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Comparative Effects of MIOSTA-H and Bodifors Biostimulants on The Physiological Parameters and Body Weight Gain of Calves

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Abstract: This study investigated the comparative effects of Miosta-H and Bodifors biostimulants on the physiological parameters and body weight growth of calves. The experiment was conducted on nine six-month-old Red Desert breed calves raised at the "Abduolim Qudratov" cattle farm in Surkhandarya region, Uzbekistan. The animals were divided into three groups consisting of three calves each. The first experimental group received Miosta-H intramuscularly at a dose of 1.5 ml per calf, administered twice at a 30-day interval. The second experimental group received Bodifors intramuscularly at a dose of 6 ml per calf every 14 days, for a total of four administrations. The third group served as the control and received no treatment. The trial lasted for two months under identical feeding and management conditions. Physiological indicators and body weight were monitored throughout the study. The results showed no significant changes in the physiological parameters of calves treated with either biostimulant. Calves receiving Miosta-H exhibited an increase of 10 kg (4.4%) in body weight, while those treated with Bodifors showed an increase of 6.5 kg (2.9%). The findings suggest that both biostimulants positively influence growth performance, with Miosta-H demonstrating a comparatively greater effect on body weight gain.

Keywords: Miosta-H, Bodifors, calf, biostimulant, physiological parameters, body weight gain, growth performance, cattle breeding, livestock productivity.

Introduction

Cattle breeding is one of the leading branches of animal husbandry and plays a crucial role in ensuring a stable supply of high-quality meat and dairy products for the population. Increasing livestock productivity through the application of modern veterinary and zootechnical approaches remains an important priority for the sustainable development of the agricultural sector [1].

According to the Resolution No. PQ-322 of the President of the Republic of Uzbekistan on additional measures to ensure stable food security, significant increases in livestock populations and animal product output have been planned in the coming years [2]. In this context, improving growth rates and productivity of young animals through the use of biologically active preparations is of particular scientific and practical importance [3].

Biostimulants are widely used in veterinary medicine to enhance metabolic processes, stimulate growth, improve feed utilization, and increase the overall productivity of animals [4]. Among these preparations, Miosta-H and Bodifors have attracted attention due to their potential growth-promoting properties. However, comparative information regarding their effectiveness in calves under local farming conditions remains limited [5]

Therefore, the present study aimed to evaluate and compare the effects of Miosta-H and Bodifors biostimulants on the physiological parameters and body weight growth of young calves [6].

Methodology

The study was conducted at the "Abduolim Qudratov" cattle farm in Sho'rchi district, Surkhandarya region, Uzbekistan. Nine clinically healthy six-month-old Red Desert calves were selected and divided into three groups of three animals each [7]. Calves in the first experimental group received Miosta-H intramuscularly at a dose of 1.5 ml per animal twice, with a 30-day interval between administrations. The second experimental group received Bodifors intramuscularly at a dose of 6 ml per animal every 14 days, for a total of four injections [8]. The third group served as the control and received no treatment. All animals were maintained under identical feeding and management conditions. The experiment lasted for 60 days. Body weight was measured before the start of the trial, on day 30, and at the end of the experiment. Physiological parameters were monitored throughout the study, and the obtained data were analyzed to evaluate the comparative effects of Miosta-H and Bodifors on calf growth and physiological status [9].

Results and Discussion

Initially, the clinical and physiological parameters of calves in both the experimental and control groups were evaluated [10]. The obtained results are presented in Table 1.

Table 1. Physiological Parameters of Experimental and Control Calves

Group	Body Temperature (°C)	Heart Rate (beats/min)	Respiratory Rate (breaths/min)
Control	39.3	97	34
Miosta-H	39.1	98	32
Bodifors	39.2	97	33

The data presented in Table 1 indicate that no significant differences were observed in the physiological parameters of calves among the control and treatment groups. Body temperature, heart rate, and respiratory rate remained within normal physiological ranges throughout the study period, suggesting that neither Miosta-H nor Bodifors adversely affected the health status of the animals [11-12].

Table 2. Growth Performance of Calves During the Experimental Period

Group	Initial Body Weight (kg)	Average Daily Gain (g)	Body Weight After 30 Days (kg)	Body Weight After 60 Days (kg)	Difference at the End (kg)	Relative Growth (%)
Control	181.9	790	203.3	227.0	–	100
Miosta-H	181.6	943	209.9	237.0	10.0	104.4
Bodifors	181.8	830	206.7	233.5	6.5	102.9

The growth performance results demonstrated a positive effect of both biostimulants on calf body weight gain. Calves treated with Miosta-H showed a body weight increase of 6.6 kg above the control group after 30 days and 10.0 kg higher after 60 days. Similarly, calves receiving Bodifors exceeded the control group by 3.4 kg after 30 days and by 6.5 kg at the end of the experiment [13].

Analysis of average daily weight gain revealed that Miosta-H-treated calves gained approximately 153 g more per day than the control animals, whereas Bodifors-treated calves showed an additional daily gain of about 40 g. When expressed as percentages, body weight gain in the Miosta-H group was 4.4% higher than in the control group, while the Bodifors group demonstrated a 2.9% increase [14].

These findings indicate that both biostimulants contributed positively to growth performance, although Miosta-H produced a more pronounced effect than Bodifors. The absence of adverse physiological changes alongside improved weight gain suggests that these preparations may be safely incorporated into calf-rearing programs to enhance growth and productivity [15].

Conclusion

The administration of Miosta-H and Bodifors biostimulants did not produce significant changes in the clinical and physiological parameters of calves compared with the control group, and all measured values remained within normal physiological limits.

The use of Miosta-H resulted in a greater increase in calf body weight, exceeding the control group by 10.0 kg or 4.4% at the end of the experimental period.

The application of Bodifors as a biostimulant increased calf body weight by 6.5 kg or 2.9% compared with the control group.

The results suggest that both Miosta-H and Bodifors can be effectively used in cattle farming to improve growth performance of calves and contribute to increased economic efficiency, with Miosta-H showing superior effectiveness under the conditions of this study.

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