

Milk Productivity of Holstein Cows of Different Genotypes

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Abstract: With the aim of further improving the economic performance of the planned black-and-white breed, Holstein bulls are widely and effectively used in subsequent years. As a result, Holsteinized offspring with different genotypes were obtained. The article presents data obtained as a result of studying the milk productivity of Holsteinized cattle.

Keywords: breeding farm, black-and-white Holstein breed, Holsteinization, live weight, milk, milk, fat yield, protein.

INTRODUCTION

Introduction. The Black and white breed of planned cattle breeds bred in the republic's farms ranks first in terms of its number and milk productivity of cows. In order to further improve the economic benefits of this breed, in recent years, the Holstein breed bulls, which are related to the Black and white breed, have been widely and effectively used from the world gene pool. As a result, Holsteinized offspring of various genotypes were obtained, the study of their exterior, fertility, technological and other selection and genetic indicators associated with the type of constitution plays a special role in creating highly productive herds for certain environmental conditions and improving the economic benefits of the breed.

In order to rapidly develop the livestock sector, introduce modern and innovative methods, increase the volume and range of products, as well as continuously provide the population with high-quality and affordable livestock products produced in local conditions, and provide state support to enterprises specializing in livestock breeding, the Resolution of the President of the Republic of Uzbekistan No. PQ-4576 dated January 29, 2020 "On additional measures for state support of the livestock sector" is being implemented, which is a program for the sustainable development of the entire livestock sector [1].

Materials and methods of research. The experimental part of the scientific research was carried out at the "Agro Goldin Spring" cattle breeding farm in the Pakhtachi district of the Samarkand region. One of the most important breeding methods for improving the milk productivity of cows and creating high-yielding herds is crossbreeding. The use of breeding bulls of high genetic potential in crossbreeding allows you to increase the rate of improvement of milk productivity and other main selection traits of cows. For this, 10 purebred black-and-white cows were selected from group I, Holstein-bred F1 cows obtained from crossing Holstein bulls from group II, and F2 first-year cows from group III were selected on the basis of similarity. Since 2024, the farm has been artificially inseminated with the sperm of Holstein black-and-white bulls 833374 Rafina, 833160 Beletto and 833272 Merian PP. The mothers of these bulls have produced 10,539 to 15,272 liters of milk in 2 lactations.

M.Kh. Dosmukhamedova, U.M., Nosirov noted that the Holsteinized black-and-white breed, the Holstein genotype, showed a high genetic potential for productivity in cows. Under special technological conditions, the milk yield of cows increased by 43-66 percent. It was found that the external characteristics of animals, the type of milking, the ability to adapt to external environmental conditions, the technology of milking by lactation phases, their ability to adapt to external environmental conditions are interconnected with their productivity indicators [2].

According to B.M. Ashirov, a positive high-level correlation coefficient was found between the amount of milk produced by cows and the yield of milk fat, 4% milk, the milk yield coefficient, and between the yield of milk fat and the amount of milk at 4%, and it was concluded that selection work in the herd based on these correlation coefficients is of great practical importance in increasing the rate of their improvement [3].

According to M.K. Narbayeva, A.K. Kakharov, R.Sharipov, improving some selection traits of the Black and white breed with the Holstein breed has also yielded high results in the southern regions of the Republic of Uzbekistan. Crossbred cows produced 75.0 kg or 6.8% more milk than purebred Black and white cows. Differences between groups were also identified in terms of milk quality indicators. The amount of net profit obtained was, respectively: 181.0; 252.8 and 203.1 thousand soums and provided the efficiency of the experiment to be 46.7; 64.1 and 50.9 percent [5].

Analysis and results. It is known that milk yield is the main indicator in assessing the economic benefits of cows. The level of milk coverage of cows is of particular practical importance in increasing milk production efficiency and indicates the efficiency of using cows in dairy herds. Therefore, based on the method of our research, we calculated the milk yield of experimental cows during lactation based on generally accepted methods and presented it in Table 1 below.

Table 1.

Milk yield of I-lactation cows in experimental groups. (n=10)

Indicators	Groups		
	I	II	III
	$\bar{X} \pm Sx$	$\bar{X} \pm Sx$	$\bar{X} \pm Sx$
Milk yield, kg	4270,6±71,0	4420,7±75,0	4470,6

Fat in milk %	3,94±0,035	3,93±0,026	3,91±0,03
Milk fat yield, kg	168,2±2,03	173,7±2,10	174,8±3,11
Milk protein, %	3,57±0,02	3,56±0,01	3,55±0,01
Milk protein yield kg	152,4±1,78	157,2±1,93	158,7±1,15
4% milk yield	4232,2±49,7	4374,3±54,5	4410,2±77,0
Live weight kg	450,3±4,69	469,1±2,82	489,7±2,25

Group I cows in the experiment, i.e. purebred black-and-white, gave an average of 4270.6 kg of milk during lactation, which is 150.1 kg less than their first-line crossbred counterparts in group II and 200.0 kg less than their second-line crossbred counterparts in group III. The difference in milk yield between cows in groups II and III was 49.9 kg in favor of the latter. It should also be noted that among cows in group III there were cows that gave up to 4500 kg of milk. This indicates that Holstein-bred cows have a high genetic potential for milk yield.

When assessing the efficiency of using cows in dairy herds, it is of particular importance to study the indicators of milk production per 100 kg of live weight.

Determining the optimal live weight of cows that ensures high milk productivity is of great scientific and practical importance in ensuring increased milk production. With this in mind, we studied the milk production of cows in the experimental groups per 100 kg of live weight.

Table 2

Dairy product yield per 100 kg of live weight of cows, kg n=10

Indicators	Groups		
	I	II	III
Live weight, kg	450,3±4,69	469,1±2,82	489,7±2,25
Milk yield, kg	4270,6±71,0	4420,7±75,0	4470,6
4% milk, kg	4232,2±49,7	4374,3±54,5	4410,2±77,0
Per 100 kg of live weight produced:			
Milk yield, kg	948,3	942,5	918,4
4% milk, kg	939,8	932,4	905,9
Milk fat yield	37,3	37,0	35,9

As can be seen from the data in Table 2, in the first lactation, cows in all groups had high milk production indicators per 100 kg of live weight. In this case, it was found that the amount of milk produced by cows in the first experimental group was 5.8 and 24.1 kg, the milk fat yield was 0.3 and 1.4 kg, and the amount of 4% milk was 7.4 and 33.4 kg higher than the indicators of cows in the second and third experimental groups.

Conclusion. Regardless of lactation, the milk product output of cows in the experimental groups was high per 100 kg of live weight. This indicates that the use of such cows is an important factor in increasing the efficiency and creating highly productive herds.

Literatures.

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