P. Lyutskanov, O. Mashner, I. Tofan. The results of crossbreeding of Bentheimer rams with Tsigay ewes

The research has been carried out on a sheep-breeding farm "Donastas-Com" Ltd in Leova region. The object of research was a number of Tsigay ewes, Bentheimer rams of milk productivity, crossbred offspring and crossbred ewes. Growth and development of lambs were studied by individual weighing at birth, at the age of 3-3.5 months and at the age of 6-6.5 months in accordance with standard practice, and at the age of 12-13 months classified evaluation is used. When studying the exterior of 10 Tsigay ewes and 10 mixed bred ewes ♀Tsigay X ♂ (♀Tsigay x ♂Bentheimer), ♀Tsigay x ♂Bentheimer and ♀ (♀Tsigay x ♂Bentheimer) x ♂Bentheimer body measures have been done and main build indexes have been calculated. Udder measuring was taken at 12 ewes of first and second lactation of pure breed Tsigay and ♀Tsigay x ♂Bentheimer cross breed.

Milking ability has been studied during the first twenty days after parturition and was calculated from multiplying lamb weight gain by ratio 5.35, and then, during milking period, by means of controls milks. Chemical composition was studied using the device Lactoscan MCC.

The results of lambs growth and development obtained at different age periods demonstrate that young rams' live weight at birth is higher than that of ewe-lambs at mass limit 4.68 – 4.04 kg of young rams and 4.13 – 3.68 kg of ewe-lambs. Young rams of ♀Tsigay x ♂Bentheimer and ♀ (♀Tsigay x ♂Bentheimer) x ♂Bentheimer cross breeds are characterized by high growth dynamics in the suckling period with average live weight of 24.24 kg and 23.57 kg in comparison with their herdmates ♀Tsigay X ♂ (♀Tsigay x ♂Bentheimer) and Tsigay; ewe-lambs' live weight of the same cross breeds is higher as well – 21.60 kg and 22.10 respectively. At the age of 6-6.5 months the trend continues for young rams, as for ewe-lambs. Certainty of difference at ewe-lambs data – $P \leq 0.05$. For this period, ♀ (♀Tsigay x ♂Bentheimer) x ♂Bentheimer crossbred ewes' live weight was 26.75±0.45 kg, which is higher by 1.15 kg in comparison with Tsigay ewes, and by 1.02 kg in comparison with ♀Tsigay x ♂Bentheimer ewes. Since the weaning and till the age of 6-6.5 months mortality rate of ewes is low, in other words, climatic adaptation is good.

At the age of 12-13 months ewes classified as superstrain of ♀ (♀Tsigay x ♂Bentheimer) x ♂Bentheimer have reached live weight of 40.50±0.78 kg, of ♀Tsigay x ♂Bentheimer – 41.30±0.33 kg, of ♀Tsigay X ♂ (♀Tsigay x ♂Bentheimer) – 39.70±0.51 kg and of Tsigay – 41.92±0.31 kg.

Cross breed ♀ (♀Tsigay x ♂Bentheimer) x ♂Bentheimer had higher values at all body built indexes, as compared to ♀Tsigay X ♂ (♀Tsigay x ♂Bentheimer) and ♀Tsigay x ♂Bentheimer breeds. Cross breed ♀ (♀Tsigay x ♂Bentheimer) x ♂Bentheimer ewes exceed Tsigay ewes by 1,1% in terms of overextension, 3,6% at thoracic index, 5.8% at blockiness and 0.3% at the index of bone.

From evidence derived after growth and development analysis, we can conclude that ewes of ♀ (♀Tsigay x ♂Bentheimer) x ♂Bentheimer cross breed on the studied parameters exceed pure Tsigay, ♀Tsigay X ♂ (♀Tsigay x ♂Bentheimer) and ♀Tsigay x ♂Bentheimer cross breeds.

When studying the influence of using Bentheimer stud rams of milk type imported from Germany with the purpose of milk productivity increase at Tsigay

breed, cross breed ♀Tsigay x ♂Bentheimer bred in Republic of Moldova and pure Tsigay sheep on the first and second lactation, following parameters were analyzed: udder measures, milking ability in the first twenty days after parturition, milk productivity during milking period and chemical composition of milk.

Udder measures taken at Tsigay ewes and ♀Tsigay x ♂Bentheimer ewes at the first and second lactation compared together, demonstrate that ♀Tsigay x ♂Bentheimer values are higher than those of Tsigay sheep both of the first and second lactation. The values of the second lactation are higher than those of the first for both groups. One of the main measures specific for the udder – udder volume – is higher by 349 cm3 at the first lactation and by 254 cm3 at the second lactation. Udder width and depth at the second lactation are larger by 1.8 cm ($P \leq 0,05$) and 1.49 cm ($P \leq 0,01$) respectively, as compared with Tsigay ewes.

At the first lactation, during the first twenty days after parturition, milking ability of cross bred ewes with single-born offspring is higher by 1.65 l ($P \leq 0,001$) and by 0.5 l - with twin offspring, in comparison with Tsigay ewes. At an average milking ability of cross bred ewes is higher by 1,41 l ($P \leq 0,01$) compared with Tsigay ewes.

When analyzing the milking ability of the second lactation ewes, the trend persists. Milking ability of cross bred ♀Tsigay x ♂Bentheimer ewes with single-born offspring is higher by 0,94 l ($P \leq 0,01$), with twins by 1,97 l, and the group average by 1,88 l ($P \leq 0,01$).

Milk productivity for 120 days of milking period at cross bred ewes has reached 65.2 litres, which is by 7 litres or 12% higher than at Tsigay ewes. Average daily milk production of Tsiagy ewes at the first lactation amounted to 472.5 ml, at the second lactation – 497.5 ml, or higher by 25.0 ml (5,3%); average daily milk production of cross bred ewes amounted to 533.3 ml, at the second lactation – 553.3 ml, or higher by 20.0 ml (3.8%).

For the whole period of the first lactation the parameters of the chemical composition of milk of ♀Tsigay x ♂Bentheimer cross breed as compared to Tsigay breed are as follows: fat percent is lower by 0.05, the remaining parameters are higher, nonfat milk solids is higher by 0.05; protein – by 0.08; lactose – by 0.07; salts – by 0.01; density – by 0.6. At the second lactation all the parameters of ♀Tsigay x ♂Bentheimer cross breed milk were higher by 0.35; 0.58; 0.12; 0.12; 0.02 and 0.77 respectively.

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