UPLATŇOVANIE VEĽMI SKORÉHO ODSTAVU JAHNIAT PRI BAHNICIACH S VYSOKOU PRODUKCIOU MLIEKA

APPLYING VERY EARLY LAMB WEANING TO EWES WITH HIGH MILK PRODUCTION

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Abstract
Sheep breeding in Slovakia is focused on milk and meat production. The breeding of dairy sheep is aimed at increasing milk production by breeding purebreds or implementing crossbreeding. The average milk production per dairy period is about 100 litres but in breeding farms there also exist high-production ewes with more than 200 litres of milk production. In the crossbreeds with Lacaune (LC) rams, the occurrence of such ewes is more numerous. After lambing, the ewes have so high milk production that lambs are not able to suck out all this amount of milk in the first weeks, especially in case of a single lamb. In order to prevent udder inflammation, these ewes need additional manual milking. This is the reason why a very early weaning of lambs is applied to dairy breeds abroad.
Keywords: sheep, high milk production

On the Specialized Farm of the Research Institute for Animal Production (Účelové hospodárstvo VÚŽV) in Trenčianska Teplá, Slovakia, the sheep breeds of LC are also kept. In the weeks after the parturition of ewes, we encounter the problem of lambs not emptying the udder sufficiently. Therefore, we have tested the very early weaning of lambs.

Mostly purebred LC ewes and lambs were included in the experiment. The lambs in the milk rearing were involved on the second day after their birth, regardless of their sex or litter size. The lambs were reared in individual lambing pens (nursery) (Photo 1). They were fed with milk mixture served in white plastic buckets on which soothers with check valves were mounted. In the lambing pens were also placed blue plastic bowls for the grain fodder mixture, a manger for hay and a bucket for water. The individual lambing pens, as seen in the photo, were closed from the top with a green metal barrier that prevented the escape of lambs.

The feeding of lambs was realized according to a set schedule and feeding plan:

Age of lambs	Amount of milk mixture
1st to 2nd day	colostrum
3rd to 4th day	1 litre for 4–5 feedings
5th to 7th day	1 to 1.5 litres for 3–4 feedings
2nd to 3rd week	1.5 to 2 litres for 2–3 feedings
4th to 5th week	1 to 1.5 litres for 2 feedings

From the 10th day the lambs were fed with grains, bulky feed and water. In the experiment, a dried dairy feed mixture Nutrifeed (Halmalac) was used, which was acidified (product with probiotics). The recommended concentration was 1 kg of milk powder per 5 l of water (1:5 dilution ratio), heated to 55°C – 60°C. The resulting temperature of the served milk was 37°C to 38°C and the ambient temperature 19°C to 20°C.

The lambs were weighed and at weekly intervals the following was evaluated:

- Weight of lambs at the 1st weighing upon being placed in lambing pens,
- Weight of lambs when leaving,
- Number of days in rearing,
- The average daily weight gain during rearing,
- Live weight gain (absolute gain – from the 1st weighing to leaving).

At the start of the experiment, in order to have a sufficient number of lambs, we also included in the rearing lambs older than 2 days, which influenced the average weight at the first weighing – it was 6.2 kg. Altogether we raised 38 lambs of the LC breed (17 ram lambs and 21 ewe lambs) and 2 lambs of the Tsigai (T) breed. The room capacity and the number of individual pens limited the number of lambs in the rearing.

The experimental ewes were milked twice a day in a parallel milking parlour, located under shelter in the Specialized farm (Photo 2). As you can see in the photo, in March during the milking of the sheep, it was winter weather with snow and frost. During the experimental period, 3 milk control measurements (MKM) were performed at the morning milking. After this period, 4 MKMs were carried out as part of the milk performance control (MPC) at the ewes of the LC breed. The dairy period was 118 days. Based on the obtained results, we evaluated the following:

- Average daily milk production at three MKM,
- Milk production for the experimental period (to the beginning of the MPC),
- Average daily milk production during the experimental period,
- Average length of the experimental period,
- Real milk production during the milking period,
- Average daily milk production during the milking period,
- Milk production for a standardized (150 day) milking period,
- Milk production during lactation,
- Average daily milk production during lactation.

Except the mentioned LC (and T) ewes, 17 additional C ewes and Improved Valachian (IV) ewes were milked, whose lambs had died or had been aborted.

The intensity of lamb growth in artificial milk rearing is shown in Table 1. Because the LC ewes were not concentrated, the lambs arrived at milk rearing gradually after their birth. At the first stage, the lambs were older than 2 days and they learned to receive milk replacers without problems. The average weight of the lambs at the 1st weighing was 6.2 kg and when leaving it was 14.5 kg. This is when the lambs were moved to pens where they were fed with bulky feed and grain feed. The average period of rearing lambs on milk replacers was 36 days. During this period, the lambs showed a live weight gain of 8.3 kg, which represents an average daily increase of 261.8 g. Ram lambs achieved higher values than ewe lambs in all indicators (except the time spent in rearing), but the differences were (at the level of $P>0.05$) statistically non-significant. The average consumption of milk replacers for a lamb was 11.0 kg, which represents a consumption of 1.3 kg of milk mixture per 1 kg of increment.

The milk production of LC ewes in the experimental period (after early lamb weaning) during the milking period (MPC) and during lactation is shown in Table 2. The daily production of MKM suggests that LC ewes are characterized by high milk production. For the experimental 27-day average milking time (ranged from 2 to 49 days), the ewes produced 42.2 litres of milk, which represents an average daily production of 1469.1 ml. Milk performance control of ewes was started according to the current methodology, 14 days after the 3rd milk control measurement. Four MKM were performed at monthly intervals. Based on the obtained results, we calculated milk production per dairy period (118 days), per standardized milking period (150 days) and per lactation.

Table 1: Indicators of lamb growth rate at early lamb weaning and rearing on milk replacers

Marker	Sex	n	Sex	F - test
Weight at 1st weighing in kg	Ram lambs	17	6.5	0.539
	Ewe lambs	21	6.0	
	Sum	38	6.2	
Weight at the end of rearing in kg	Ram lambs	17	15.1	2.126
	Ewe lambs	21	14.0	
	Sum	38	14.5	
Live weight gain in kg	Ram lambs	17	8.7	0.466
	Ewe lambs	21	8.1	
	Sum	38	8.3	
Average daily gain in g	Ram lambs	17	293.5	2.952
	Ewe lambs	21	236.2	
	Sum	38	261.8	
Average rearing time in days	Ram lambs	17	35	0.216
	Ewe lambs	21	37	
	Sum	38	36	

Table 2: Milk production of the Lacaune sheep at early lamb weaning per milking period and per lactation

Milk production and milking period in day	n	Average	Min.	Max.
Daily during 1st MKM in ml	22	1668.2	500	2800
Daily during 2nd MKM in ml	28	1719.6	500	2800
Daily during 3rd MKM in ml	40	1231.3	400	2400
Daily during the experimental period in ml	40	1469.1	400	2906.0
Total during the experimental period in l	40	42.2	1.6	98.2
Length of the experimental period in days	40	27	2	49
During the 118 day milking period in l	38	163.5	88.5	222.9
Daily during milking period in ml	38	1385.7	750.3	1888.8
During the standardized (150 day) milking period in l	38	221.2	112.6	314.5
During the lactation period in l	38	264.4	116.21	391.4
Length of the lactation in days	38	177	152	199
During the lactation in ml	38	1487.1	730.5	2133.5

The ewe produced an average of 163.5 litres of milk per dairy period, representing a daily production of 1385.7 litres. For the standardized milking period, the average production was 221.2 litres and 1385.7 ml per day, respectively. In total, during the 177 days of lactation (sum of the experimental period and standardized milking period) the ewes produced 264.4 litres of milk, representing 1487.1 litres of milk per day.

In the early lamb weaning and individual rearing on milk replacers, an average daily increment of 261.8 g was achieved during the experimental period. Making the lambs change to artificial nutrition was not problematic and the occurrence of diarrhoea was rare in the use of acidified milk replacers. Passing from milk nutrition to solid feed for the lambs was smooth, and in the next rearing no differences were noticed when compared to lambs reared under ewes. The live weight of lambs of each purebreed and crossbreed in Trenčianska Teplá, measured on 28 October 2004, is shown in Table 3.

By the machine milking of ewes after the early lamb weaning, an average of 42.2 litres of milk was received. In this way, the complicated manual milking of ewes was avoided, when the lambs could not possibly suck out all the milk. At the same time, we started the milking of those ewes whose lambs died and had stopped milk production before.

Table 3 Live weight of lambs of different genotypes at an average age of 8 months

Marker	Ram lambs		Ewe lambs	
	n	Weight in kg	n	Weight in kg
IV	4	42.3	10	33.9
C	-	-	13	33,6
LC	15	48.4	21	37.4
IV x LC	29	49.6	54	36.9
C x LC	28	48.2	43	37.8

Based on our results, it is advantageous to use early lamb weaning for high milk producing ewes.

Photo 1: Milk rearing of lambs in individual pens

Photo 2: Milking of ewes in a parallel parlour, located under shelter in the Specialized Farm in Trenčianska Teplá

Abstrakt

Chov oviec na Slovensku je zameraný na produkciu mlieka a mäsa. Šľachtenie a plemenitba v chove dojných oviec je zameraná na zvýšenie produkcie mlieka čistokrvnou plemenitbou alebo zošľachťovacím krížením. Pri priemernej produkcii mlieka za dojnú periódu, ktorá je okolo 100 l sa v chovoch nachádzajú aj vysokoprodukčné bahnice s produkciou viac ako 200 l. Prizošľachťovacom krížení baranmi plemena lacaune (LC) je výskyt takýchto bahníc početnejší. Po okotení majú bahnice vysokú produkciu mlieka pričom v prvých týždňoch jahňatá nestačia toto mlieko vycicať, najmä keď sú jedináčky. Aby nedošlo k zápalom vemena, musia ošetrovatelia bahniciam mlieko ručne oddájať. Preto sa pri dojných plemenách v zahraničí uplatňuje veľmi skorý odstav jahniat.

Klíčová slova: ovce, vysoká produkcia mlieka

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