

M. V. Gladiy, G. S. Kovalenko, S. V. Priyma, G. O. Golyosa, A. V. Tuchy, L. V. Marchuk, V. P. Otsabryk, B. B. Lyolya. Comparative characteristics of milk productivity of Ukrainian Red-and-White Dairy, Ukrainian Black-and-White Dairy and Holstein cows in SE «Research Farm «Oleksandrivske»

The main goal of dairy breeds selection should be improving breeding and productive qualities of animals under modern conditions. The majority of farms, using native breeds to produce milk, has created optimal conditions for keeping and feeding, selection and matching, growing of replacements etc. Further improvement of created native dairy breeds for economically useful traits occurs at total use of purebred Holstein bulls (semen) of foreign selection. In order to realistically assess milk productivity (milk yield, fat content in milk and fat yield) of Ukrainian Black-and-White and Red-and-White Dairy cows should be conducted a comparative analysis of Holstein cows under the same conditions of feeding and keeping.

It was established that Ukrainian Red-and-White Dairy cows were characterized by the highest milk yields for 305 days of all lactations, taken into account, the among three investigated breeds. Their milk yield during the first lactation was 5933 kg of milk, during the second – 6393 kg, the third – 6391 kg and during higher lactation – 6650 kg. Ukrainian Black-and-White Dairy cows were second by milk yield (except for the second lactation), during the first lactation – 5932 kg of milk, the third – 6462 kg and higher – 6541 kg, and Holstein cows were third, during the first lactation – 5794 kg of milk, the second – 6381 kg, the third – 6335 kg and higher – 6469 kg.

The fat content was almost the same and varied within 3.49-3.58% in milk of Ukrainian Red-and-White Dairy cattle, 3.50-3.60% in milk of Ukrainian Black-and-White Dairy cattle and 3.50-3.56% in Holsteins' milk. The difference between the breeds was within 0.01-0.04%.

All the investigated breeds had predominance in fat yield for three lactations over standards of these breeds: Ukrainian Red-and-White Dairy cows from 75.1 to 93.4 kg, Ukrainian Black-and-White Dairy cows – 75.1-89.0 kg respectively and Holstein cows – 41.9-60.2 kg.

It was found different level of positive correlation between milk yield and fat yield in all the cases and high correlation ($r = 0.604-0.921$, $P < 0.001$) in five cases (41.7%)

Negative correlation coefficients indicate that selection of animals to higher milk yield in the herd will decrease the second trait – fat content in milk. Positive and highly significant correlation between milk yield and fat yield indicates that selection of cows in the herd to higher milk yields will increase fat yield.

It was revealed that bulls were among the factors impacted the milk productivity (milk yield, fat content, fat yield) of three investigated breeds. So, the force (η^2_x) of father's impact on milk yield was 15.4-47.9%, fat content – 22.0-43.4% and fat yield – 14.9-47.7% taking into account a lactation and a breed. The force of lines impact (η^2_x) was second; it was on milk yield 6.1-24.5%, fat content

– 4.1-17.1 and fat yield – 5.8-23.5%. The force of breeds impact (η^2_x) was last; it was on milk yield 0.3-2.9%, fat content – 0.2-0.3% and fat yield – 0.6-2.7%.

So, the comparative studies of milk productivity of Ukrainian Red-and-White and Black-and-White Dairy cattle with Holsteins indicate that under similar conditions of feeding and keeping, these native breeds can compete with Holstein cattle. The milk yield for 305 days of higher lactation was 6650 kg of milk in Ukrainian Red-and-White Dairy cows, 6541 kg in Ukrainian Black-and-White Dairy cows and 6469 kg in Holsteins.

It was found the inverse correlation $r = -0.025-0.316$ between milk yield and fat content in milk in most cases. Selection and matching of animals in the herd should be carried out simultaneously on these traits. It was found positive repeatability of milk yields between the first and second, the third and higher lactations ($r_s = 0.036-0.741$), indicating the reliability of forecasting increase in milk productivity during the next lactations in all herd. Bulls have the greatest impact (η^2_x) on milk productivity among the factors taken into account: milk yield – 15.4-47.9%, fat content in milk – 22.0-43.4% and fat yield – 14.9-47.7%.

***Keywords:* breed, lactation, milk yield, fat content in milk, fat yield, correlation, force of impact**