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THE USE OF FEED ADDITIVES IN THE DIET OF CATTLE

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Abstract:

The article contains data on the study of the heifers' ethology of the Holstein breed and the influence of the feed additive "Imnamak" introduced into the diet of replacement heifers on the ethological indicators formation.

Keywords: Feed additive, biostimulator, bone marrow, vitamins, mineral substances, immunofor, the Holstein breed, ration, ethological indicators, immunity, homeostasis

INTRODUCTION.

Feed additives – these are products that are not drugs possessing plant, animal, microbiological, mineral and synthetic origin, which are added to the diet of animals in order to ensure their physiological activity, prevent, grow, develop and increase productivity, improve vital activities and increase taste, mastery and technological features of food substances. Currently, a large number of these products are produced. One of these products is the "Imnamak" drug, produced by the private company" Bibinor", which is part of the "Uzfarmsanoat" state joint stockc concern. It includes salt lick , immunophore complex preparation, Dorogov antiseptic stimulant (ASD 2- fraction), peppermint oil (menthol), bran and other excipients.

Immunophores include tissue biogenic stimulants, bone meal, vitamins C, D, E, lysine, methionine, cystine, amino acids, phosphorus, natrium, magnesium, sulphur, zinc, iron, copper, mamganese, cobalt and iodine. These substances are in balanced amounts in the immunophore complex, ensures high activity of the immune system, normalization of vital physiological processes and increases the body's resistance to infectious diseases, enhances motor and secretory activity of the gastrointestinal tract, improves nutrient uptake.

The drug ASD-2 fraction was created by russian scientist A.V. Drogov in 1948 and is widely used in veterinary practice, and the ASD-3 fraction in medicine. This preparation is a complex compound obtained by breaking down meat and bone meal at high temperatures and driving, containing 121 components. The main components are methylamine acetate, methyl mercaptan, vinegar acid, methyl urea, cyclopentane, decane, quaternary ammonium compounds and single, quaternary phenols.

Methylamine acetate stimulates the synthesis of biological amines in the body, these amines - choline, spirerone, histamine, adrenaline act as stimulants and inhibitors of the body's activity.Methyl mercaptan methionine, choline, coenzyme - involved in synthesis A, is a radiation protector.Vinegar acid is a common carbon acid that is an active component of coenzyme - A, is involved in fatty acid biosynthesis, acetyl choline.Methyl urea is important as an active component in the synthesis of fatty acids involved in fat metabolism in the body.Cyclopentane is involved in the biosynthesis of purine and pyrimidine bases. Decane plays an important role in the synthesis of alcohols, carboxymethyl ether, and cetone. Salts of ammonium compounds have a broad-spectrum antimicrobial effect, mono- and quaternary phenols are involved in the synthesis of pigments, vitamins, natural antimicrobial bodies, quinoins in the body.Mint oil is an important metabolite of menthol, an organic substance that has anesthetic, vasodilating, stimulating receptors on the skin and mucous membranes, and has weak antiseptic properties.

In general, under the influence of the above components improves the body's resilience reactions, ensures high activity of internal protective regulators, increases the resistance of living tissue systems, normalizes homeostasis, which in turn has a positive effect on growth and development of animals.

PURPOSE OF THE RESEARCH

To sudy the ethological features of female bodies of Holstein breeds and the influence of nutritional factors on their formation, in particular, the food additive "Imnamac".

MATERIALS AND METHODS.

In order to study the effect of the feed supplement "Imnamak" on the ecological performance of females, a special study was conducted in 2020-2021 at the farm "Karpat ola chashmasi" in Yakkabag district of Kashkadarya region. Two groups (n = 15 heads) of 12-month-old Holstein females brought to the farm from Germany were formed using the method of double analogues. The first group was based on a basic ration of farm nutrients, and the second group of females was added to the main ration of 5 g of "Imnamak" concentrate for 30 days per head.
Ethological parameters of female bodies were studied at the age of 12, 15 and 18 months by the method proposed by V.I. Velikjanin[3]. To do this, the main behavioral indicators were followed by 6-hour timed observations over three days. The general activity index recommended by V.I. Velikjanin was adopted as the main criterion for assessing the behavior of animals, and it was calculated using the following formula [2]:

$$\text{УФИ} = \frac{\Sigma\text{ТОу} + \text{ТК} + \text{ЁК}}{360}$$

Here:
ТО – feed intake in an upright position, min.
ТК – chewing in the upright position
ЁК – chewing in a supine position

RESEARCH RESULTS.

The natural characteristics of animals are an important and complex biological function, ensuring their relationship and connection with the environment. A person was very interested in studying the nature of animals, which played an important role in their training for handshakes and housekeeping. Currently, the study of animals ethologyis necessary for their use for human needs. The study of animal ethology will allow zooengineering and veterinarians to create animal populations with economically useful signs, create favorable conditions for them to ensure high productivity and health. The transfer of milk and meat production in cattle breeding to the basis of industrial technology, along with the increase in the production of cheap and quality products, necessitates the selection of animals belonging to this technology, a dynamic ethological type.

The study of the ethological characteristics of female bodies in the experiment (Table 1) shows that as animals age, their behavioral characteristics become more complex and change. In particular, the duration of the standing period increased from 12 months to 15 months in both groups of animals.

The total activity index increased in female bodies in all groups between 12 and 18 months old. In the control group, the index increased by 8.0% compared to 15 months to 12 months, 11.3% compared to 18 months to 15 months, and 20.3% compared to 18 months to 12 months; in the experimental group, it increased by 8.8%, 13.6%, and 23.6%, respectively. The overall activity index in the control and experimental groups was mainly due to an increase in the assimilation period of nutrients and return of ruminants in accordance with their age.

Table 1
Ethological indicators of female bodies in the experiment.

Indicators	12 months old		15 months old		18 months old	
	Control group	Experimental group	Control group	Experimental group	Control group	Experimental group
In the upright position, total, min.	224 ± 0,53	228 ± 0,62	183 ± 0,57	189 ± 0,70	171 ± 0,76	176 ± 0,69
Food intake	92 ± 0,38	96 ± 0,42	101 ± 0,36	105 ± 0,39	103 ± 0,48	108 ± 0,51
Chewing	41 ± 0,29	45 ± 0,32	46 ± 0,27	51 ± 0,26	60 ± 0,23	68 ± 0,29
In lying condition, min.	136 ± 0,63	132 ± 0,65	177 ± 0,39	171 ± 0,52	189 ± 0,68	184 ± 0,72
Including chewing gum	78 ± 0,39	80 ± 0,32	81 ± 0,30	84 ± 0,34	91 ± 0,38	97 ± 0,48
Sleep	49 ± 0,23	50 ± 0,26	52 ± 0,24	51 ± 0,22	63 ± 0,36	60 ± 0,42
Total activity index	0,586 ± 0,01	0,613 ± 0,02	0,633 ± 0,008	0,667 ± 0,007	0,705 ± 0,02	0,758 ± 0,01

It should be noted that the addition of the drug "Imnamak" to the diet of females led to the activation of life manifestations in them. In the experimental group receiving this supplement, females at 18 months old had a 2.9% increase in total upright activity time, a 4.8% increase in feed intake, a 13.3% increase in upright chewing time, and a 6.6% increase in chewing time before bedtime.

The overall activity index was 4.6% higher in females at 12 months old, 5.3% at 15 months old, and 7.5% at 18 months old in the experimental group compared to the control group.
The results obtained are consistent with the findings of other researchers. [1, 4, 5].

CONCLUSION

The use of "Imnamak" feed supplement in the diet of female carcasses designed to replenish the herd has a positive effect on the ecological performance of growing young cattle, which has an effective affect on the strengthening of the process of feeding, chewing. Knowing the behavioral characteristics allows to develop a program of feeding female carcasses and determine the technological parameters of breeding high-yielding cows adapted to the conditions of intensive industrial technology.

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