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PERINATAL LAMB MORTALITIES ON THE LEVEL OF TIARET AREA (ALGERIA)

(With 2 Tables and One Figure)

By

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دراسة نسبة نفوق الخراف في مرحلة الولادة على مستوى ولاية تيارت بالجزائر

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تم متابعة ثلاثة عشرة ألفا وثمان مائة نعجة من سلالة "الرمبي" الجزائرية خلال هذه الدراسة , تنتمي إلى خمسين قطيع مختلفة وموزعة على مستوى كافة مناطق ولاية تيارت في نطاق كافة مواسم التكاثر الممتدة بين ٢٠٠٤ .٢٠٠٥. ثبت من الدراسة أن معدل وفيات الخراف خلال الفترة الأخيرة من الحمل (الأجهاض) أو كذلك في الأيام الأولي من ولادة الحملان المسجلة في فترة ٢٠٠٤ .٢٠٠٥ بلغ ٢٥,١٧%، تتوزع هذه النسبة حسب سن الوفاة على النحو الآتي: ٢,٩٠% من الوفيات سجلت في الشهر الأخير من الحمل (إجهاض) ، ٩,٠٥% عند الولادة، ١٣,١٣% من الولادة حتى اليوم العاشر. ويمكن الاستنتاج أن التقنيات السيئة في تربية الحيوانات مثل نقص النظافة في مزارعنا وقلة المتابعة والمراقبة كانوا سببا في معظم الوفيات. أما الأسباب التي تتكررفهي: الإجهاض، حالات عسر الولادة، دهس حديثي الولادة، مشاكل الرضاعة والأمراض الجرثومية الأمراض التنفسية والاسهالات.

SUMMARY

Thirteen thousand eight hundred of Algerian Rumbi ewes were examined, in our study, for lamb's perinatal losses. These ewes belong to fifty breedings of different size, which were distributed on the totality of Tiaret area. These ewes were followed over years 2004 and 2005. The average rate of lamb losses recorded over these two years was 25.09 %;. This rate is distributed according to the age of mortality in the following way: 2.90 % of losses were recorded during the last month of gestation

(abortions), 9.05 % of stillbirths losses and 13.13 % losses from birth to the tenth day lamb's life. Bad controlled breeding methods, in our sheep herds, were the main factors at the origin of the majority of lamb losses. Among repeated causes, we found abortions, dystocia, crushing of new born, problems of breast feeding and infectious diseases such as respiratory affections and diarrheas.

***Key words**: Lambs, mortality, ovine breeding.*

INTRODUCTION

In spite of the considerable potential of Algeria in the field of ovine breeding, rustic and very prolific breeds such as those of Ouled Djellal, Rumbi and Hamra as well as space of their comfort, this breeding is confronted to major problems in management. This can be explained by the high rate of perinatal lamb losses in these sheep herds.

Under some flock conditions, up to 20% of lambs may fail to survive the early weeks of life. There was general agreement among authors that much of this lambs mortality was avoidable by improvements in the management and feeding of the lambing flock. It is rare for death of the lamb to occur prior to the start of parturition. The generally accepted incidence of antenatal death in lambs is about 2%. Survival of the live-born lamb depends mainly on its ability to withstand environmental stress, cold and starvation (Haughey, 1991).

In France, results of control of performance over years 1981-1982, locate towards 10 % the ovine losses from birth to 70 days (Theriez, 1982).

In Quebec, estimated average rate death obtained for the two years of 2002 and 2003 was about 17.78 % (Cimon *et al,* 2005).

The main objective of this study is to make a total evaluation of lamb death rate in our herds for the perinatal period and to determine etiology of these mortalities in order to reduce them to more acceptable rates (4 to 6 %) (Rook *et al,* 1990; Hindson and Winter, 1996, Berger, 1997 and Radiostis, 2001).

MATERIELS and METHODS

Our study was undertaken on 50 different sized ovine breeding, composed of 13800 Algerian Rumbi ewes, and which were distributed on the totality of the territory of Tiaret area.

present study consisted in following up local breedings over various reproduction seasons, and data recorded over the period 2004-2005. Collected data were:

- Lamb death rate during the perinatal period (this period includes abortions of the last month of gestation, stillbirth lamb's losses and those recorded from birth to the tenth day lamb's life).
- Etiology of these mortalities from breeding and infection point of view.

Lastly, statistical analysis was carried to be able to recommend solutions and to claim to reduce these death rates.

RESULTS

The perinatal lamb's death rate over the years 2004 and 2005 are shown in Table 1.

The average rate death obtained for these two years was 25.17 %. For the 50 breedings of our study, we have obtained an average rate death of 24.41 %, with extremes of 17.79 % and 28.40 % for the year 2004 and 25.93 % with extremes of 18.03 % and 30.08 % for the year 2005.

Table 1: Perinatal lamb's rate death according to size of breedings, over 2004 and 2005 years.

Number of affected breedings	Average number of ewes by breeding	Perinatal death rate (%)	
		Year 2004	Year 2005
5/50	800	(1917/6750) 28.40 %	(1512/5025) 30.01%
20/50	350	(3345/13600) 24.59%	(3075/11920) 25.79%
20/50	120	(709/3920) 18.08%	(615/2960) 20.77%
5/50	80	(121/680) 17.79%	(92/510) 18.03%
Total	13800	(6092/24950) 24.41%	(5294/20415) 25.93%

(/): The number of lambs died compared to the total number of lambs obtained.

Distribution of these lamb mortalities according to age of losses is shown in Figure 1.

The most critical period for lambs deaths was observed from birth to 10th day of their life, with an average rate of losses of 13.13 % for the years 2004 and 2005. For still birth losses, this rate was 9.05 %. It was of only 2.90 %, for the last month of gestation losses (abortions) over the same period 2004 -2005.

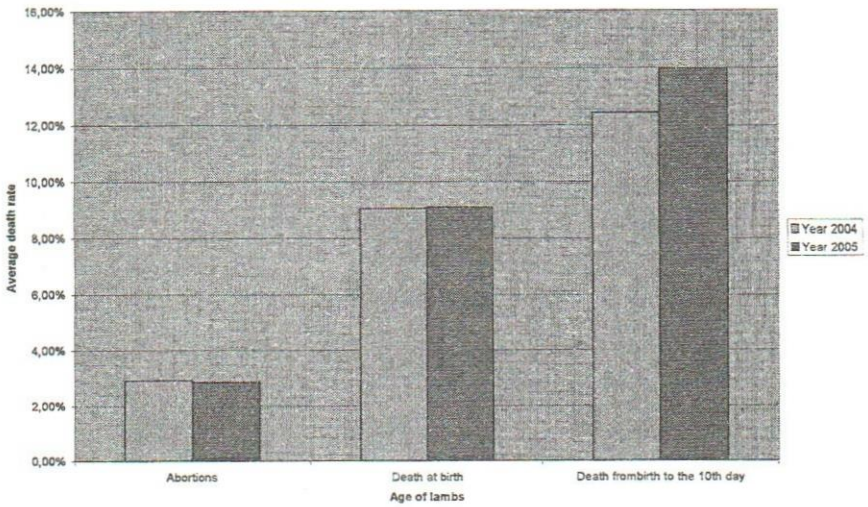

Figure 1: Death rate according to age losses for 2004 and 2005 years

The principal causes and their frequency compared to the whole of mortalities per year are shown in Table 2.

Over the period which was spread out over the two years 2004 and 2005, the whole factors at the origin of perinatal mortalities which we could identify were directly related to the bad conduct in our breedings especially in control, assistance and hygiene of sheep herds. This automatically highlight the infectious agents leading to high rates of abortions, respiratory diseases and diarrheas in new born lambs.

Among the numerous infectious agents identified by clinical or serologic examination, we can note by order of importance: Brucella melitensis and abortus, Chlamydia abortus and more rarely sheep-rota virus in abortions and E. coli bacillus and Salmonellas species in neonatal mortalities.

Table 2: Etiology and frequency of lamb losses over the years 2004 and 2005.

Causes	Mortalities frequency		Number of affected breedings
	Year 2004	Year 2005	
Abortions	(732) 12.01%	(585) 11.05%	22/50
Dystocia	(650) 10.66%	(580) 10.95%	48/50
Crushings	(420) 6.89%	(375) 7.08%	10/50
Problems of breast feeding	(762) 12.50%	(632) 11.93%	46/50
Diarrheas	(512) 8.40%	(492) 9.29%	50/50
Respiratory diseases	(460) 7.55%	(366) 6.91%	32/50
Others	(2556) 41.95%	(2264) 42.76%	50/50

( ): Number of died lambs.

DISCUSSION

The rate of lamb's perinatal death recorded in Tiaret Algerian breedings, during the two years of 2004 and 2005, was of 25.09 %. It is higher than the rate obtained by Quebec's provincial group analysis in ovine production, which was of 15.4 % in 2001 and of 19.07 % in 2002 (Tremblay, 2002; Tremblay, 2003). Cimon *et al,* (2005) brought back a rate lamb death of 17.78 % over the two years of 2002 and 2003.

This recorded high rate death can be explained on the basis of the type of breeding practiced in such ovine herds which is much more extensive than in well controlled herds. This model does not permit a continuous control of our animals and better lamb losses rate.

The most important rate death recorded corresponds to following periods of lambing; antenatal losses period came in the second place.

Such results are similar to those reported by the majority of authors who consider that the first month lamb's life as the most critical (Jarrige, 1984; Rowland *et al,* 1992; Arsenault *et al,* 2002; Tremblay, 2003 and Cimon *et al.,* 2005).

Concerning the etiology of these mortalities, recorded results show that non controlled herds led to important losses by starvation, environmental stress, cold and crushing of new born, especially in important breedings size (average of 800 ewes and more). Our results join those of many other authors (Haughey, 1991; Gama *et al,* 1991; Rowland *et al,* 1992; Mukasa *et al,* 2000; Belanger *et al,* 2001; Southey *et al,* 2004 and Cimon *et al,* 2005).

Concerning infectious problems, recorded results showed that, compared to the whole of recorded mortalities, infectious abortions, neonatal diarrheas and respiratory diseases represented alone respectively 27.96 % in 2004 and 27.25 % in 2005. Arsenault *et al,* (2002) brought back lower rates. This can be explained by the lack of comfort and hygiene in Algerian sheep herds which are, in their majority, of traditional type.

This study enabled us to determine problems at the origin of lambs losses which prevail in local breedings, and to orient them towards much more intensive models where herd size is of less importance and which permit a better reproductive controlled breeding.

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