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ORIGINAL ARTICLE

Innovation in Breeding and Genetics of Dairy and Beef Cattle for Productivity Enhancement in Azerbaijan Republic

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ABSTRACT

The aim of this study was investigation of hybridization (cross-breeding) abilities for Zebu hybrid breeding with higher productivity or efficiency. In southern and northern regions of this country the number Simmental is more than other breeds, this breed because of breeding and nutritional problems have less produced. Increased demand for dairy products in the country to raise the per capita consumption caused a study on 120 cows includes Simmental and their hybrid conducted into four groups, randomly. Comparison of the milk, meat, fat, growth dynamics in the control group (Control) and between other groups in the Lactation I, II, III periods. in the first parturition and second parturition in the hybrids were studied. Because hybrids show high resistant to certain diseases, including: parasites, brucellosis, and foot and mouth fever and flakier than the pure breeds of biological properties of its compatibility with the environment shows Hybrid of Two breeds Rotation and Three breed Rotation in Azerbaijan than to Simmental breed in most cities that has expanded can increase the amount of milk and meat production. So for meat- and dairy- type cattle could be increasing dairy products. Holstein breed hybrids or Zebu due to resistance to diseases and to increase fat and milk and meat could be applicator for better performance and efficiency.

Key words: Simmental, Hybrid, productivity, Holstein

Introduction

Per capita meat consumption rates in the world have reached more than 37 kilograms. But the figure in the Azerbaijan republic is low. In this country, relying on international experience necessary to increase milk/ meat products based on basic science is possible [1,2].

Developed countries have been able through the switching and selection (Selection) genetic form protein complexes, research stations, and economic measures to take effective steps to increase product. Proper implementation of reform cattle fed programs, feed of protein, minerals, vitamins and other livestock growth rate has increased [3,4] using races with high production through artificial insemination (Embryo Transfer) also extensively done. In many countries such as Brazil, Canada, Australia and Germany, with the widespread farming of Brahman breed (Brahman) cattle for meat yield, even in 60 centuries have been successful. Hybridization in these countries caused creates hybrids such as Beef Master, Wire Brown, Santa Hertruda and etc have a special place. Application of Holstein breed also in Republics of Russia, France has a special importance. Thus in 2008 the amount of milk yield/ per cow in Canada reached to 7900 lit and in Russia 5757 lit [5] that indicators are related to Productivity hybrids

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stronghold in the region (Snegri) Russia in recent years confirms this through cross-bred races have created. Also these hybrids are Resistant to the disease brucellosis, flaky, fever, etc. [7].

In Australia some hybrids created that in the short period of time has provide programs run dairy products. Breed like (Draft Master, Bradford, Brangus, Mandolung) the live weight of some hybrid bulls to 1250 kilograms and in cows to 750 kilograms overweight does [8].

Materials and Methods

In this study, 120 head cattle in Lankaran region (Azerbaijan Republic) have been applicated. This experiment was conducted with completely randomized design (CRD) with four treatments and four replicate. Birth weight, 3, 6, 9, 12, 18-day weight, dynamic of growth months in three groups of survey and also in four groups and in the F1 and F2 hybrid produced milk fat and control group (Control) as lactation I, II, III were studied.

Group 1	Control	Control	Simmental
Group 2	Holstein X	Simmental	F1
Group 3	Holstein X	Simmental	F2
Group 4	Newzeland	Holstein X	Simmental
	Zebu X		F1

Rearing conditions for all Groups include Nutrition and rearing was similiar. Experimental analysis was conducted with SAS 9.1 Software and comparison of means has been done via Duncan multiple test ($P<0.05$).

Results

Simmental cattle in Azerbaijan as dairy and meat (bothproposeed breed) cattle breed is reared. In the region of Moghan, Guba, Khachmaz also are rearing. Results of the tests taken which aims to create a dairy herd producing 4500 to 5000 pounds of milk for per lactation are presented in Table 1. Based on three groups were tested by the increase in birth, 3, 6, 9, 12 and 18 months weight, compared with control group are shown in group 2 and 3.

In this table live weight of Simmental calves at birth, 3, 6, 9, 12 and 18 months was less than hybrids, weight index in hybrid is more than control group, to 34 kg in the first generation, in other words three kg weight increasing in the second generation of the 5 kg to 36 kg was recorded. Coefficient of variation in the hybrid than the control group (control) is more [10]

More parameters are presented in Table 2 such as milk fat, etc.

Discussion

In Table 2 Hybrid in groups 2,3 and 4 respectively in the first and second and third lactation is higher than control group (16.8 kg) ,(16.6 kg) and 33.6 kg for milk fat. Milk production in group 4 and in the first lactation was greater than the control group (210 kg). Increase in second and third lactation and also was more than control. The results are similar to our pervious study on Zebu hybridization for dairy performance [6,7].

Table 1: Body weight of experimental groups in different ages.

Month (age)	Control group Simmental		Holstein X Simmental group 1	F1	Holstein X Simmental group 2	F2
Weight	X ± m	CV	X ± m	CV	X ± m	CV
Birth time	6.0± 4.30	6.6	5.0± 8.34	5.4	5.0± 3.36	6.5
3 month	9.2 ± 9.81	8.5	8.1 ± 7.88	3.5	3.1± 1.87	5.5
6 month	3.3 ± 6.143	5.7	9.1 ± 4.156	9.4	5.2 ± 9.159	9.5
9 month	9. 3± 9.179	7.7	9.2 ± 5.198	9.5	6.3 ± 4.198	5.6
12 month	8.6 ± 6.220	1.8	6.4 ± 8.248	7.6	8.5 ± 256	9.6
18 month	4.7 ± 6.300	8.8	2.6 ± 4.330	3.7	9.5 ± 2.334	1.7

Table 2: Some of productive parameters in hybrids

Indices	Simmental Simmental X±m	Holstein x Simmental first generation X±m	Holstein x Simmental second generation X±m	Newzeland Zebu x Holstein x Simmental first generation X±m
First lactation	8.19±1950	8.22±2075	3.23±2250	9.22±2160
Milk Yield	10.±9.3	1.0±8.3	1.0±8.3	1.0±3.4
Fat % Kg fat	2.3± 1.76	8.3±9.78	9.3±5.85	9.3±9.92
Second lactation	8/25±2460	8/24±2680	1/26±2780	7/25±2710
Milk Yield	1/0±95/3	1/.±8/3	1/0±8/3	1/0±2/4
Fat % Kg fat	3/3±2/97	8/3±8/101	8/3±6/105	5/3±8/113
Third lactation	1.30±2780	6.28±3265	2.31±3340	9.32±3290
Milk Yield	1.0±9.3	1.0±75.3	1.0±318	1.0±3.4
Fat % Kg fat	2.3±4.108	7.3±4.122	3.3±9.126	9.3±5.141

In this study it was found that the Hybrid of Two breeds Rotation and Three breed Rotation in Azerbaijan than to Simmental breed in most cities that has expanded can increase the amount of milk and meat production.

So for meat- and dairy- type cattle could be increasing dairy products. Holstein breed hybrids or Zebu due to resistance to diseases and to increase fat and milk and meat could be applicated for better performance and efficiency.

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