Dairy, Veterinary and Animal Research*, 4(2): 00114.

Submit your articles online at ecologyresearch.info

Advantages

- Easy online submission
- Complete Peer review
- Affordable Charges
- Quick processing
- Extensive indexing
- You retain your copyright

submit@ecologyresearch.info
www.ecologyresearch.info/Submit.php