

MILK PRODUCTIVITY OF NEW TYPE BLACK AND WHITE CATTLE

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Abstract

Within last three decades in Republic Moldova new zonal type of bovines of Black and White breed has been created. Animals of new type are characterized by high genetic potential of dairy production (7 - 9 thousand in kg of milk for lactation). On 53 best farms it is received on 5 - 7 thousand in kg of milk from each cow for a year of the new type. The young growth of the new type has good parameters of meat production. At intensive cultivation the daily average gain of alive weight has made 900 - 1100 grammes. At slaughter an output of carcass has made more 55%.

Key words: Black Mottled-new type, milk yield, beef production

INTRODUCTION

The breeds of large horned livestock earlier brought up in the Republic Moldova – Red of Steepe and Simmental. These breeds had low potential of the dairy efficiency, insufficient fitness to machine milking, did not meet the requirements of industrial conducting dairy cattle breeding. During the period since 1960 to 1974 work on crossing the specified breeds with Jersey race was carried out. At cross-breed cows the maintenance of fat in milk on 0,2-0,3 % has raised, but dairy efficiency remained at a level 3,0 - 3,5 thousand kg of milk for a year. In this connection the program of creation of new type of dairy cattle has been developed and realized.

MATERIAL AND METHOD

For creation of new type of cattle crossing cows of local populations Red of Steepe (RS) and Simmental (S) cows with bulls of Black and White (BW) and Holstein (H) breeds were carried out. With 1971 till 1976 in Republic Moldova 95 bulls - manufacturers have been delivered from Estonia, Ukraine, Moscow, Leningrad and Kaliningrad areas of 22,5 thousand heads of Black and White cattle, including on genealogic structure of 27,5 % of Black and White bulls concerned to a line of dutch bull Annas Adema 30587. The highest dairy efficiency of mothers (6539-6135 kg)

characterized manufacturers of lines Hiltce Adema 37910, Niko 31652 and Lindberg m-2363. In Republic Moldova bulls of many known lines of Holstein cattle from Germany, Denmark, the Great Britain, Bulgaria, Romania, Estonia, Lithuania, Russia, and other countries were delivered. Due to use of bulls Holstein breeds in republic the high genetic potential of dairy efficiency is created. Most the wide circulation was received with line Wis Bac Idiale 1013415.

Stage-by-stage use of bulls of improving breeds was planned. At the first stage of cows Red of Steepe and Simmental breeds crossed to bulls of Black and White breed, and received half-breed cows were crossed to bulls Holstein breeds. At the second stage half-breed animals with a high share of genes of improving breeds to breed in it self for fastening desirable attributes. In structure of new type there are two subtypes: „northern”, created on the basis of crossing Simmental cows with bulls of improving breeds and „southern”, created on the basis of crossing Red of Steepe cows with bulls of improving breeds.

RESULTS AND DISCUSSION

The basic stages of creation of new type of cattle: During 1975-1980 hybrids of the first generation from crossing local populations of cows Red of Steepe and

Simmental breed with bulls of Black and White breed have been received. Their biological features and productive qualities are investigated. Per 1981-1985 intermediate

genotypes have been received and studied. The factors to milk productivity of cow of first generation were provided in table nr. 1.

Table 1 Efficiency of cows (the first generation) for 305 days for first lactation

| The studied variants of the crossbreeding the breeds | n | It is received milk | | ± In comparison with local population of Simmental and Red Steepe breed | | ± In comparison with standard of the new type cattle | |
|--|-------------|---------------------|-----------------|---|-----------------|--|-----------------|
| | | milk (kgs) | fat in milk (%) | milk (kgs) | fat in milk (%) | milk (kgs) | fat in milk (%) |
| Simmental x Blak and White | 1087 | 3136 | 3,63 | +447 | -0,04 | +136 | +0,03 |
| Simmental x Holstein | 1116 | 3385 | 3,69 | +696 | -0,07 | +385 | - |
| On an average of F₁ | 2203 | 3262 | 3,61 | +573 | -0,05 | +262 | +0,01 |
| Red of Steepe x Blak and White | 1839 | 3192 | 3,68 | +376 | - | +292 | +0,08 |
| Red of Steepe x Holstein | 475 | 3312 | 3,66 | +496 | -0,02 | +412 | +0,06 |
| On an average of F₁ | 2314 | 3216 | 3,67 | +400 | -0,01 | +316 | +0,07 |

Our studies proved that cows of the first generation from crossbreeding cows local population of the Simmental and Red of Steepe breed with the bulls of the Black and White and Holstein breed in comparison with local breed had a more high factors to milk productivity and some contents of fat in milk. In comparison of the standard of the new type of Black and White breed had an advantage on milk productivity. Cows of the first generation from crossbreeding the Simmental cows of locale population with the bulls of the Black and White and Holstein breed in comparison with cows of the first generation from crossbreeding Red of Steepe

cows with the bulls of the Black and White and Holstein breed had a more high factors to milk productivity and some contents of fat in milk.

For 1986-1990 carried out selection of animals of desirable type with an optimum share of genes of improving breeds, studying of their morfo-productive features, a bookmark of genealogic lines of new type of cattle. The got results on milk productivity of cows of new type of Black and White breed (F₂), in comparison with cow local population Simmental and Red of Steepe breed, are provided in table nr. 2.

Table 2 Efficiency of cows (the second generation) for 305 days for first lactation

| The studied variants of the crossbreeding the breeds | n | It is received milk | | ± In comparison with local population of Simmental and Red Steepe breed | | ± In comparison with standard of the new type cattle | |
|--|-------------|---------------------|-----------------|---|-----------------|--|-----------------|
| | | milk (kgs) | fat in milk (%) | milk (kgs) | fat in milk (%) | milk (kgs) | fat in milk (%) |
| Simmental x Blak and White | 1074 | 3204 | 3,64 | +318 | -0,02 | - 93 | +0,04 |
| Simmental x Holstein | 1731 | 3361 | 3,58 | +972 | -0,08 | +361 | -0,02 |
| On an average of F₂ | 2787 | 3486 | 3,60 | +797 | -0,06 | +186 | 0 |
| Red of Steepe x Blak and White | 1081 | 3406 | 3,65 | +590 | -0,03 | +306 | +0,05 |
| Red of Steepe x Holstein | 788 | 3760 | 3,61 | +944 | -0,04 | +660 | +0,01 |
| On an average of F₂ | 1869 | 3555 | 3,63 | +739 | -0,05 | +455 | +0,03 |

With increasing of the share gene of Black and White breed cows of the second generation Simmental x Black and White is

saved advantage over cow local population Simmental breed on the milk productivity. However cows Simmental x Black and White

second generation in comparison with cow local Simmental breed the difference on milk productivity less than beside mongrels of the first generation. The similar results are received and beside cow of the second generation from crossbreeding Red of Steepe cow with bulls of Black and White and Holstein breed. In this case beside cows of second generation to factors of the contents of fat in milk small below than beside cow of

the local population of Simmental and Reed of Steepe breed.

Researches of hybrids with a different share of genes of improving breeds have shown, that increase of a share of genes Holstein breeds from 50 % up to 75 % and from 75 % up to 87,5 % at the some people high gene of the Holstein breed was observed easing the constitution. The results are provided in table nr. 3.

Table 3 Efficiency of cows for 305 days for first lactation

| Share of genes Holstein breed, % | n | Dairy productivity | | ± at standard of new type | |
|----------------------------------|------|--------------------|-----------------|---------------------------|--------|
| | | milk M ± m, kg | fat M ± m, % | milk, kg | fat, % |
| Subtip "northern" | | | | | |
| 25-50 | 75 | 4249±128,2 | 3,55±0,010 | + 449 | -0,05 |
| 51-75 | 604 | 5145± 38,4 | 3,58±0,040 | +1345 | -0,02 |
| 76-87,5 | 1302 | 5224± 26,4 | 3,58±0,002 | +1424 | -0,02 |
| 90 și > | 342 | 4578± 37,7 | 3,59±0,004 | + 778 | -0,01 |
| Media: | 2323 | 5077± 20,0 | 3,58±0,002 | +1277 | -0,02 |
| Subtip "southern" | | | | | |
| 25-50 | 273 | 4862± 72,6 | 3,69±0,010 | +1262 | +0,09 |
| 51-75 | 850 | 4634± 58,9 | 3,71±0,010 | +1034 | +0,11 |
| 76-87,5 | 487 | 3938± 58,7 | 3,74±0,007 | + 338 | +0,14 |
| 90 și > | 68 | 3423± 81,9 | 3,75±0,018 | - 177 | +0,15 |
| Media: | 1678 | 4420± 37,8 | 3,72±0,006 | + 820 | +0,12 |

It has allowed to draw a conclusion what to conduct escalating a share of genes Holstein breeds to over 75-87,5 % of a share of genes at animals of new type is inexpedient.

The studies of the mongrels with share miscellaneous gene perfecting breed have shown that increasing of the share gene Holstein race with 50 % before 75 % and with 75 % before 87,5 % weakening existed beside some with high half bred of the mongrels to constitutions. This has allowed to draw a conclusion about that to lead наращивание кровности on голштинской to sort over 75-87,5 % share gene beside animal of the new type inadvisable.

Optimum for "north" zonal subrange is a variant of the crossbreeding with use помесных oxen that will allow to get the animal with share gene Holstein of the race at a rate of 75-81,2% with the following breeding "in itself". For "south" zonal subrange advisable to use the scheme of the

crossbreeding, as a result which share gene Holstein of the race beside animal will form 62,5-75,0%.

Per 1991-2008 carried out selection and duplication of animals of desirable type, studying of genetic structure and approbation of new type of Black and White breed.

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