STRUCTURAL FORMATIONS OF UKRAINIAN BLACK-AND-WHITE DAIRY CATTLE AND THEIR CHARACTERISTICS BY ANIMAL'S USEFUL TRAITS

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The breeding female characteristics of Ukrainian Black-and-White Dairy interbreed and regional types have been presented by the following parameters: cow milk performance, population size, exterior and disposal causes.

It was established the milk yield advantage of Central-Eastern interbreed type cows over Western interbreed type cows (+1227 kg of milk). Majority of the first-calf cows of Ukrainian Black-and-White Dairy cattle had bath-shaped udder and average milk intensity from 1,83 to 2,06 kg/min.

Key words: cows, first-calf cows, interbreed type, regional type, milk performance, exterior, calving.

Introduction. A necessary condition for progressive development of breed is clearly organized structure, basic units of which are interbreed types, lines, regional types, and herds constituting total array of breeds and its breeding base [5, 7].

The current dairy cattle-breeding requires active development for producing relatively cheap, high quality, and competitive livestock product in a market economy in Ukraine and namely improving of existing cattle breeds. One of the breeds meeting the following requirements is Ukrainian Black-and-White Dairy breed created during long-term selection with improving its exterior and productive traits by a crossing method of improving breeds of world gene pool, and it has led to obtaining of diverse genotypes by animal's useful traits [2, 6, 7]. Currently the breed has been represented by the following structural units: five interbreed types – Polessian, Southern, Sumy, Western, and Central-Eastern and three regional types – Kyiv, Kharkiv and Podolian.

It would be noted that the most studies of the breed formations are based on assessment of some animal's useful traits of a herd, at best animals belong two or three herds; it gives no complete information about actual state of the whole array of the breed.

The research aim is comprehensive assessment of breeding female stock of interbreed and regional types of Ukrainian Black-and-White Dairy cattle for the following parameters: population size, exterior, disposal causes, as well as cow milk performance and growing intensity of breeding calves.

Further progressive development of Ukrainian Black-and-White Dairy breeding base requires efficient operation of all selection process components, because formation of interbreed selection structure – is a continuous process conducting throughout its breeding.

Material and methods. The type characteristics were being analyzed according to annual appraisal forms for 2013, the amount of farms was 195 including Polessian interbreed type (PIT) – 50, Southern (SoIT) – 17, Sumy (SuIT) – 7, Western (WIT) – 29, and Central-Eastern (CEIT) – 92 and regional types: Kiev (KRT) – 21, Kharkov (KhRT) – 5 and Podolian (PRT) – 37 herds.

Population size of breeding female stock, cow distribution by calving and milk performance in average by population of type and their selection groups, first-calf cows by udder shape and milk intensity, cow distribution according to the type of body constitution, disposal causes of animals and growing of breeding calves were being analyzed on the basis of breeding records.

Results. Breeding female stock of dairy cattle-breeding is main means of production, and its population size determines prospects of breeding and development of structural breed units. Central-Eastern interbreed type is the most numerous and productive one among Ukrainian Black-and-White Dairy interbreed types (57% of breeding females); its regional types (Kyiv, Kharkiv and Podolian) dominated over almost all the interbreed types by average milk yield of cows (Table).

The milk yield of Central-Eastern interbreed type breeding females had increased by 20% since type testing and they were 5799 and 6410 kg of milk respectively. The milk performance of Western interbreed type cows had decreased since the approval of structural breed formations (approved in 1996), milk yield

and milk fat content had decreased by 8% and they were 4490 and 164 kg respectively [1].

The advantage of the breeding cows by average milk yield from 84 kg (SuIT) to 654 kg (SoIT), by milk fat content from 0,02% (SuIT and CEIT) to 0,07% (PIT) and Southern interbreed type had a negative value (- 0, 05%). Kharkiv regional type cows have the biggest advantage by milk yield (486 kg) among the regional types and Podolian – by milk fat content (0,1%).

Describing first-calf cow weight by interbreed and regional types, it is notably that Western interbreed type cows differs slightly lower value of animal weight, but within the breed standard.

Indicators of animal's weight and milk yield of the first-calf cows varied from 490 and 4490 kg (WIT) to 513 and 5840 kg (SoIT), from 3,57% (PIT) to 3,78% (SoIT) by milk fat content. The first-calf cows had bath-shaped udder (56%), especially the animals of Southern and Sumy interbreed types (80%). First-calf cow weight of the regional types ranged from 503 kg (KRT) to 540 kg (KhRT), milk yield and milk fat content from 5556 kg and 3,61% (PRT) to 6435 kg and 3,84% (KhRT) respectively. Average milk intensity of all the first-calf cows was about 2 kg/min. (1,83-2,06).

Southern interbreed type first-calf cows had the most harmonious body composition on its evaluation (53% of first-calf cows had 90 and more total score).

It is known that the level of heifer growing at all ages has a significant impact on the animal's health and its subsequent milk performance, reproductive ability and time of productive use. Describing organization and technology of growing of Ukrainian Black-and-White Dairy youngsters by types it would be noted that majority of the structural formations of the breed complied the breed standard for animal's weight at the age of 6, 12 and 18 months.

Average age of cow use by the interbreed types was within 2,67-3,6 calving, the regional types – 2,2-2,88. The shortest average age at calving was observed in the cows of Central-Eastern interbreed type and its structural units (KRT and KhRT).

Describing distribution of the herd cows and breeding nucleus by calving it would be noted that the first-calf cows of breeding nucleus of Sumy and Western interbreed types were only 10-15% of the herd (Figure 1, Figure 2). The animals of Polessian interbreed type were differed by the longest period of herd use among all the structural formations of Ukrainian Black-and-White Dairy cattle, the parts of the herd cows and breeding nucleus cows of this type after 6-9 calving were 10% and 14% respectively.

Decisive factors of cow disposal were low performance, reproductive ability, and gynecological diseases (Figure 3, Figure 4). Trends of disposal causes of cows and first-calf cows by the interbreed and regional types remained, where average age of cow retirement by the types varied 3,6-4,37 calving. However, Kiev regional type cows were characterized by shorter term of herd use (3.20 calving).

Conclusions. Milk yield of Central-Eastern interbreed type breeding females had increased by 20% since type testing. Heifer weight of all the structural formations of Ukrainian Black-and-White Dairy cattle at the age of 6, 12 and 18 months complied the breed standard. Average milk intensity of all the first-calf cows was about 2 kg/min. Decisive factors of cow disposal for majority of the interbreed and regional types were low productivity and disturbance of reproductive ability.