

Milk productivity of offspring depending on the milk productivity of mothers of holstein cows

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Abstract. As a result of scientific research, the milk productivity of Goldsmith cows was studied depending on the productivity of their mothers. Under conditions of homogeneous feeding and conservation, the milk productivity of their mothers in cows of group III was 4545.0 kg, in cows of group II - 5189.0 kg, in cows of group I - 321.0 kg, and the amount of milk received by their daughters for 1 lactation was 520.3 kg or 15.9% ($P>0.999$) and 196.0 kg or 5.5% ($P>0.95$), respectively, the fat content in milk is 18.3 kg or 14.8% ($P>0.999$) and 6.6 kg or 4.9% ($P>0.99$), the protein content in milk is 16.2 kg or 14.5% ($P>0.999$) and 6.0 kg or 4.9% ($P>0.95$)., A milk mixture with a content of 4% is 456.0 kg or 14.7% ($P>0.999$) and 165.0 kg or 4.9% ($P>0.95$), the milk ratio is 70.5 kg or 9.1% ($P>0.999$) and 19.5 kg or 2.4%, the average daily milk content is 1.7 or 15.7%. ($P>0.999$) and 0.7 kg, or 5.9% ($P>0.95$), were high.

1 Introduction

Among the cattle breeds planned for breeding in Uzbekistan, Black-Ola cattle are second only to the Holstein breed in terms of head count and productivity. Nevertheless, this breed of cattle needs further improvement, because in many farms, the milk yield of cows is not at the required level, there is a decrease in the fat content of the milk, there are defects in the quality of the udder and the exterior. In order to eliminate these shortcomings, selection and sorting of cattle of this breed under conditions of good feeding and care is one of the important tasks of selection and breeding. Also, it is important to fully use the genetic potential of breeds specific to the world gene pool in improving the Black-Ola breed [1-3].

Golishtin cattle are currently one of the leading breeds in the world, and the Golishtin breed is widely used to increase milk productivity and improve it. The productivity of the offspring obtained from the cross-breeding is closely related to the productivity of the parents, therefore, it is important to carry out selection and sorting work taking into account this factor, to increase the picture of creating high-yielding herds, but the extent to which the productivity of the mothers affects the milk productivity of cows in such cross-breeding is not scientifically substantiated. That is why research in this direction is relevant and has important scientific and practical value [5-10].

The purpose of the study is to study the productivity of the first-generation cows obtained from crossing Black-Ola breed cows with Holstein bulls [4, 11-14].

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2 Materials and Methods

The research was conducted in the farms of Tashkent region during 2015-2020. For the experiment, 3 groups were formed, taking into account the milk yield of the mothers, the origin of the fathers, the age, live weight, calving periods, breed of the experimental animals according to the signs of similarity. A total of 14 first calving cows were selected based on the study image.

Table 1. Research image

Group	Number of heads	Milk yield of cows' mothers, kg	Duration of experience
I	14	3000-3500	I lactation
II	14	3501-4500	I lactation
III	14	4501 and above	I lactation

The obtained data were re-biometrically processed according to the method of E.K. Mercure (1970).

3 Results and Discussion

Wide use of high-yielding cows in breeding is important, because not only high productivity, but also high-quality offspring are obtained from them. In this case, the main task of selection and breeding is to ensure that in the next generation, a generation will be superior to its ancestors in terms of quality and productivity. The milk yield of experimental cows is shown in Table 1.

Table 1. Productivity indices of cows' mothers, $\bar{X} \pm S \bar{x}$ (n=14)

Indicators	I	II	III
Amount of milk, kg	3212,0±58,6	4245,0±63,2***	5189,0±144,0***
Milk fat, %	3,70±0,06	3,78±0,07	3,73±0,05
Fat yield of milk, kg	118,5±2,81	160,5±4,20**	193,5±6,30***
Live weight, kg	442,3±10,5	440,7±10,7	500,0±9,2**
Dairy coefficient	726,2±18,3	963,2±21,2*	1038,0±23,9**

Reminder: *P>0,95 , **P>0,99 , ***P>0,999

As can be seen from the data of Table 1, there is a difference between the milk yield of mothers of cows in the experiment. The amount of milk of cows of high productivity group III was 1977 kg or 61.5% (P>0.999) and 944 kg or 22.2% (R>0.999) compared to that of group I and II cows, and the amount of fat in milk was 75 kg or 63, respectively, 2% (R>0.999) and 33 kg or 20.4% (R>0.999), live weight 57.7 kg or 13.0% (P>0.999) and 59.3 kg or 13.5 % (P>0.99), milk production coefficient was 311.8 kg or 42.9% (P>0.999) and 74.8 kg or 7.8% (R>0.95).

When comparing the milk quantity of the cows in the groups with the requirements of the current model of the Black-Ola breed, the milk quantity of the cows in the I group was 288 kg (8.3%) less than the requirement for the productivity of mature cows according to the model requirement, while in the II group it was 745 kg (21.3 %) and 1689 kg (48.2%), milk fat output was 7.5 kg (6.0%) less in group II, 34.5 kg (27.4%) in group II and in the group it was 67.5 kg (53.6%) higher.

The level of fat in milk was 0.10% higher than the standard requirements of the black and white breed in group I, 0.18% in group II and 0.13% in group III, while the live weight of cows in group I was 57.7 kg higher than the standard requirements of the breed. , in the

II group it was 59.3 kg lower, and in the III group it was found to be equal to the standard requirement (500 kg). It was found that the fathers of the cows in the experiment had 7391 kg of fat 3.96% milk, 3.94% and 7482 kg in group III, 3.95% and 7526 kg of milk in group III.

Milk yield is one of the most important indicators when evaluating the breeding value of cows. The study of the milk yield of the first-generation cows obtained from the crossbreeding of Black-Ola breed cows with Holstein bulls is also one of the important indicators in the evaluation of network efficiency. Table 2 shows the milk productivity of the cows in our experiment.

Table 2 data analysis showed that higher milk productivity was observed in group III cows. For example, the amount of milk produced by group III sows during the 1st lactation was 520.3 kg or 15.9% ($R>0.999$) and 196.0 kg or 5.5% ($R>0.95$), milk fat yield by 18.3 kg or 14.8% ($R>0.999$) and 6.6 kg or 4.9% ($R>0.99$), protein yield by 16.2 kg or 14.5% ($R>0.999$) and 6.0 kg or 4.9% ($R>0.95$), the amount of 4% milk was 456.0 kg or 14.7% ($R>0.999$) and 165.0 kg or 4.9% ($R>0.95$), the coefficient of milk yield was 70.5 kg or 9.1% ($R>0.999$) and 19.5 kg or 2.4%, average daily milk yield was higher by 1.7 or 15.7% ($R>0.999$) and by 0.7 kg or 5.9% ($R>0.95$).

Table 2. Cows in our experiment were milked during I lactation milk yield

Indicators	Groups, (n=14)					
	I		II		III	
	$\bar{X} \pm S \bar{x}$	Cv, %	$\bar{X} \pm S \bar{x}$	Cv, %	$\bar{X} \pm S \bar{x}$	Cv, %
Lactation is the amount of milk expressed, kg	3268,7±67,5	7,45	3593,0±65,1*	6,53	3789,0±56,0**	5,39
Fat in milk, %	3,79±0,02	1,72	3,77±0,02	1,57	3,75±0,01	1,05
Protein content of milk, %	3,42±0,02	1,86	3,40±0,01	1,44	3,38±0,01	1,05
Fat yield in milk, kg	123,8±2,0	5,81	135,5±1,9**	5,20	142,1±1,7***	4,36
Protein yield in milk, kg	111,8±1,8	5,69	122,0±1,8*	5,40	128,0±1,6***	4,38
Amount of 4% milk, kg	3096,0±50,1	5,83	3387,0±48,6***	5,17	3552,0±43,6***	4,43
Coefficient of milk production, kg	771,1±12,9	6,06	822,1±8,1	3,55	841,6±7,1	3,02
Average daily milk yield, kg	10,8±0,21	6,99	11,8±0,22	6,87	12,5±0,17	4,78
Dry matter, %	12,27		12,24		12,22	
Non-fat dry matter of milk,%	8,64		8,64		8,63	

Reminder: * $P>0,95$, ** $P>0,99$, *** $P>0,999$

Also, the amount of milk of cows of group II compared to cows of group I was 324.3 kg or 9.9% ($R>0.99$), the yield of fat in milk was 11.7 kg or 9.5% ($R>0.999$), protein yield increased by 10.2 kg or 9.1% ($R>0.999$), 4% water content increased by 291.0 kg or 9.4% ($R>0.999$), milk production coefficient increased by 51.0 kg or 3.6 % ($R>0.99$), average daily milk yield was 1.0 kg or 9.3% higher ($R>0.95$).

It should be noted that the fat and protein values in the milk of cows of all groups were higher than the standard requirements of the Black-Ola breed. For example, the level of fat in the milk of cows in group I is 0.19% of the standard requirement of the breed, in group II

by 0.17% and in group III by 0.15%, and the protein level in milk is 0.22, respectively; 0.20 and 0.18% were higher.

The amount of milk in group I is 768.7 kg or 30.7%, in group II is 1093 kg or 43.7%, and in group III is 1289 kg or 51.5%. It was found that it increased by 33.8 kg or 37.5%, 45.5 kg or 50.5% and 49.4 kg or 57.9%.

In our studies, the coefficients of variation in milk volume, milk fat and protein yield were somewhat higher in all groups, which indicates that Holstein cows have the potential for extensive breeding for these traits. Similar results were obtained by Ilinsky A.A. (1971), Jebrovsky L.S., Komissarenko A.D. and Mityutko V.E. (1980), the authors concluded that selection and mating for these economically useful traits are important in creating high-yielding herds.

4 Conclusion

It was observed that the ancestors of cows of the III group in the experiment had higher productivity compared to the ancestors of the cows of the I and II groups. This makes it possible to create high-yielding herds in the future by carrying out selection work with high-yielding cows, especially organizing them in the "order" method.

Also, offspring obtained from high-yielding cows achieved higher milk yield than their counterparts obtained from relatively low-yielding cows under uniform feeding and maintenance conditions. This indicates that it is important scientific and practical importance to organize the selection and selection of cows taking into account the milk yield.

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