

Score Estimation of Gain of Female Lambs from Ile De France Breed in Bulgaria

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ABSTRACT

The aim of the study was to make a score estimation of average daily gain of female lambs from Ile de France breed with different type of birthing in Bulgaria. The study was carried out on 55 female lambs with different type of birth from the flock of Institute of Animal Science – Kostinbrod, born in both following years – 2004 and 2005. On the ground of live weight 10, 30 and 70 daily age were calculated average daily gain between 10-30 and 30-70 day of lambs and average of gain, which used for base of determination of score 0 and variation from average gain defined positive or negative score estimation. The age for determination of average daily gain and class interval between the scores was conformable to requirements of selection of Ile de France breed. It has established significant higher average daily gain between 30-70day to singles and twins born in 2004 ($P < 0.01$, $P < 0.05$). However the percentage of singles got score estimation was higher in positive part of chart and the percentage of twins got score estimation was the same in both part of chart.

Key words: score estimation, live weight, average daily gain, female lambs

INTRODUCTION

In recent year was made import in Bulgaria of sheep from Ile de France breed that has ability to adapt to a wide range of climates and to very different farming systems. This breed with its growth rate, conformation and carcass qualities is very importance for both pure and crossbreeding. In condition of increasing number pure-breed Ile de France sheep in Bulgaria it is necessary to work up a method for score estimation of the lamb gain responding on selection requirements of the breed. By this way the obtained results in Bulgaria will be possible to compare with these in France. This is also necessary for the future calculation of the breeding value of the ewes and rams like in France.

In Bulgaria there were many study on growth and adaptation of lambs from Ile de France breed, estimated the effect of some factors on lambs live weight and gain at the same ages (Dimitrov, 1988, Ivanov and Dimitrov, 1984; Ivanov et al., 1992; Ivanov et al., 1996; Raicheva et al., 2004, Raicheva and Ivanova, 2005). For unification of the methods for sheep estimation with these in France

Ivanova et al., 2006 worked up a score estimation of daily gain of Ile de France male lambs.

The aim of the study was to made a score estimation of average daily gain of female lambs from Ile de France breed whit different type of birthing in Bulgaria.

MATERIALS AND METHODS

The study was carried out on 55 female lambs with different type of birthing (26 singles and 29 twins) from Ile de France breed flock of Institute of Animal Science – Kostinbrod. The lambs were born in 2004 and 2005. On the base of the live weight of lambs at 10, 30 и 70 daily ages was calculated average daily gain between 10-30 and 30-70 day. It was determinated average gain of each category (singles and twins) for the both periods (10-30 and 30-70 day) and both years (2004 and 2005).

It was used the same method worked up from Ivanova et al., 2006 for score estimation which could be used for classing of female lambs with reference to average gain of the flock within framework of a year of corresponding category and type of birth. For a base of determination of score 0 was used average gain and variation from average gain defined positive or negative score estimation. The age for determination of average daily gain and class interval (20g) between separate scores were considered to requirements for selection of Ile de France sheep.

The information was analyzed by ANOVA methods.

RESULTS AND DISCUSSION

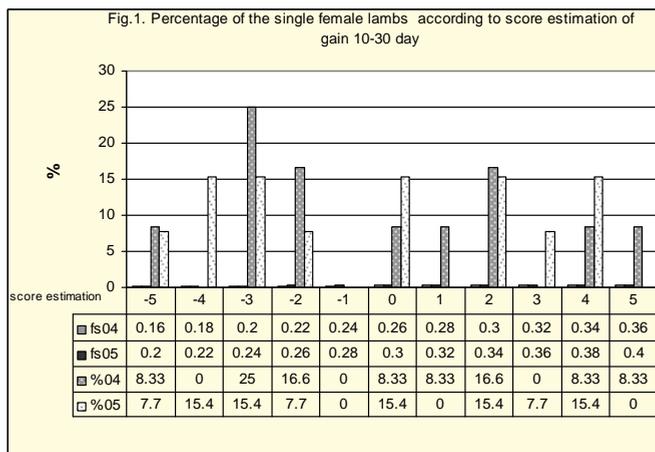
The analysis of results of gain 30-70 day shows significant higher value at female singles and twins born in 2004 ($P < 0.01$, $P < 0.05$). The difference of the gain 10-30 day at female singles and twins for the same period was with opposite tendency (tab. 1).

Table 1. Average daily gain of female lambs

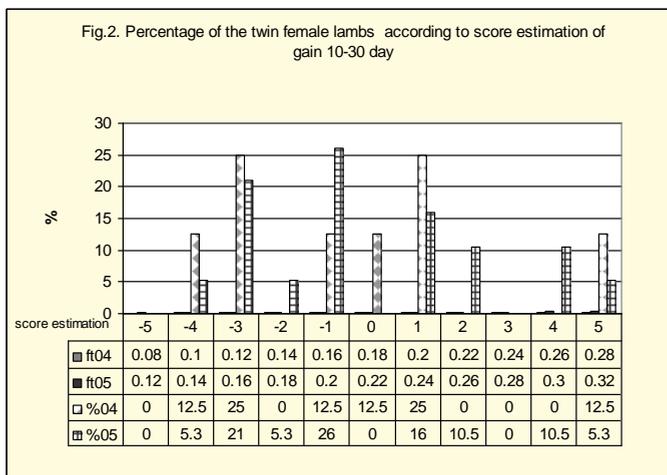
Gain	n	2004			2005			Signif
		X	Sx	SD	X	Sx	SD	
Female singles (fs) 10-30 day	25	0.260	0.017	0.060	0.300	0.017	0.062	NS
Female twins (ft) 10-30 day	27	0.180	0.025	0.069	0.220	0.014	0.063	NS
Female singles (fs) 30-70 day	26	0.320	0.026	0.097	0.250	0.020	0.073	*
Female twins (ft) 30-70 day	29	0.340	0.032	0.090	0.209	0.019	0.086	**

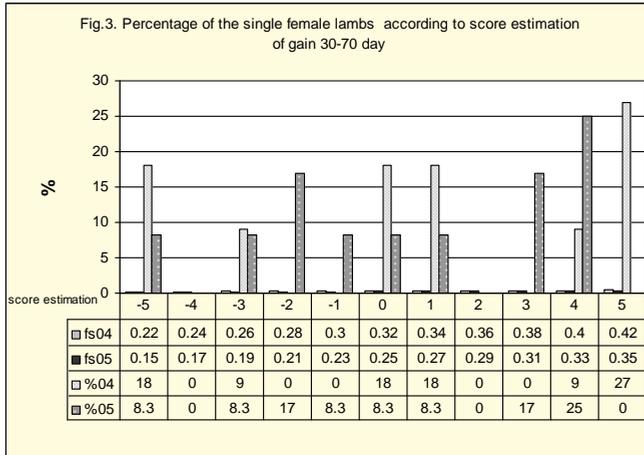
Note: Significance between groups: $P < 0.01$ - **, $P < 0.05$ - *;

The first estimation on individual productivity the lambs of Ile de France breed gets by the gain score between 10-30 and 30-70 day. This score shows what is the place of the corresponding animal with reference to average gain of the flock of comparing category (single and twin). The class interval from 20g between separate scores was conformed to this of the parents and ensured comparison of the data of the lambs born in Bulgarian condition.



Average daily gain between 10-30 days shows growth abilities of the lambs as a result of milk production of ewes. The percentage of lambs got negative score was higher during the both years for the average daily gain between 10-30 days of female lambs born as single. The highest was the percentage of lambs born in 2004 got score -3 (Fig.1). The highest percentage was female twins born in 2004 with score -3 and 1 and born in 2005 with score -1 (Fig. 2). The difference between average value of scores for singles and twins at both year is equal - 80g.

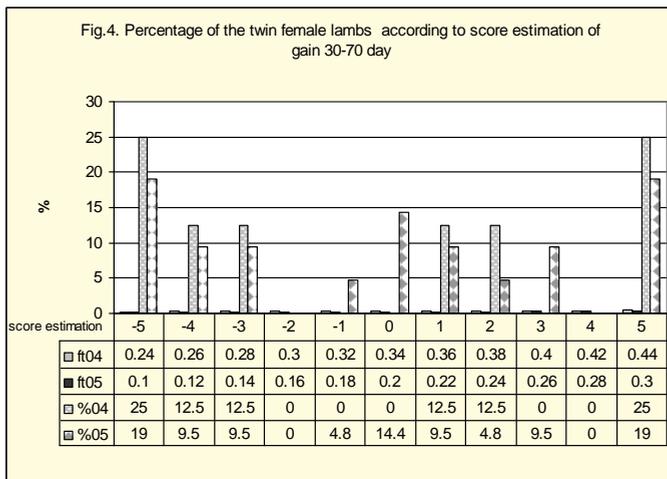




Average daily gain between 30-70 days reflects growth potential of lambs depending on their genetic gifts. The percentages of female single lambs according to score estimation of gain between 30-70 day was the highest during 2004 for lambs with score 5 and during 2005 with score 4 (Fig. 3). The percentage of lambs got positive score was higher during the both years.

The percentage of the female twins for the gain between 30-70 days was presented on Fig.4. The percentage of lambs got positive and negative score estimation were the same in both years.

The difference between average value of scores for singles and twins at 2004 is 20g, but at 2005 it is higher - 50g.



CONCLUSIONS

It was established significant higher average daily gain between 30-70day to singles and twins born in 2004 ($P<0.01$, $P<0.05$). However the percentage of singles got score estimation was higher in positive part of chart and the percentage of twins got score estimation was the same in both part of chart.

The score estimation that was worked up is a similar, easy for doing method to class according to individual productivity. The information that is received is valid only for current year and flock but it can use successfully for selection of lambs and will ensure timely and maximal effective selection.

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