Y. V. Poslavska, E. I. Fedorovych, P. V. Bodnar. Exterior influence of Ukrainian Black-and-White Dairy first-calf heifers on the formation of their further milk productivity

Selection and breeding work, which is responsible for realization and further improvement of genetic potential of animals, has a significant role in solving problems of industry competitiveness of dairy sector. Increase of animal productivity due to better development of those body parts which impact on milk productivity directly or indirectly, and elimination of some defects in appearance, affecting on various economic useful traits of animals may be one of the breeding work directions. Considering the above mentioned, the aim of our research was to study dependence of milk productivity of Ukrainian Black-and-White Dairy cows on their body measurements during the period of their first lactation.

The research was conducted at Ukrainian Black-and-White Dairy cows in "Milk rivers" LLC of Sokal district, Lviv region. Exterior of first-calf heifers (measurements of withers height, the depth of the chest, chest width, chest girth for scapula, oblique body length (by stick), width in hips, girth of metacarpus) and evaluation of dairy cow productivity during the first, second, third and better lactation (milk yield, fat content in milk, the amount of milk fat) were carried out according to the data of zootechnical accounting (during last 30 years).

It was revealed that the experimental first-calf heifers had proportional development of a body, a deep and voluminous chest. Withers height was 131,0, chest depth – 73,1, chest width – 45,2, chest girth for scapula – 192,7, oblique body length – 156,3, width in hips – 51,8 and girth of metacarpus – 18,6 cm. It should be noted that the animals on most of the evaluated measurements, slightly, but prevailed the target parameters for the desired type of Ukrainian Black-and-White dairy cattle (exception – chest width). Narrow chests of the first-calf heifers were inherited from Holstein bull-sires, which for the recent decades, have widely been used in domestic herds of cattle. The variability level of the investigated measurements of a body was low; it testifies the consolidation of the herd. According to the measurements it was within 3,11–9,79 %. It should be noted that measurements of chest width (9,79 %) and width in hips (8,11 %) were observed with the highest variability.

The milk yields of the Ukrainian Black-and-White Dairy cows of the herd were 3728,2 kg during the first lactation, 3936,8 kg during the second, 4375,2 kg during the third and 4446,3 kg during the best, fat content in milk – 3,86; 3,80; 3,78 and 3,82 % respectively and the amount of milk fat – 143,8; 149,7; 165,5 and 169,8 kg.

As a result of the research we found the dependence of milk productivity of the cows on their body measurements during the first lactation. The highest milk yield and the amount of milk fat were characterized for animals, which withers height was 130–132, the depth of the chest – 74–76, the width of the chest – 43–45, chest girth – 195–199, oblique body length – 155–159, width in hips – 55–57, girth of metacarpus – 18,1–19,0 cm during the first lactation. According to the abovementioned indicators of milk productivity, they exceeded animals of all other experimental groups, but this predominance was significant only in some cases.

High significant relationships between exterior measurements of the first-calf heifers and their further milk production were revealed. The correlation coefficients between body measurements of first-calf heifers and milk yields, depending on

measurement and lactation, were within 0,100-0,388, between body measurements and fat content in milk – within 0,145–0,347 and between body measurements and the amount of milk fat – within 0,132–0,388, and share of impact of measurements on these indicators of milk productivity – within 8,68–36,38; 10,80–28,42 and 8,83–34,96 % respectively.

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