

Effect of milk yield on growth of lambs of Merino and Mountain sheep

Dr. Ferdinand Ringdorfer, DI Martin Veit

Institute of livestock research, department of sheep and goats, AUSTRIA

Introduction

The main aim of sheep breeding in Austria is to produce lamb meat. Austrian mountain sheep and merino are the two breeds with the most animals.

An important factor to produce lambs with high quality is the milk yield of the ewes. High milk performance in the first 5-6 weeks of lactation is connected with a good growth of the lambs. To include milk performance in a breeding program it is necessary to know the milk yield. Merino and mountain sheep usually are not milked and it is the question how to guess the milk yield?

One possibility can be the body weight of the lambs. The question is at what time after lambing has the body weight of the lambs the best correlation to the milk performance of the ewe?



Milk yield of ewes is important for the growth of the lambs

Material and method

The effect of milk performance of sheep (30 Merino (M), 30 light (BL) and 30 heavy (BS) Mountain sheep) on weight gain of their lambs was studied. After lambing dams and their lambs were kept in an individual pen. Milk yield was estimated by the oxytocin-method twice a week. For that lambs were separated from their dams for three and a half hour. Body weight of ewes and lambs was recorded twice weekly. Ewes were fed with hay (ad lib.) and concentrate, depending on milk yield. Lambs had free access to hay and concentrate after day 14 of birth. All lactations were subdivided into 6 sections (I, II, III, IV, V and VI is day of lactation 6-10, 11-15, 16-20, 21-25, 26-30 and 3-35, respectively).

Table 1: Composition of concentrate and feeding value of feed stuff

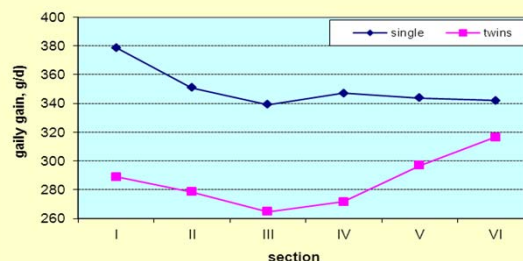
Feed stuff	ewes	lambs	hay-ewes	hay-lambs
barley	30,46	39,41		
maize	15,23	-		
dried sugar beet cuts	15,23	34,48		
oats	15,23	-		
soybean extraction meal	9,14	22,66		
Rape extraction meal	8,22	-		
minerals	1,51	1,97		
carbolic lime	3,42	-		
molasses	1,56	1,48		
crude protein, g/kg DM	169,00	205,86	120,00	151,77
energy, MJ ME	11,9	12,35	9,08	9,15
crude fibre, g/kg DM	77,39	94,44	317,00	295,23

Results

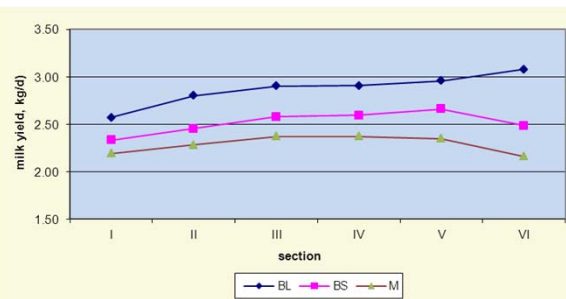
Milk yield was affected by breed ($P=0.001$), number of suckling lambs ($P=0.007$), and feeding conditions ($P=0.044$). The effect of breed became more important as lactation progressed while the number of suckling lambs lost its influence on milk yield.

The highest milk yield was estimated for light BL (3.08 kg/d) in section VI. Merino ewes had significantly lower milk yields in all sections and peaked by 2.37 kg/d.

Ewes nursing twins produced 0.5 kg more milk per day than ewes with singles. This effect was greatest for BL with 23 % more milk. Regarding daily weight gain of lambs, milk yield lost significance as lactation progressed (section II and VI, $P=0.014$ and $P=0.226$, respectively), while concentrate intake gained influence until it reached significance in section V ($P=0.011$). Further factors affecting daily lamb weight gain were the number of suckling lambs, breed of the ram, and birth weight with $P=0.001$, $P=0.011$ and $P<0.001$, respectively.



Graph 1: Daily gain of lambs depending on birth type



Graph 2: Daily milk yield depending breed

Conclusion

In the interval from day 6 to day 30 of lactation milk yield ($P=0.039$), birth weight ($P<0.001$) and number of suckling lambs ($P=0.005$) had a significant effect on lamb weight gain. Thus, knowing the birth weight, the number of suckling lambs and the daily weight gain until day 30 post partum, an inference on ewes' milk yield can be made.

