

Article

Effect of The Dolmix KR Drink Preparation on The Physiological Parameters of Rabbits

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Abstract: This article presents the results of experimental studies on the effect of the Dolmix KR Drink preparation on certain morphological parameters of rabbit blood. Administration of Dolmix KR Drink to rabbits at two months of age ensures the maintenance of blood parameters within physiological norms. When the preparation was administered at a dose of 10 mg/kg of feed, the number of erythrocytes increased by 3.4%, 6.0%, and 7.2% on the 10th, 20th, and 30th days of the experiment, respectively, while hemoglobin levels increased by 4.1%, 7.0%, and 7.9%. In the third experimental group, rabbits receiving 15 mg/kg of feed for 30 days showed increases in erythrocyte counts of 7.0%, 10.2%, and 7.3% on the 10th, 20th, and 30th days, respectively. In the fourth group, the number of erythrocytes per 1 mm³ of blood increased by 9.6%, 12.0%, and 11.8% compared to the control group.

Keywords: Dolmix KR Drink, rabbit, physiological parameters, biochemical parameters, blood serum.

Introduction

Agriculture occupies a leading position in the economy of our republic. This sector supplies the population with a wide range of consumer goods and food products. In providing agricultural products to the population, the rabbit farming sector plays a significant role. At the same time, rabbit breeding is of great importance in meeting the daily needs of the population by supplying dietary meat rich in high-quality protein and fur products used in industry [1; 2; 3; 4].

In order to further develop rabbit farming, a system of targeted measures is being implemented, including the introduction of advanced technologies and innovative developments into the sector, deepening the processing of rabbit meat and fur products, expanding their types and export volumes, and producing competitive rabbit products to adequately supply the population with rabbit-derived products [5; 6; 7].

In recent years, scientists in our country have synthesized various bioactive substances for livestock production from locally available raw materials and introduced them into practical use. Taking into account that the Dolmix KR Drink preparation contains calcium (Ca) and magnesium (Mg) elements and possesses immunomodulatory properties, the present study aimed to investigate its effects on the morphological parameters of rabbit blood [8; 9; 10].

Materials and Methods

For the laboratory experiments, a total of 40 two-month-old meat rabbits of a local breed were obtained from the rabbit farming enterprise “Aslxo’ja Darg’om Agro Velikan” LLC located in the Pasdarg’om district of Samarkand region and transferred to the university’s experimental rabbit facility. The rabbits were divided into four groups, each consisting of 10 animals. During the experiment, the Dolmix KR Drink preparation was administered, and its effects on survivability, live weight gain, as well as morphological and biochemical blood parameters were studied. The primary objective was to achieve high efficiency by using Dolmix KR Drink to raise physiologically healthy rabbits and to improve the quality characteristics of the products obtained from them.

In order to prevent metabolic disorders among rabbits, the effects of Dolmix KR Drink on the physiological state of the animals and on certain hematological blood parameters were determined and compared with results obtained prior to the use of the preparation, with the aim of addressing the identified problems.

The first group (control) consisted of 10 rabbits fed a standard farm ration without the preparation. The second, third, and fourth groups were experimental groups: the second group received Dolmix KR Drink at a dose of 10 mg/kg of feed, the third group at 15 mg/kg, and the fourth experimental group at 18 mg/kg of feed. The preparation was administered for a period of 30 days.

Morphological blood parameters were examined on the 10th, 20th, and 30th days of the experiment. Hemoglobin concentration in the blood was determined using the hemoglobin cyanide method with acetone cyanohydrin according to I.P. Kondrakhin, employing a KFK (clinical photocolorimeter). The number of erythrocytes and leukocytes per 1 mm³ of blood was determined after staining with Romanowsky–Giemsa stain using the method described by I.A. Bolotnikov and Y.V. Solovyov. The numerical data obtained during the experiment were statistically processed using the method of P.F. Rokitsky, and differences between groups were evaluated using Student’s t-test at a significance level of $P \leq 0.05$.

Specifically, rabbits in the first (control) group were fed a standard farm ration. Rabbits in the second experimental group received Dolmix KR Drink mixed with a manually prepared ration at a dose of 10 mg/kg of feed for 30 days, starting from two months of age. Rabbits in the third experimental group received the preparation at a dose of 15 mg/kg of feed under the same conditions, while rabbits in the fourth experimental group were administered Dolmix KR Drink at a dose of 18 mg/kg of feed for 30 days, starting from two months of age.

Results and Discussion

The experimental observations demonstrated that rabbits in the second experimental group receiving Dolmix KR Drink at a dose of 10 mg/kg of feed for 30 days showed an increase in erythrocyte counts by 3.4%, 6.0%, and 7.2% on the 10th, 20th, and 30th days of the experiment, respectively. During the same periods, hemoglobin concentrations increased by 4.1%, 7.0%, and 7.9% compared to the control group.

In the third experimental group, rabbits receiving Dolmix KR Drink at a dose of 15 mg/kg of feed for 30 days exhibited increases in erythrocyte counts of 7.0%, 10.2%, and 7.3% on the 10th, 20th, and 30th days of the experiment, respectively.

In the fourth experimental group, the number of erythrocytes per 1 mm³ of blood increased by 9.6%, 12.0%, and 11.8% on the 10th, 20th, and 30th days, respectively, compared to the blood parameters of rabbits in the control group.

Gr oups	Day 10			Day 20			Day 30		
	Er ythroc ytes	H emogl obin	L eukoc ytes	Er ythroc ytes	H emogl obin	L eukoc ytes	Er ythroc ytes	H emogl obin	L eukoc ytes

Control	3. 21 ± 0.12	94 .0 ± 0.6	8. 8 ± 0.98	3. 01 ± 0.14	93 .0 ± 0.9	8. 5 ± 2.11	3. 47 ± 0.06	94 .0 ± 0.6	8. 7 ± 1.56
Experimental (I)	3. 32 ± 0.10	98 .0 ± 4.1	9. 1 ± 1.19	3. 20 ± 0.11	10 0.0 ± 0.5	8. 7 ± 1.55	3. 51 ± 0.13	10 2.0 ± 0.8	8. 8 ± 1.2
Experimental (II)	3. 45 ± 0.07	10 1.0 ± 3.3	8. 9 ± 2.15	3. 35 ± 0.10	10 2.0 ± 1.4	9. 0 ± 0.87	3. 78 ± 0.16	10 4.0 ± 2.1	8. 96 ± 1.73
Experimental (III)	3. 55 ± 0.06	10 2.0 ± 2.1	8. 5 ± 1.37	3. 42 ± 0.08	10 3.0 ± 4.6	8. 8 ± 1.40	3. 93 ± 0.05	10 5.0 ± 1.1	8. 7 ± 1.89

Clinical Parameters of Young Rabbits (n = 15), M ± m

Groups	Measurement time	Respiration (breaths/min)	Pulse (beats/min)	Body temperature (°C)
Physiological norm	—	50–60	120–200	38.5–39.5
Control group (N:1)	At the beginning of the experiment	54.7 ± 0.7	135.7 ± 4.3	38.5 ± 0.03
	At the end of the experiment	52.5 ± 0.6	133.1 ± 2.7	38.2 ± 0.08
Experimental group (N:2)	At the beginning of the experiment	55.6 ± 0.3	134.1 ± 4.2	38.5 ± 0.5
	At the end of the experiment	52.9 ± 0.7	136.7 ± 1.4	38.3 ± 0.2
Experimental group (N:3)	At the beginning of the experiment	57.7 ± 0.2	135.6 ± 3.9	38.8 ± 0.4
	At the end of the experiment	55.6 ± 0.3	136.3 ± 3.1	38.4 ± 0.5
Experimental group (N:4)	At the beginning of the experiment	58.4 ± 0.3	136.1 ± 2.3	38.7 ± 0.2
	At the end of the experiment	57.3 ± 0.5	136.3 ± 3.8	38.3 ± 0.3

In the experimental groups, the respiratory rate was slightly higher compared to the control group, with the greatest difference observed in the fourth experimental group. Pulse rates in all groups varied within approximately 2–3%, which corresponds to the physiological norm. Differences in body temperature did not exceed 0.3–0.5%, indicating stable thermoregulation. Based on the results and observations obtained during the experiments, it can be concluded that the experimental factors did not have a negative effect on the clinical condition of the animals.

Conclusion

Analysis of the data obtained from laboratory experiments of the scientific study showed that the applied immunomodulators increased erythrocyte counts and hemoglobin levels among the morphological blood parameters of rabbits, while not exerting a negative effect on the number of leukocyte types in the leukocyte formula.

REFERENCES

- [1] D. S. Toshmurodov, D. Eshimov, and O. B. Khalilov, "Effect of chitosan hydroxyapatite on the intestinal microflora of broiler chickens," *Talqin va Tadqiqotlar*, vol. 2, no. 7 (44), pp. 1–6, 2024.
- [2] M. Sh. Akbaev, A. A. Vodyanov, N. E. Kosminkov, et al., *Parasitology and Invasive Diseases of Animals*. Moscow, Russia: KolosS, 2002, 743 p.
- [3] D. S. Tashmurodov et al., "Effect of a diet containing chitosan–hydroxyapatite on physiological, biochemical, and productive parameters of broiler chickens," 2023.
- [4] D. S. Tashmurodov and D. Eshimov, "Effect of chitosan (*Bombyx mori*) with hydroxyapatite on the gastrointestinal microflora of broiler chickens," 2023.
- [5] N. S. Bespalova, *Modern Antiparasitic Agents in Veterinary Medicine*. Moscow, Russia: KolosS, 2006, 192 p.
- [6] N. S. Bespalova, I. D. Shelyakin, and V. A. Stepanov, *Methodological Guidelines for the Preparation and Formatting of Coursework in Parasitology and Invasive Animal Diseases*. Voronezh, Russia, 2006, 35 p.
- [7] A. Andreeva, *Tsennovik: Agricultural Review Journal*. Moscow, Russia, 2015, 177 p.
- [8] A. Slyusar, "Perfect Agriculture," *Perfect Agriculture Journal*, no. 3, Moscow, Russia: LLC "Agency 'Modern Technologies'", 2015.
- [9] T. Kuzmenko, "AtmAgro. Agro-Industrial Bulletin," Online publication, 2014. [Online]. Available: <http://atmagro.ru>
- [10] D. Toshmurodov et al., "The use of chitosan hydroxyapatite in improving clinico-physiological indicators of broiler chicks, as well as in increasing productivity and preservation," *BIO Web of Conferences*, vol. 95, p. 01030, 2024.
- [11] R. A. Merck, *The Merck Veterinary Manual*, 11th ed. Kenilworth, NJ, USA: Merck & Co., 2016.
- [12] J. Kaneko, J. W. Harvey, and M. L. Bruss, *Clinical Biochemistry of Domestic Animals*, 6th ed. San Diego, CA, USA: Academic Press, 2008.
- [13] E. Thrall, *Veterinary Hematology and Clinical Chemistry*, 2nd ed. Ames, IA, USA: Wiley-Blackwell, 2012.
- [14] A. A. Abdel-Moneim, A. M. Shehata, and E. E. Khidr, "Influence of mineral supplements on hematological and biochemical parameters of rabbits," *Journal of Animal Physiology and Animal Nutrition*, vol. 103, no. 2, pp. 567–575, 2019.
- [15] S. Lebas, P. Coudert, H. de Rochambeau, and R. G. Thébault, *The Rabbit: Husbandry, Health and Production*. Rome, Italy: FAO Animal Production and Health Series, 1997.