

LAMB FATTENING POSSIBILITIES IN MIXED FLOCK OF SHEEP

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ABSTRACT

The aim of this study was to determine daily weight gain of different Würtemberg crosses. The experiment was carried out in central part of Vajdaság province, at right and left side of river Tisza in Bácska and Bánság region. In flock of 240 Würtemberg ewes 3 genotype of ram were used: Würtemberg, Ile de France and Charolais. Trial included 60 lambs of three breed and crosses, 20 lambs per each: I. group pure Würtemberg, II. group Ile de France x Würtemberg and III. group Charolais x Würtemberg. Average body mass of lambs at the beginning of trial was approx. 12 kg and at the end of the trial approx. 30 kg. The lambs were divided into two groups: indoor and pasture trial group. Lambs of group A were kept exclusively on pasture for fattening, fed by mothers milk and grass. Lambs of group B were kept indoors fed by mothers milk, concentrate mixture and alfalfa hay (ad libitum). During the experiment all lambs in group had same housing and nutrition condition. At the indoor condition the average daily gain of pure Würtemberg breed were 290 g for ram and 279 g for ewe lambs. In the case of Ile de France x Würtemberg crosses the daily gain were 313 and 309 g respectively. Charolais x Würtemberg crosses showed daily gain of 333 and 300 g per day. In this case the ram and ewe lambs obtained the best daily gain in the group. In the pasture condition the crosses of ram the Charolais x Würtemberg show the highest results 271 g while in the case of pure Würtemberg breed the result was 226 g/day. The average values of Ile de France x Würtemberg crosses are in the middle with daily gain value of 250 and 243 g/day. Würtemberg breed and their crosses at indoor condition have realised higher daily gain average. This confirms the fact that in crossing beside the genetic difference between populations that are being crossed, important factor for better daily gain is also the system of feeding. At indoor and also in outdoor condition the all breed crosses of Charolais x Würtemberg lambs got the highest daily gain results. In that case of crossing the Charolais breed has an outstanding effect.

Key words: lamb fattening, Würtemberg, Ile de France, Charolais breeds

INTRODUCTION

Sheep are the most efficient converters of the hundreds of thousands of hectares of marginal vegetation into high quality animal protein (FLAMANT AND MORAND-FEHR, 1982; BOYAZOGLU ET AL., 1985; BOYAZOGLU AND FLAMANT, 1990). Today, there are many sheep populations and different rearing systems, which are conditioned by natural and economical factors and sheep producing tradition in certain countries or regions. Therefore, there is no general model which could apply for all farms and conditions (OSAMU ET AL., 2005; PETROVIC, 2007). Researchers are facing the responsibility to define existing systems and point out to directions of future development of sheep breeding (ALMAHDY ET AL., 2000; VIZARD AND NIVEN, 2002; UGARTE, 2007). The fattening operations are among the important activities within sheep production sector. The variations are due to several reasons; among these are the sizes of investments, location of

the fattening farm and the experience of farmers. Locally, there are two types of lamb fattening systems, the commercial – intensive (rarely used) and the semi-extensive systems. In the first, commercial fattening manufactured feeds are used in these operations while the pasture-based diet is used in the semi-extensive system, (HAMMAD ET AL., 2002). The system of raising lambs for meat under grazing with supplementation although is cost effective, the procedure has not been largely adopted by the farmers due to their poor economical background and age old traditional practices. Low production of mutton and lamb meat is consequence of numerous factors such as: poor breed structure, inadequate nutrition and primitive breeding methods, (RUZIC-MUSLIC ET AL., 2005). Analysis of sheep production systems in the world shows that in many countries slaughter lambs are crosses in 30-70% of cases (MITIC, 1984). The objective of this study was to compare different lamb crosses in different feeding systems.

MATERIAL AND METHOD

The experiment was carried out in central part of Vajdaság province, at right and left side of river Tisza in Bácska and Bácság region. In flock of 240 Württemberg ewes 3 genotype of ram were used: Württemberg, Ile de France and Charolais. Trial included 60 lambs of three breed and crosses, 20 lambs per each: I. group pure Württemberg, II. group Ile de France x Württemberg and III. group Charolais x Württemberg. Average body weight of lambs at the beginning of trial was approx. 12 kg and at the end of the trial approx. 30 kg. The lambs were divided into two groups: indoor and pasture trial group. Lambs of group A were kept exclusively on pasture for fattening, fed by mother's milk and grass. The animals were left to graze from 8:00 to 18:00 h every day, had free access to fresh water and received no supplementary feed. Lambs of group B were kept indoors fed by mother's milk, concentrate mixture (Table 1) and alfalfa hay (*ad libitum*). During the experiment all lambs in group had same housing and nutrition condition. Control measuring was carried out in 7 day intervals using standard zoological methodology. Obtained results on monitored parameters were processed using SPSS statistical program package.

Table 1. Structure and nutritious value of the concentrate mixture in %

Components	Ratio
Corn	45,0
Wheat	20,5
Soybeen grits	16,0
Sunflower cake	6,0
Yeast	3,0
Alfalfa meal	7,0
Salt	0,5
Pre mixture	2,0

RESULTS

Data on production parameters of lambs at indoors condition according to crosses is presented in Table 2. The average daily gain of pure Württemberg breed were 290 g for ram and 279 g for ewe lambs. In the case of Ile de France x Württemberg crosses the daily gain were 313 and 309 g respectively. Charolais x Württemberg crosses showed daily gain of 333 and 300 g per day. In this case the ram and ewe lambs obtained the best daily gain in the group.

Table 2. Production results of lambs in fattening at indoors condition

Breed or crosses	n	Average daily weight gain (g/day)	
		ram	ewe
Württemberg	20	290	279
Ile de france x Württemberg	20	313	309
Charolais x Württemberg	20	333	300

Data presented in *Table 3* show the lambs daily weight gain at pasture condition. The crosses of ram the Charolais x Württemberg show the highest results 271 g while in the case of pure Württemberg breed the result was 226 g/day. The average values of Ile de France x Württemberg crosses are in the middle with daily weight gain value of 250 and 243 g/day. Concerning above mentioned breeds and crosses all presented daily weight gain results are very similar with other authors experiment records, (PLATT, 2006; GOLDING ET AL., 1976; RAICHEVA ET AL., 2007).

Table 3. Production results of lambs in fattening at pasture condition

Breed or crosses	n	Average daily gain (g/day)	
		ram	ewe
Württemberg	20	226	219
Ile de France x Württemberg	20	250	243
Charolais x Württemberg	20	271	261

DISCUSSION AND CONCLUSIONS

According to the presented result, Württemberg breed and their crosses at indoor condition have realised higher daily gain average (*Table 2*). This confirms the fact that in crossing beside the genetic difference between populations that are being crossed, important factor for better daily gain is also the system of feeding. It is evident that beside of obvious effect of heterosis the way of feeding resulted in higher daily gain and body weight. Researches by other authors have confirmed our statement (PETROVIC ET AL., 1998; CAMERON AND DRURY, 1985).

But from the financial point of view the additional feeding investments like using the concentrate mixture as well as the alfalfa hay are not always subservient. Practically there is no common model which could apply for all rearing system, (RAICHEVA AND IVANOVA, 2007). In sheep production in Serbia, in the last several decades, there have been some changes in the sheep rearing system. Conditions of nutrition and care have been improved, and local populations have been improved not only through selection measures but also planned or unplanned crossing with foreign breeds. Also, foreign breeds have been imported, and some of them succeeded to adapt to new conditions and are reared in pure breed, (PETROVIC ET AL., 2009.). But answer for the question that potentials of different breed crossing and production in different rearing systems, to decide which will serve better the defining direction, will be obtained only by experiments under the given circumstances.

By the other hand our results indicate the importance of ram type in crossing (PETROVIĆ, 2000; VIZARD AND NIVEN, 2002; OSAMU ET AL., 2005). Namely at indoor and also in outdoor condition the breed crosses of Charolais x Württemberg lambs got the highest daily gain results. It was the same in the case of ram and ewe lambs. In that case of crossing the Charolais breed has an outstanding effect.

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