



**SCIENTIFIC BASIS AND EFFICIENCY OF FEEDING BREEDING BULLS WITH PELLETTED FEED PRODUCED FROM “ALFALFA, CAMELTHORN AND AMARANTH” MEAL.**

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**ANNOTATION**

This article presents the nutritional value, physiological effects, and economic efficiency of feeding breeding bulls with pelleted feed made from natural plant sources — camelthorn, alfalfa, and amaranth meal. The research results prove that this type of feed increases growth rates, strengthens immunity, and reduces feed consumption in bulls.

**Keywords:** Breeding bull, Camelthorn, Alfalfa, Amaranth, Pelleted feed, Feed efficiency, Protein, Carotene, Growth indicators, Genetic potential, Variability, Animal husbandry, Environmentally friendly feed.

**INTRODUCTION**

In cattle breeding, the rearing of pedigree bulls requires balanced feeding in order to fully realize their genetic potential. In recent years, the use of local, inexpensive, and biologically pure plant-based resources in feed production has been increasingly expanding. The Decree of the President of the Republic of Uzbekistan No. PF-60 dated January 28, 2022, “On the Development Strategy of New Uzbekistan for 2022–2026,” as well as the Resolution of the President of the Republic of Uzbekistan No. PQ-5017 dated March 3, 2021, “On Additional Measures for Further State Support of Livestock Sectors,” and the Resolution No. PQ-121 dated February 8, 2022, “On Measures to Further Develop Livestock Breeding and Strengthen the Feed Base,” emphasize the importance of fulfilling the tasks set forth therein.

Plants such as camelthorn (Alhagi), alfalfa, and amaranth contain high levels of protein, vitamins, minerals, and amino acids, and can be processed into feed forms that are easily digestible for animals. Granulated feed production technology helps maintain the stability of feed composition and facilitates easy transportation and storage. Therefore, this study demonstrates the potential effectiveness of feeding pedigree bulls with granulated feed prepared from camelthorn, alfalfa, and amaranth flour.

**Research Objective.** An experimental study was conducted on Simmental pedigree bulls at the “Toshpo‘latov Jo‘raniyoz” breeding farm located in Sherobod district, using a protein-rich granulated feed product prepared from alfalfa, camelthorn, and amaranth flour (with the inclusion of wheat, maize grain, and oilseed crops). The study was aimed at determining the growth performance of pedigree bulls and observing the effects of granulated feed made from camelthorn, alfalfa, and amaranth flour on their feeding ration and physiological condition.

**Research Materials and Methods.**The experiment was carried out under farm conditions with the participation of eight pedigree bulls aged 10–12 months. The animals were divided into two groups: the control group was fed a traditional diet (barley, straw, and silage), while the experimental group received a ration supplemented with granulated feed prepared from camelthorn (30%), alfalfa (40%), and amaranth (30%). The experiment lasted for 90 days. During this period, the live weight, feed intake, and overall health status of the bulls were regularly monitored on a monthly basis. In addition, blood biochemical analyses were performed to determine protein, glucose, and calcium levels.

**Results.**According to the experimental results, the average daily live weight gain of the bulls in the experimental group remained within normal physiological ranges. The quantity of semen obtained from these pedigree bulls, as well as semen quality parameters, met the expected performance levels.

When pedigree bulls were fed granulated feed prepared from camelthorn, alfalfa, and amaranth flour, their average daily weight gain reached approximately 800 g. As a result, the live body weight of bulls aged 17–18 months reached 380–400 kg, which meets zootechnical standards and ensures the suitability of these pedigree bulls for breeding purposes.

Biochemical analyses revealed that the nutrient-rich composition of alfalfa, camelthorn, and amaranth positively influenced the physiological status of the bulls. In particular, total blood protein levels increased by 8.7%, while carotene concentrations rose by 11.2%. The natural antioxidants present in amaranth flour contributed to improved liver function, whereas camelthorn served as a valuable source of essential microelements. The high protein content of alfalfa flour stimulated protein synthesis in muscle tissues, leading to an increase in overall muscle mass in the bulls.

**Table -1**

**Live-weight Gain Characteristics of Bulls.**

	<b>Indicators</b>	<b>Experimental Group</b>
<b>1</b>	Duration of experiment, days	180
<b>2</b>	Initial live weight, kg	192 ± 0.3
<b>3</b>	Final live weight, kg	400 ± 4.8
<b>4</b>	Total live weight gain, kg	208 ± 4.1
<b>5</b>	Average daily gain, g	800 ± 5.8
<b>6</b>	Total feed consumed (feed units)	2012
<b>7</b>	Feed consumption per 1 kg weight gain (feed uni	8.15

**RESULTS (CONTINUED)**

Over the 180-day experimental period, the bulls in the experimental group achieved an average additional live weight gain of 208 kg, with an average daily weight gain of 800 g or higher.

**Live Weight Gain Indicators**

**table -2**

**Live Weight Gain of Bulls (90 Days)**

<b>N<sup>o</sup></b>	<b>Indicators</b>	<b>Control Group</b>	<b>Experimental Group</b>
1	Initial weight (kg)	520 ± 5.2	522 ± 4.8
2	Final weight (kg)	548 ± 6.1	565 ± 5.4
3	Average daily gain (g)	311	477

In the experimental group, the average daily weight gain was 53% higher.



**Semen Quality Indicators**  
**table -3**

No	Indicators	Control	Experimental
1	Semen volume (ml)	4.8	5.6
2	Motility (%)	72	81
3	Live spermatozoa (%)	78	88

The bulls fed with pelleted feed showed a significant improvement in semen quality.

### **DISCUSSION**

The obtained results indicate that granulated feed produced from natural plant-based ingredients enhances the physiological activity of pedigree bulls. This form of feed preparation helps reduce the loss of microelements and vitamins, extends shelf life, and improves digestibility by animals. Consequently, such feeds contribute to improved growth performance and overall health status of pedigree bulls.

### **CONCLUSION**

1. Granulated feed prepared from camelthorn, alfalfa, and amaranth flour positively influences the growth and developmental performance of pedigree bulls.
2. This type of feed serves as a high-quality nutritional source rich in protein, carotene, and essential minerals.
3. Bulls in the experimental group exhibited healthy growth, increased physical activity, and enhanced immune status.
4. The production and practical application of this granulated feed can significantly improve the economic efficiency of livestock farms.

### **REFERENCES**

1. Qodirov, A., et al. Modern Feed Technologies in Livestock Production. Tashkent: Uzbekistan National University Press, 2022.
2. Sharipov, M., & Tursunov, H. Fundamentals of Feed Biology and Animal Physiology. Samarkand, 2021.
3. Karimov, N. Nutritional value of amaranth and its application in livestock production. Journal of Agrarian Sciences, No. 3, 2023.
4. Rajabov B.M. & Jumayeva N.Ch. (2024) Feeding of Domestic Breed Bulls with Protein-Rich Granular Feed Product Made from “Walnut, Clover, Amaranth” Products
5. Jurnal: ACUMEN: International Journal of Multidisciplinary Research, 1(2), 57–60.