

Selection of imported bulls of Red-motley Holstein and Angler breeds, and also red strain of dairy direction herds' improvement in the artificial insemination system

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Abstract: *In the article data of red cattle of dairy direction herds' improvement by the method of their crossing with bulls- improvers of red-motley Holstein and Angler breeds in their selection on fathers' genotype and on index of productivity of mothers' ancestors.*

Key Words: *index of productivity, bulls-improvers, crossing, red-motley cattle, herd, genotype, ancestor, generation.*

1. INTRODUCTION:

Pedigree cattle-breeding base in the years of independence was disseminated, in privatization of red stock, thoroughbred cattle was scattered, low productive red cattle of dairy direction is bred in the Southern regions of our republic, in Navoi, Kashkadarya, Bukhara, Khorezm and in Karakalpakstan Republic and also in farmsteads of desert areas of other regions. Though they were crossed with Angler breed during 60 years, their productive indexes were not increased appreciably. According to data of 2017 cows milk yield was 1182-2847 kg in all areas of the abovementioned cattle-breeding regions, including farms, where this index was equal to 1060-2046 kg. In developed countries practice red strain stock of dairy direction improved and gives 7000-8000 kg of milk, while milk yield of red strain cattle in our republic is lower for 2-4 times [1].

That's why wide employment of bulls-improvers of red-motley Holstein and Angler breeds semen in improving of red strain dairy direction stock in Southern regions of our republic is considered as an actual. Milk yield of new generation, obtained in pedigree farms, will be equal to 5-6 thousand kilograms and in commodity farms it will be 3,0-3,5 thousand kilograms.

2. MATERIALS AND METHODS:

Thoroughbred and productive bulls of red-motley Holstein and Angler breeds were imported from Germany to the state enterprise “Uznaslchilik” for mating them with red strain dairy direction cattle. These bulls' semen was taken and sent to the picked farms of regions and districts on the selection plan. Research works on estimation of bulls' genotype, their individual characteristics and sperm productivity were held.

Exploration in the selection works was conducted by the methods of picking selection and crossing. Such modern methods as the use of father ancestors' indexes of productivity and pedigree as well as maternal ancestors' index of productivity were employed in bulls' selection. Adoption of measures on semen production expansion till sufficient quantity, in prospect opening of pedigree enterprises' branches in Bukhara, Khorezm and Kashkadarya regions, artificial insemination of all red strain dairy direction cows and heifers widespread in individual plots and farmsteads situating in the territories of Southern regions [3, 4].

3. RESULTS AND DISCUSSION:

Bulls-improvers of red-motley Holstein and Angler breeds with the purpose of red strain dairy direction stock's improvement were imported from Germany and their productive qualities were defined. In the first place they were selected on genotype of fathers - improvers and on quality indexes (Table-1).

Bulls-improvers and leader bulls-improvers were individually studied on their genotype in each race group.

Table 1

Paternal genotype of bulls - improvers of red-motley Holstein and Angler breeds and also indexes of generation quality

Indexes	Red-motley Holstein breed (n=11)		Angler breed (n=11)	
	S±X	Cv,%	S±X	Cv,%
Leader bulls-improvers group				
Milk yield priority of fathers, kg	+1372,4±343,4	55,9	+658,5±141,6	52,7
Milk butter priority, kg	+62,6±3,8	13,6	+31,2±6,2	49,0
Milk protein priority, kg	+49,4±3,4	15,4	+30,2±1,7	13,7
Productive index (RZM), %	137,0±1,8	3,0	123,8±1,2	2,4
Pedigree index (RZG), %	144,2±1,8	2,8	122,8±2,6	5,3
Exterior index (RZE), %	125,6±5,5	9,9	131,0±6,6	9,0
Breeding index (RZN), %	116,0±1,7	3,3	104,0±2,0	3,0
Bulls-improvers group				
Milk yield priority of fathers, kg	+880,0±207,4	48,1	+317,2±91,5	64,5
Milk butter priority, kg	+43,8±5,3	26,9	+13,2±2,9	49,4
Milk protein priority, kg	+31,0±6,9	49,6	+7,0±1,2	37,3
Productive index (RZM), %	123,6±2,8	5,1	104,8±2,1	4,6
Pedigree index (RZG), %	132,6±2,1	3,5	111,2±3,4	6,9
Exterior index (RZE), %	127,4±2,7	4,7	107,5±24,1	6,2
Breeding index (RZN), %	114,2±1,4	2,8	113,0±22,2	5,4

As seen from data, given in the table, leader bulls of improvers group surpassed bulls of improvers group on productive and pedigree characteristics of fathers' generation. On this index they were attached to herds with thoroughbred and commodity cattle. This method of picking will give selection effect.

Milk yield of fathers' generation of bulls-improvers of red-motley Holstein breed is higher for 1372,4 kg, milk butter for 62,6 kg and milk protein for 49,4 kg. It means that they were estimated on male's off-spring quality and transferred to the leader bulls-improvers category. Fathers' generation of leader bulls-improvers belonging to Angler strain excelled their peers on milk yield for 658,5 kg, milk butter for 31,2 kg, milk protein for 30,2 kg.

High degree inheritance of this fathers prepotent qualities to off-spring has great significance in the selection work. At present, in the developed countries mainly pays attention to this method of bulls' selection and their usage in an artificial insemination. In an ordered selection this method is widely used in herds' intensive improvement.

Index of fathers' quality also was inherited to the generation in a high degree. For example, in the off-spring of red-motley Holstein breed bulls index of productivity was increased for 137,0%, pedigree index for 144,2%, exterior index for 125,6% and breeding index for 116%. These indexes in posterity of Angler breed bulls were equal to 123,8%; 122,8%; 131,0% and 104,0% respectively. These quality indexes in bulls' genotype of bulls-improvers group were also distinguished by high level [2, 3; 5].

Usage of bulls-improvers and leader bulls-improvers of red-motley Holstein breed in crossing with red steppe breed of Angler genotype cows, employment of Angler strain bulls for red races is considered as goal-oriented and also corresponds to selection plans. Intensive improvement of thoroughbred and commodity economic stock is achieved.

Bull Ustamo DE 22573532 from leader bulls-improvers group of red-motley Holstein strain originated from bull Apol P system, in father generations, in comparison with their peers, milk yield was higher for 2136 kg, milk butter for 67 kg and milk protein for 63 kg. "Usamo" bull, belonging to 'Firmon' system, father's genotype possesses by high indexes (milk yield + 1878 kg, milk butter 75 kg and milk protein 46 kg).

We studied and made analyses of productive index of bulls' maternal ancestors, derived into groups of improvers and leader improvers on paternal ancestors' genotype. It was known from picking methods used in selection works that for mating always selected fertile cows. That is a group of cows giving bull-calves were formed and only

highly fertile cows were selected there. As a result, from ordered selection new pedigree offspring was obtained. Index of bulls' female ancestors' productivity selected on maternal ancestors' genotype was given in the table 2.

Table 2

Index of bulls' maternal ancestors' productivity of red-motley Holstein and Angler breeds

Indexes	Red-motley Holstein breed (n=11)		Angler breed (n=11)	
	S±X	Cv	S±X	Cv
Leader bulls-improvers group				
Milk yield during lactation period, kg	11750,2±266,5	5,1	10362,8±290,2	6,9
Fat content in milk composition, %	3,89±0,1	6,2	4,55±0,1	4,5
Protein content in milk composition, %	3,30±0,0	2,2	3,55±0,0	2,7
Milk butter quantity, kg	457,0±9,1	4,5	471,0±23,9	12,7
Milk protein quantity, kg	387,8±9,0	5,2	354,9±9,5	6,2
Bulls-improvers group				
Milk yield during lactation period, kg	12689,8±302,4	5,3	10085,2±287	6,4
Fat content in milk composition, %	4,03±0,1	3,6	4,55±0,1	5,0
Protein content in milk composition, %	3,38±0,1	3,4	3,55±0,1	3,3
Milk butter quantity, kg	510,8±18,3	8,0	459,2±17,5	8,5
Milk protein quantity, kg	428,6±16,7	8,6	357,0±8,7	5,4

If in female ancestors of leader bulls of red-motley Holstein breed milk yield was 11750,2 kg, milk butter 457,0 kg and milk protein 387,8 kg, then in bulls-improvers group they were equal to 12689,8 kg; 510,8 kg and 428,6 kg respectively. It was seen from these indexes that mother ancestors of bull improvers surpassed on productivity level.

In the 1st group of Angler strain bulls these indexes made 10362,8 kg; 471,0 kg; 357,9 kg and in the 2nd group they were equal to 10085,2 kg; 459,2 kg and 357 kg. In these groups leader bulls surpassed a little.

It was seen from added data that indexes of milk productivity of maternal ancestors of imported bulls considerably exceeded standard strain and belonged to the category of fertile cows, that is cows giving calves.

4. CONCLUSION:

1. Usage of red-motley and Angler breeds improvers in crossing with low productive red strain dairy direction herds with the purpose of their intensive improvement in various types farms situating on the territory of Southern regions of our republic.

2. Employment of bulls-improvers of red-motley Holstein and Angler strains in picking and planned selection, in fully artificial insemination of red-motley breed of dairy direction cows.

3. Estimation and selection of bulls-improvers of red-motley Holstein and Angler breeds on paternal ancestors' genotype and also on maternal ancestors' index of productivity.

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