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GROWTH PERFORMANCE OF ABERDEEN-ANGUS CALVES DURING THE MILK-FEEDING PERIOD

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Abstract:
This article presents a study on the growth performance of Aberdeen-Angus calves during the milk-feeding period. Parameters such as live weight, average daily gain, general development, and health condition were evaluated. The results confirmed the high genetic potential of the Aberdeen-Angus breed, with intensive growth and strong adaptability in early life. These traits make the breed promising for beef production.

Keywords: Aberdeen-Angus, calves, milk-feeding period, growth performance, live weight, daily gain.

Introduction

To this day, the cattle breeding industry worldwide does not fully meet the population's demand for high-quality beef. One of the ways to solve this issue is by increasing the population of beef-oriented pedigree cattle and by crossbreeding dairy and dual-purpose breeds with beef-type bulls to create herds specialized in beef production. The rapid development of the livestock sector plays a crucial role in supplying the population with affordable and high-quality meat and other food products. It is also of particular importance in increasing employment and income, especially in rural areas.

Main Research

Improving the breeding and productivity qualities of Aberdeen-Angus cattle remains one of the primary objectives in beef cattle production. Scientific

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research in this area is essential. In Uzbekistan, researchers such as Sh.A. Akmalkhanov, U.N. Nasirov, E.Yu. Karchevskiy, M.E. Ashirov, I.M. Maksudov, B.O. Abdalniyozov, M.Kh. Dostmukhamedova, K.J. Shokirov, N.R. Ruziboev, B.M. Ashirov, U.R. Soatov, A.K. Kakhkharov and others have conducted studies on the adaptability of beef cattle breeds to various environmental conditions and the feasibility of breeding animals of different productivity types.

Among foreign scientists, J.C. Bonsma, D.E. Dowling, J.E. Johnston, G.G. Carzneiro, J. Findlay, A.O. Rhoad, K. Phillips, N. Akhmadaliev, F.F. Eissner, P. Prokhorenko, K.F. Kushner and others have also carried out significant research in this field.

Object of the Study:

The study was conducted for the first time under the climatic conditions of Ohangaron district, Tashkent region, and focused on the adaptation and productivity indicators of the daughters of bulls named Timo van Reidschot (DE 0120680124), REA Imper (DE 0355052567), and Terron (DE 066530582).

Subject of the Study:

The research examined the effects of feeding, housing, and productivity on meat quality and animal health, with particular attention to clinical and biochemical parameters influenced by genetic characteristics.

Research Methods

In this study, general methods commonly used in animal husbandry were applied. To address the research objectives, general zootechnical methods were utilized, including the evaluation of cattle adaptation to climate, care, housing, feeding, and meat quality.

Aberdeen-Angus cattle were fed in outdoor summer pens and on pastures outside of farm buildings. The animals were provided with 24-hour access to drinking water throughout the study period.

During the research process, the following procedures were carried out:

Measurement of feed intake over a two-day period by weighing the feed provided and the remaining leftovers.

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Scientific Novelty

For the first time in the conditions of the Republic of Uzbekistan, the adaptation, acclimatization, maternal traits, and productivity of German-bred Aberdeen-Angus cows – daughters of the bulls Timo van Reidschot (DE 0120680124), REA Imper (DE 0355052567), and Terron (DE 066530582) – were studied. The study established the influence of the acclimatization process on the productivity of the cows.

Key innovative aspects include:

- Selection of imported high-performance pedigree bulls for herd improvement;
- Genotypic, exterior, and constitutional evaluation and selection of the offspring of imported bulls;
- Optimization of housing conditions and improvement of feeding practices;
- Development and implementation of feeding rations for Aberdeen-Angus cattle based on live weight.

Research Objective

The objective of this study is to scientifically investigate the acclimatization, adaptability, maternal, and productivity traits of German-bred Aberdeen-Angus cattle in the mountainous pastures of the Republic of Uzbekistan.

SCIENTIFIC RESEARCH RESULTS

Growth of Calves During the Milk-Feeding Period

Behavioral differences among the calves were found to influence growth dynamics and were compared with live weight after weaning (Table 1).The results obtained in this study exceeded those reported by several researchers, which can be attributed to the genetic advantage of the German-bred Aberdeen-Angus cattle, known for their faster growth rates compared to local breeds.At the same time, other studies (Shevkhuzhev, 1996) have shown similar average daily weight gains in Aberdeen-Angus bulls.

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Table 1 Average daily live weight gain dynamics of calves during the milk-feeding period, g (n=10)

Period	Groups		
	I	II	III
Heifer calves			
Live weight at 3 months, kg	94,8 ±1,1	88,3 ±1,5	90,2±1,3
Absolute live weight gain from birth to 3 months, kg	70,5 ±0.9	65,1 ±0,6	66,6 ±0,8
Average daily live weight gain from birth to 3 months, g	785,0 ±10,3	723,0 ±0.8	740,0 ±10,4
Live weight at 6 months, kg	174,1± 1,1	160,0 ±1,6	169,0 ±1,0
Absolute live weight gain from 3 to 6 months, kg	79,1 ±0,5	72,5 ±0,3	79,8 ±0,4
Average daily live weight gain from 3 to 6 months, g	879,0±7,1	806,0 ±5,4	887,0 ±4,8
Absolute live weight gain during the milk-feeding period, kg	149,8± 1.1	137.7+1.2	146,5 ±0,7
Average daily live weight gain during the milk-feeding period, g	832.0+7.3	765.0+4.3	816.0+5.2
Bull calves			
Live weight at 3 months, kg	100,4 ±1,0	99,6 ±1,0	99,8 ±0,7
Absolute live weight gain from birth to 3 months, kg	73,4 ±0,7	74,5 ±0,5	74,6 ±1,2
Average daily live weight gain from birth to 3 months, g	816,0±3,1	828,0 ±2,6	829 ±4,8
Live weight at 6 months, kg	200,0± 3,0	191,1± 2.1	189,3 ±2,4
Absolute live weight gain from 3 to 6 months, kg	100,3 ±1,5	91,3 ±1,7	89,4 ±1,8
Average daily live weight gain from 3 to 6 months	1115,0 ±4,7	1015,0 ±8,0	993,0 ±9,0
Absolute live weight gain during the milk-feeding period, kg	173,0 ±3,0	166,0± 2,6	164,1 ±1,8
Average daily live weight gain during the milk-feeding period, g	966,0 ±11,8	922,0 ±9,1	911,0 ±8,3

As can be seen from Table 1, during the period from birth to 3 months of age, the average daily live weight gain of heifer calves was highest in Group I, reaching 785 g. There was no significant difference between groups in terms of live weight gain of bull calves during this period. The absolute live weight gain of heifer

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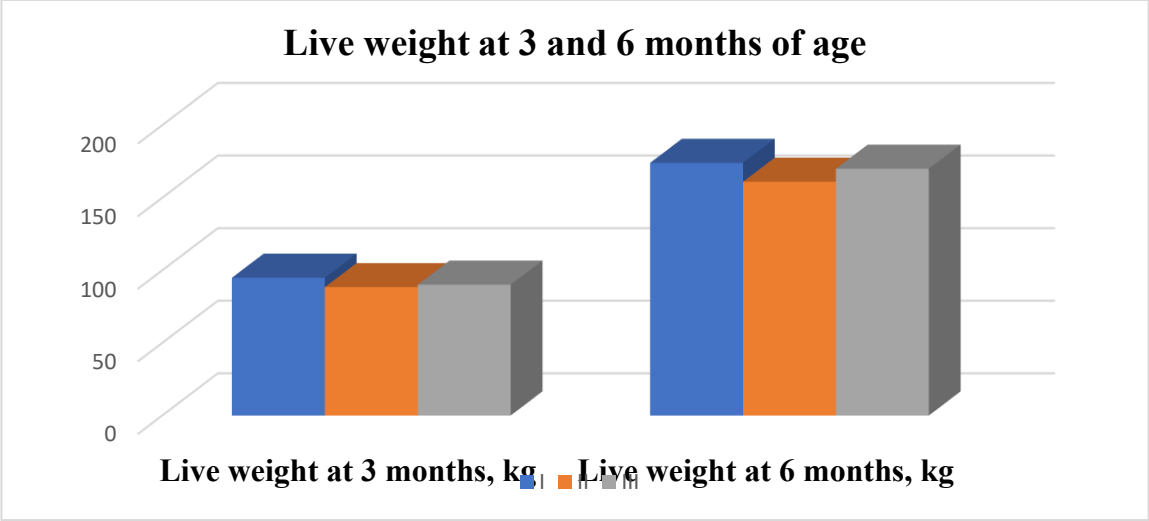
calves from birth to 3 months was also highest in the Group I experimental group, amounting to 70.5 kg. In Groups II and III, this indicator was 65.1 kg and 66.6 kg, respectively.At 6 months of age, notable differences in the live weight of heifer calves were observed. In Group I, the live weight reached 174.1 kg, while in Groups II and III, it amounted to 160.0 kg and 169.0 kg, respectively.

From 3 to 6 months of age, the absolute live weight gain in Group I was 79.1 kg, while in Groups II and III, it amounted to 72.5 kg and 79.8 kg, respectively. The highest indicator was recorded in the heifer calves of Group III. There was no significant difference between Groups I and III in this parameter. During the milk-feeding period, the highest average daily live weight gain was observed in Group I, reaching 832.0 g. In Groups II and III, this figure was 765.0 g and 816.0 g, respectively. When evaluating bull calves, the highest results were also recorded in Group I. At 6 months of age, the live weight of bull calves in Group I reached 200.0 kg, compared to 191.1 kg and 189.3 kg in Groups II and III, respectively. The absolute live weight gain during the milk-feeding period was also highest in Group I, with an average of 173.0 kg. In Groups II and III, this indicator was 166.0 kg and 164.1 kg, respectively.



Picture 1. Live weight at 3 and 6 months of age

Thus, during the milk-feeding period, the growth and development indicators of calves in Group I were significantly higher compared to those in Groups II and III.

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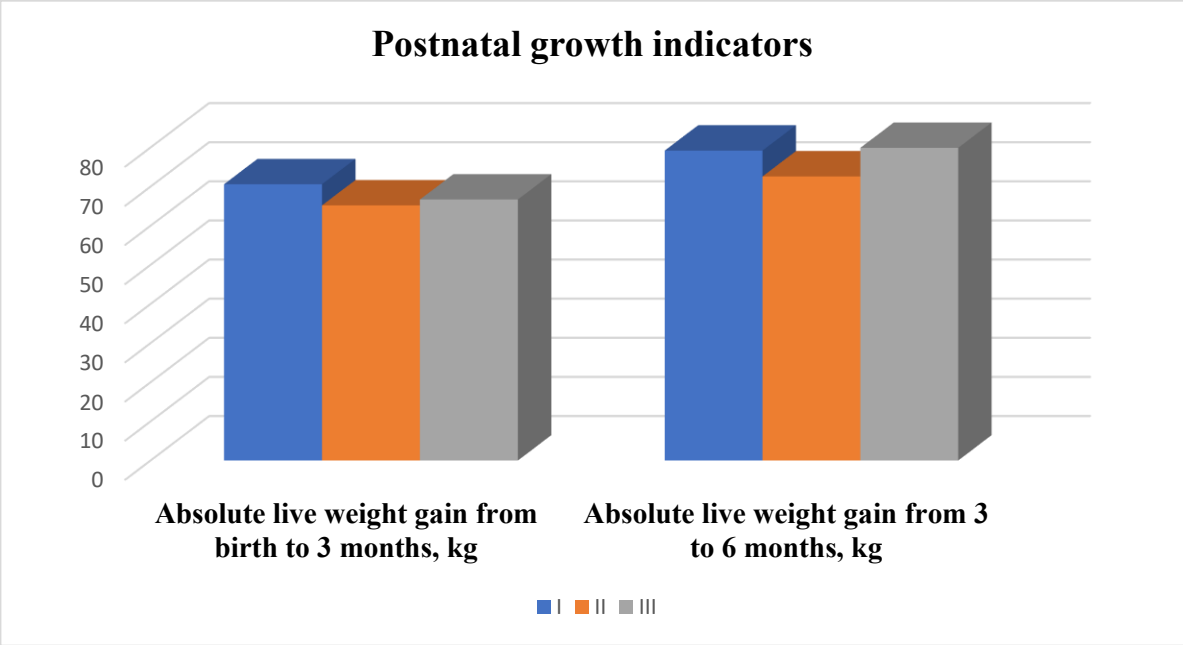
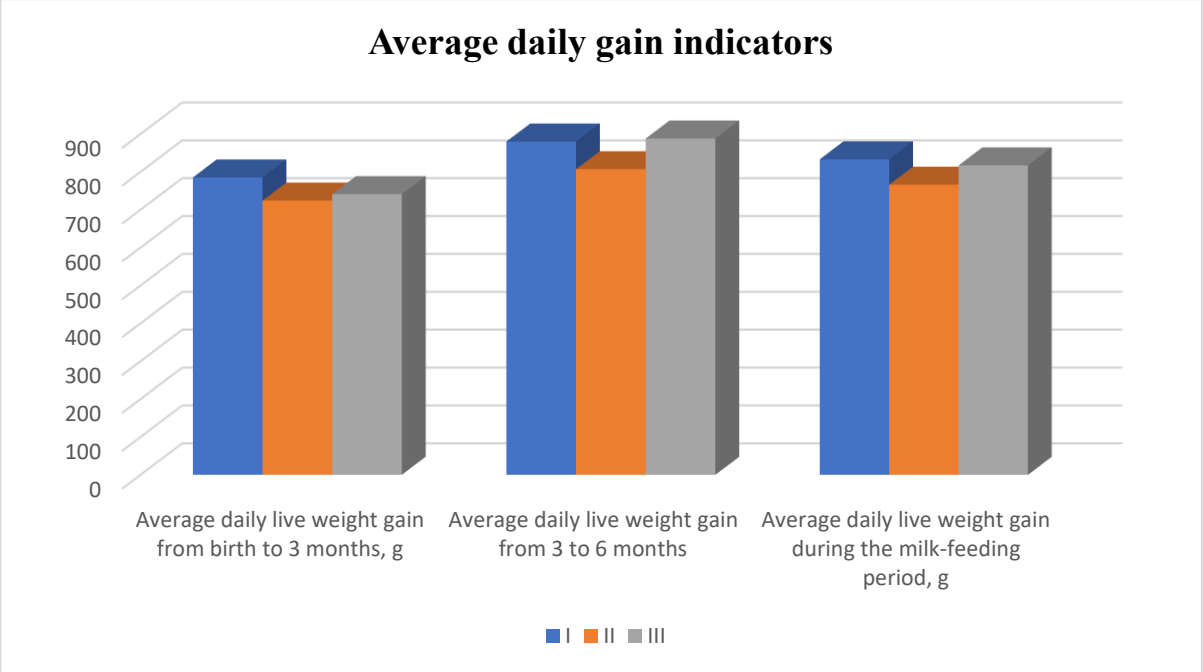
Among the experimental animals, those in Group I, sired by Timo van Reidschot (DE 0120680124), demonstrated superior maternal traits.



Picture 2. Postnatal growth indicators



Picture 3. Average daily gain indicators

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Conclusions

1. All Aberdeen-Angus cattle calved easily with little to no external assistance. The duration of the initial licking behavior ranged from 6 to 8 minutes. Calves born to cows in Groups I and III showed a significant ($P > 0.95$) advantage in total suckling duration on the first day (132 and 138 minutes, respectively).
2. The average birth weight of newborn heifer calves was 24.3 kg, while bull calves weighed 27.0 kg. Calves from Group I had higher birth weights compared to those from other groups.

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