



Correlation Between Some Economic Traits of Holstein Breed Cows

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Annotasiya: The article highlights the information obtained by analyzing the correlation of indicators of live weight and morphofunctional features of the udder with indicators of milk productivity of Holstein cows. It was found that there is a positive correlation between the live weight and milk yield for lactation, as well as between the size of the udder and milk productivity. A negative correlation was noted between the value of milk yield with fat-milk content and protein-milk content of cows.

Keywords: Holstein breed, live weight, udder, lactation milk, milk fat, milk fat yield, milk protein yield, correlation, correlation coefficient.

Introduction. In recent times, when creating high-yielding breeding herds of dairy cattle, great attention is being paid to the selection of cows based on the morphological and functional characteristics of the udder, because the transfer of milk production to an industrial basis requires selection work in this direction. In addition to high milk productivity, cows are suitable for milking with modern machines, which is an important factor in increasing production efficiency, i.e. transferring milking to machines, which is the most laborious process in milk production [5].

Holstein cows are characterized by the shape, size and functional characteristics of the udder, which are highly adapted to machine milking [1]. Crossbreeding of dairy cattle with Holstein bulls leads to improved udder parameters in the resulting hybrids [4]. The most important of these indicators are udder shape, size, and udder fluidity [3]. There is a positive correlation between udder size and milk yield.

Material and methods. The study of the correlative relationship between live weight, morphofunctional characteristics of the udder and milk yield of Holstein cows was carried out in the conditions of the "Karpat-ola Chashmasi" farm in the Yakkabog district of Kashkadarya region.

The milk production of cows was determined by performing a control milking once a month. In this, the amount of milk expressed in the morning and evening was measured and the amount of daily milk was determined, the amount of monthly milk was determined by multiplying the daily amount by the number of days in the month, and the amount of monthly milk was summed up by the months of lactation, and the total amount of physical milk in lactation was calculated. The amount of fat in milk was determined once a month during control milking by Gerber's acid method, the amount of

protein - by formalin titration, and the amount of total dry matter - by calculation.

Evaluation of the morphological and functional characteristics of the udder of cows of the first calving age was carried out in the second and third months of lactation according to the generally accepted methodology in zootechnics.

The data obtained as a result of the experiments were subjected to biometric processing by calculating the arithmetic mean value and its error, the mean square deviation, and the coefficient of variation (variation) based on the requirements of variational statistics developed by N.A.Ploxinsky and E.K.Merkure [2]. The reliability level of differences between groups was determined using the Student's table. Correlation coefficients between characters were determined by calculation.

Research results. Modern genetics is the basis of selection and breeding work, the correct assessment and analysis of quantitative and qualitative indicators of animals is carried out by calculating the main biometric parameters - arithmetic mean, coefficient of variation of signs, coefficient of heredity, correlation between signs, selection differential and other indicators. Among these indicators, the interrelationship between economic and useful signs of animals has a special place. Based on this, the correlation coefficient between the main economic and useful signs of the cows in the experiment was calculated (Table 1).

It is known that the correlation coefficient is an indicator that expresses the relationship between two or more characteristics and has a positive and negative value between 0 and 1. The closer the indicator is to 1, the higher the correlation between the signs. The correlation coefficient is a relative magnitude and has different values in different herds and populations.

As can be seen from Table 1, there is a negative correlation between the amount of milk in lactation and the average fat content of milk, that is, as the amount of milk in 305 days of lactation increases, the average fat content of milk decreases. This negative situation can be eliminated by purposeful organization of selection and mating activities in the future.

A positive correlation was found between the amount of milk in lactation and live weight of cows. This association was particularly evident in cows in the experimental group ($P=0.51-0.58$). So, growing bodies by intensive growth allows to increase milk yield. The large size of cows means that the gastrointestinal system is bulky, and the reserve capacity for receiving large amounts of feed and turning it into milk products increases.

Table 1 Correlation coefficient between some economic characteristics of cows in the experiment.

Signs	Groups		
	Control	I experiment	II experiment
Milk content – fat content of milk	-0,38	-0,35	-0,33
Body weight – live weight	0,42	0,51	0,58
The quantity of milk – the coefficient of milk yield	0,68	0,72	0,74
Daily lactation – the rate of milking	0,45	0,52	0,64
Udder circumference-daily milk	0,48	0,65	0,72
Amount of milk - output of milk fat	0,62	0,74	0,82
Amount of milk - milk protein extract	0,44	0,52	0,68

It was found that there is a high positive correlation between the milk yield of cows at 305 days of lactation and the amount of milk produced per 100 kg of live weight. This indicator was higher (0.72 – 0.74) in experimental cows.

A positive correlative relationship was noted between the daily milk yield of cows and the rate of milking. This indicator is also very important, and it allows us to conclude that the higher the rate of milking, the higher the milk productivity of the cow.

Among the sizes of the udder, the size of the circumference of the udder is an indicator that describes its size. A positive correlation between udder circumference size and daily milk yield was present in

cows of all groups, and this association was higher in cows of experimental groups by 0.17-0.24 units, respectively, compared to control group.

Also, it was found that there is a positive correlation between milk yield and milk protein yield in lactation with the amount of milk in the 305th day of lactation. Such a positive correlation coefficient was higher in cows in experimental groups.

Summary. The results of the conducted scientific research show that there is a positive correlation between the live weight of cows of the first calving age and the amount of milk in their lactation. Also, the size of the udder has an effective and positive effect on the milk yield of cows, therefore, in order to increase the milk yield of cows, it is advisable to carry out activities aimed at developing their udder during the heifer period.

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