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SELECTION OF IMPORTED BLACK-MOTLEY BULLS - IMPROVERS OF HOLSTEIN BREED AND THEIR EFFICIENT USAGE IN IMPROVEMENT OF BLACK-MOTLEY STRAIN HERDS

Dosmukhammedova Mukhayyo Khusnitdinovna

Doctor of Agricultural Sciences, Dotsent of Department General Zootechnics, Tashkent State Agrarian University, Tashkent, Uzbekistan

Nosirov Ubaydulla Nasrullaevich

Doctor of Agricultural Sciences, Professor of Department General Zootechnics, Tashkent State Agrarian University, Tashkent, Uzbekistan

Shakirov Qakhramon Juraboevich

Doctor of Agricultural Sciences, Dotsent of Department General Zootechnics, Tashkent State Agrarian University, Tashkent, Uzbekistan

Mamurov Golib Gulomjonovich

Independent Researcher, Head of Laboratory State Enterprise "Uznaslchilik", Tashkent, Uzbekistan

Esanov Azamat Sharnazarovich

Independent Researcher of Department General Zootechnics, Tashkent State Agrarian University, Tashkent, Uzbekistan

ABSTRACT

In the article data of improvement of black-motley cattle herds, selection of bulls-improvers of Holstein breed and their efficient usage in crossing in the system of artificial insemination were given.

KEYWORDS: *cattle of black-motley and Holstein breed, bulls- improvers, crossing, artificial insemination, herd improvement.*

INTRODUCTION

Stock-breeding intensification, herds improvement, efficient usage of world strain improvers in increasing of thoroughbred and productive potential is actual in population provision with food-stuffs of cattle-breeding and great attention pays to stock-breeding intensification in Five priority areas of Uzbekistan development strategy for 2017-2021 [1].

It is known that beginning from 1930 in the Republic pure-bred cattle of dairy and dairy-meat directions is being bred and they were adapted and zoned to the territories of various regions.

As a result, their highly productive herds were formed and thoroughbred base of cattle-breeding was strengthening during 70 years. A lot of pedigree plants, purebred farms and husbandries were created. According to selection data 40% black-motley strain, 29% red races, 22% brown, 3% Bushuev and 6% meat strains were made out of cattle, raising in the Republic. However, during the years of our Republic independence, with liquidation of state farms and privatization of cattle, thoroughbred base of stock-breeding was eliminated.

Pure-bred cattle herds which were created during 70 years were exterminated and unsystematically privatized. Fertile and pure-bred cows grown under

technological conditions on keeping and feeding forming pedigree herds became low-yielding and pedigree characteristics lost in the conditions of private family plots and farms.

Though by 2017, according to statistic data, in farms of various types the number of cattle increased for 12165,3 thousand heads, including cows for 4214,3 thousand, but their productivity sharply decreased. Thus, if in farms of various types from cows on average obtained 2302 kg of milk, then in farmsteads it was equal to 1817 kg. In farms of Tashkent region, they made 2392 kg and 2229 kg correspondingly [3, 5].

In the Republic black-motley breed stock constitutes the main part of cattle-breeding and therefore is considered the main source in the organization of pedigree stock-breeding. Although, the practice of their crossing with Holstein race which began in the 1960s and still is ongoing, but certain positive results haven't been achieved. May be because the proper attention wasn't paid to usage of bulls-improvers in an artificial insemination system. This situation is still ongoing. In 2017 the number of cows in farms of various types was equal to 4214,3 thousand out of them in farms 192,5 thousand heads, 1465 thousand semen doses were used to their artificial insemination or it was equal to 732 thousand cows which were inseminated. This index in general made only 17,3% of cows.

Hence, artificial insemination of all cows and efficient usage of breeding bulls-improvers in it are waiting for their decision.

Regards to this, paying attention to the use of bulls-improvers of black-motley Holstein breed and the factors of improving black-motley strain herds is of particular significance in dairy cattle-breeding [2, 4; 6].

MATERIALS AND METHODS

Selection of breed improvers and improvers leader bulls of black-motley Holstein strain, and also crossing factors of black-motley race cows in the system of artificial insemination were used at state enterprise "Uznaschilik" which became the source of this research work. Selection and assorting methods accepted in selection and zootechny were used in the investigation work. New methods of estimation on bulls' genotype and also on productive index of mother ancestors were implemented.

RESULTS AND DISCUSSION

The research work was carried out at the state enterprise "Uznaschilik" where bulls of black-motley Holstein breed were imported, then they were selected after quality appraisal on genotype and various individual indexes were conducted. Bulls-improvers and leader bulls-improvers groups were formed. Before formation they were estimated on their fathers' genotype, that is on rate of milk productivity and quality indexes of father posterities in comparison with their peers. After that they were formed on index of mother ancestors' productivity.

Prepotency of imported pedigree bulls, that is the analysis of father genotype and definition of their priority in forecasting the ability of their hereditary characteristics passing into generation, give an effect in the selection work (Table 1).

It was seen from data given in the table that leader bulls-improvers dominated over bulls-improvers group on all quality indexes of their father ancestors. Thus, if milk yield during lactation of father posterity in leader bulls-improvers group was higher for 1185,3 kg in comparison with their peers, then on the quantity of milk butter for 58kg and on milk protein for 50,7 kg respectively.

Table 1
Quality index (genotype) of father generation of imported bulls-improvers of black-motley Holstein breed

| Indexes | Leader bulls-improvers group (n=7) | | Bulls-improvers group (n=9) | |
|--|------------------------------------|-------|-----------------------------|-------|
| | S±X | Cv, % | S±X | Cv, % |
| Generations priority on milk yield, kg | +1185,3±23,4 | 104,9 | +895,8±47,1 | 140,5 |
| Priority on milk butter, kg | +55,0±2,4 | 11,5 | +28,4±4,5 | 47,0 |
| Priority on milk protein, kg | +50,7±1,7 | 8,8 | +30,2±3,9 | 36,2 |
| Productive index (RZM), % | 136,0±0,6 | 1,1 | 120,9±3,1 | 6,9 |
| Pedigree index (RZG), % | 143,6±2,6 | 4,8 | 134,2±3,6 | 8,9 |
| Exterior index (RZE), % | 124,7±3,3 | 7,0 | 124,6±3,8 | 9,2 |
| Breeding index (RZN), % | 119,1±1,8 | 4,1 | 122,1±2,3 | 5,7 |

These indexes in bulls-improvers groups were equal to 859,8 kg, 28,4 kg and 30,2 kg. Indexes of quality rate in the I group was more for 119,1-143,6% in comparison with their peers and on the II group this difference was equal to 122,1-134,2%. All bulls of these two categories were estimated on their father generations' quality and suited to the category of bulls-improvers. It means that imported bulls of black-motley Holstein strain possessed by a certain prepotent quality

passed from father's generation. Even in this case, they will be evaluated on generation quality in the inspection farms of the Republic.

Bulls named "Ursel" and "Uris" belonging to Dijon system from group of leader bulls-improvers of black-motley Holstein breed and their posterity give more milk for 1361 kg, milk butter for 56 kg and milk protein for 54 kg in comparison with their peers. Productive index made 146%, pedigree index was equal to 137% and exterior index was 129%. Bulls named

“Ursa” DE 0122657353 and “Uriel” DE0122657319 belonging to “Bsardo” bull system were characterized by high thoroughbred quality and productivity.

Usage of leader bulls-improvers semen in cows’ insemination of black-motley strain of Holstein genotype in pedigree farms and employment of bulls-improvers semen in black-motley breed mating in commodity farms in the artificial insemination system which corresponds to the purpose of the research. Thoroughbred and productive new generation obtained from farm cows. It was defined that in pedigree farms of the Republic milk yield increased till 4800-5200 kg in cows’ new generation, obtaining as a result of paternal inheritance. At present existing herds of black-motley

strain cows giving milk in the quantity of 1800-2200 kg were improved and after that their productivity increased for 2,0-2,5 times.

Sixteen imported bulls of black-motley Holstein breed, taking part in the experiment were divided into 2 categories on index of mother ancestors’ productivity. Comparatively productive bulls, obtained from mother ancestors were transferred to leader bulls-improvers group and bulls with lower category were added to bulls-improvers group. It was defined that they were obtained from purebred and productive mother ancestors (Table 2).

Table 2
Index of mother ancestors’ productivity of imported bulls- improvers of black-motley Holstein breed

| Indexes | Leader bulls-improvers group (n=9) | | Bulls-improvers group (n=7) | |
|--|------------------------------------|-------|-----------------------------|-------|
| | S±X | Cv, % | S±X | Cv, % |
| Milk yield during lactation, kg | 12458,8±212,8 | 5,1 | 11584,3±139,2 | 3,2 |
| Fat content in milk composition, % | 3,87±0,1 | 4,9 | 3,69±0,1 | 5,6 |
| Protein content in milk composition, % | 3,36±0,1 | 5,6 | 3,25±0,1 | 4,2 |
| Quantity of milk butter, kg | 482,2±13,4 | 8,3 | 427,3±4,6 | 2,8 |
| Quantity of milk protein, kg | 418,2±8,9 | 6,4 | 376,3±6,7 | 4,7 |

Bulls divided into two thoroughbred groups which were obtained from highly productive cows. In bulls of the first group milk yield in mother ancestors on average was equal to 1245.8 kg, fat content – 3.87%, protein content – 3.36%, milk butter quantity – 422.2 kg and milk protein quantity – 418.2 kg and in the second bulls-improvers group these indexes made 1158.4 kg; 3.69%; 2.25%; 427.3 kg and 376.3 kg respectively. Therefore, imported bulls were obtained by the method of individual selection of fertile cows together with bulls-improvers estimated on quality of their generation. Productive heredity of mother ancestors also exercises positive influence on productivity of obtained new generation.

For this reason, use of imported bulls of black-motley Holstein strain in the system of artificial insemination will show positive influence and improvement of black motley - breed herds will be intensified.

Wide implementation of pairing (selection) projects of black-motley Holstein strain bulls, their zoning in the farms of Tashkent, Fergana, Samarqand regions and also their dissemination in black-motley breed herds in the farms of other regions is regarded as purpose-oriented.

CONCLUSION

1. Commodity cattle herds of black-motley breed were formed in the primary years of our Republic independence, when state enterprises were liquidated, pedigree cattle breeding factories, thoroughbred farms were disbanded, pure-strain cattle were privatized and its fodder supply was reduced.

2. Wide implementation of bulls-improvers in cows’ insemination of black-motley breed of Holstein

genotype, inculcation of selection and picking on their fathers’ genotype methods.

3. Improvement of artificial insemination system, expansion of planning selection works of all black-motley breed cows with black-motley Holstein strain raising in peasant plots and farms.

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