

EFFECTIVENESS OF INTROVIT A + WS IN THE DIET OF DAIRY COWS.

Javkharov Oybek Zulfiqorovich

Andijan Institute of Agriculture and Agrotechnology, independent researcher

Amirov Shavkat Kuzibaevich

Supervisor, Associate Professor, Samarkand Institute of Veterinary Medicine

Sobirov Ilhom Abdullaevich

Andijan Institute of Agriculture and Agrotechnology

Karimov Sherali Allaberdievich

Termez branch of Tashkent State Agrarian University, Candidate of Agricultural Sciences

Esonov Hasanboy Abdumutallibovich

Andijan Institute of Agriculture and Agrotechnology

Annotation. *The experiment examined the effect of the use of Introvit A + WS-amino acid-vitamin nutrient mixture in the diet of dairy cows on the efficiency of milk production. The use of Introvit A + WS-amino acid-vitamin in the diet resulted in an increase in milk productivity due to balancing the protein-energy ratio in cows, an increase in milk fat and protein content, and a 5% reduction in feed consumption due to efficient cow nutrition.*

Keywords. *Netherlands, Introvit A + WS-amino acid-vitamin nutrient blend, domestication, various factors, dairy cows, milk yield, vitamins, amino acids, proteins, protein, immunity, antioxidant, lactation, SOMO, casein, albumin, globulin, lactose, macro and micronutrients, etc.*

Introduction

Since the time when humans domesticated cattle, various factors have been studied to increase the milk productivity of cows. As a result of the implementation of measures aimed at increasing milk productivity over a long period of time, the productivity of cows has increased several tens of times.

Breeds, feed quality and feeding rate significantly affect the milk yield and farm useful traits of cows. When the nutrients in the diet are high in nutrients, vitamins, macro and micronutrients, the cows are healthy and the milk shows good productivity. The quality of milk is also high.

The climatic conditions of the Republic of Uzbekistan are hot, and grasses in the pastures begin to emerge in early spring. When heavy rainfall is observed in mountainous areas, pastures will be available until August. After August, the cows are fed until late autumn with green fodder grown in irrigated crop fields.

Farms create food stocks to prepare for the winter and use these nutrients to feed their cattle during the winter. Foods stored on farms for the winter season should be sufficient, nutritious and of good quality. Otherwise, it should be borne in mind that poor quality feed has a negative impact on the health of cows, milk yield, milk quality, reproductive characteristics of cows [19, pp. 17-18].

Vitamins in food are of great physiological importance in the body of cows and are involved in the most important biochemical processes of metabolism.

Provides moderate feeding of cattle, development of dairy cattle breeding and large-scale production of livestock products [15, pp. 14-16].

In the absence of vitamins, growth and development in animals is slowed or stopped, wound healing in the body is difficult, tissue regeneration is slowed down. Lack of retinol in the body leads to pathological changes in the epithelial tissue of the respiratory and digestive organs, mucous membranes of the genital system, inflammation of the mucous membranes of the eyes and nose, xerophthalmia, opacity of the cornea and hemorrhage [6, pp. 38-39; 10, 652-653 b; 13, 17 b].

An important measure is to ensure a regular supply of minerals in the diet of cows. This measure is especially important during the milking of cows [2, pp. 15-16; 8, 22-24-b; 11, pp. 6-9].

Lack of nutrients in the diet of dairy cows, a violation of protein and vitamin metabolism, a decrease in the body's resistance and obstetric pathology during childbirth are observed. To prevent this condition, some scientists recommend the use of vitamin preparations (trivit, E-selenium) for prophylaxis [17, p. 20].

The organization of rational feeding of dairy cows is the basis for increasing the average milk yield in the herd to 6500 kg [20, pp. 16-18].

It is known that beta-carotene affects important vital processes in the body of animals: it participates in the synthesis of the hormone progesterone, is converted into vitamin A in the body and serves as an antioxidant to provide immunity and hormonal activity in the body. Beta-carotene plays an important role in the ability of cows to replenish the herd. The role of this vitamin is invaluable, especially in the development of the corpus luteum. The amount of beta-carotene in the yolk sac of the ovary averages 105 mcg / g, which is 184 times higher than the amount in the liver (0.57 mcg / g). Decreased b-carotene in the body of cows leads to poor development of the corpus luteum, resulting in a sharp decrease in the fertility of the animal [5, p. 39].

High-yielding cows need this vitamin very high, and there is a constant deficiency of them in the body. To replace it, it is recommended to use Rovimix beta-carotene dry granules produced by DSM Nutritional Products [4, p. 53].

When energy deficiency was observed in the diet of cows during the first 4 months of lactation, a sharp prolongation of their calving period was found [22, pp. 327-333].

According to the Italian G. Bertoni et al., The full feeding of cows in the first two months of lactation ensures that their calving period is 23-44 days early [21, p. 162].

When milking more than 25 kg of milk per day from cows, it is advisable to include protein and energy supplements in the diet. The author proved that the milk yield of dairy cows depends on 55% of energy in the diet, 30% on protein and 15% on adequate supply of minerals in the diet [18, pp. 18-20], to such conclusions, Gavrin D., Kryajeva V. K also came [3, pp. 20-22].

The study of the importance of amino acids in increasing the milk productivity of cows remains a pressing issue. Studies show that amino acids are essential in the metabolism of vital proteins, enzymes and biologically active substances. The role of non-essential amino acids in these processes, especially methionine, cestin, tryptophan, lysine, is invaluable. They play an important role in the formation of the body's immune system, normal liver function, prevention of inflammatory processes [6, pp. 38-39].

When effective feeding of farm animals is organized, not only will their milk productivity increase, but food consumption per unit of output will decrease and economic indicators will increase [9, p. 86; 12, 7-13 b; 16, pp. 28-29].

Complete feeding of cows improves their health, fertility, herd reproduction properties and ensures high milk yield [7, pp. 11-13].

During the winter, the demand for various nutrients in the body of dairy cows increases sharply, especially the need for macro and micronutrients, as well as vitamins. If such substances

are not provided in sufficient quantities in the diet of cows, the body will be forced to excrete the accumulated substances in milk. There is a deficiency of certain substances in the body of cows. It should be borne in mind that the demand for amino acids, fats, glucose, calcium and phosphorus increases sharply in cows after calving and during their milking.

Taking into account the above points, we aimed to use in the experiment in the diet of dairy cows a nutritional mixture containing Introvit A + WS-amino acid-vitamin content, produced in the Netherlands.

Object and method of research

The experiments were carried out on Swiss cows bred at the Bosh Bulak Chorva breeding farm in the foothills of Kashkadarya region. Two groups were formed in the experiment. 5 cows were attached to each group by analog method. Group I includes second-generation cows obtained by insemination of locally bred cows with a Swiss bull imported from Germany, and Group II includes purebred Swiss, second-generation cows bred locally. In the experimental group I cows were mixed with 6 grams of Introvit A + WS amino acid-vitamin supplement per head of cattle, while the group II cows were fed using the existing ration on the farm. The amount of feed consumed to the cows was monitored for 10 days, the milk yield was monitored every 10 days, and the milk fat, protein content, SOMO and density index were measured in the Lactan-1,4 analyzer, fat, protein yield and base fat milk. the amount was calculated on the basis of formulas [1, pp. 393-405].

The acidity of the milk was determined by titration. The amount of feed consumed to the cows was determined based on common methods adopted in zootechnics. The cost-effectiveness of the study was calculated by determining the difference between the cost per cow during lactation and the value of the product obtained from it. The obtained numerical data were statistically analyzed by the method of small samples, using the computer program Microsoft EXCEL, as well as the method of N.A. Plokhinsky (1969) [14, p. 256].

Results obtained and its analysis

Cows in all experimental groups were formulated and fed using farm-grown feed.

Table 1.

Feeding ration of dairy cows with a live weight of 450-500 kg, daily milk yield 10-12 kg, milk fat 4.0-4.2%.

Type of food	Nutrients present in the diet									
	The amount of food	Food unit	Exchangeable energy	Dry matter	Digestible protein	Sugar	Calcium	Phosphorus	Carotene	
	kg	kg	mDj	kg	g	g	g	g	mg	
Natural herb pie	3	1,59	21	2,4	156	45	19,8	3,6	30	
Beda pichani	2	0,88	13,4	1,7	202	40	34	4,4	98	
Wheat straw	3	0,6	14,3	2,6	15	9	8,4	2,4	12	
Corn silage	22	4,4	50,6	5,5	308	132	30,8	8,8	440	
Beda senaji	4	1,4	16,8	1,8	284	76	43,6	4	160	
Hashaki turnip	15	1,5	17	1,5	90	720	7,5	6	0	
Wheat bran	1,5	1,13	13,3	1,3	145,5	70,5	3	14,4	3,9	

	Wheat groats	1	1,28	10,8	0,9	106	20	0,8	3,6	0,06
	Salt	0,1	-	-	-	-	-	-	-	-
0	Introvit A + WS	0,006	-	-	-	-	-	-	-	-
	total	X	12,8	157,1	17,5	1307	1113	148	47,2	744

Introvit A + WS amino acid-vitamin supplement contains protected amino acids, high-value vitamins, salts of macro-and micronutrients, which facilitates the absorption of various nutrients in the body. Accelerates milk production. As a result of the cows' appetite for food, they are able to make efficient use of the nutrients available on the farm.

In some farms, the quality of food stored for the winter is not at the required level. Such farms try to include more cereals in their diets in order to make up for the shortage of poor quality nutrients. When large amounts of cereals are included in the diet, firstly, the cost of the ration increases, and secondly, the amount of starch or carbohydrates exceeds the norm, which leads to the development of acidosis in the body. In order to prevent such cases, save the consumption of grain foods and efficient use of nutrients, we studied the results of the use of Introvit A + WS amino acid-vitamin nutrient mixture in the diet of cows in the experiment.

We fed INTROVIT A + WS amino acid-vitamin supplement once a day to the ration of cows in the first group of experiments once a day, mixing with the morning feed, 1 g for every 80 kg of live weight for 5 days, with a break of 10 days. When INTROVIT A + WS was given in this order, an average of 180 grams per head of cow was consumed during the experiment. Cows fed in this order were observed to consume the nutrients with appetite and use the nutrients more efficiently than the cows in the second group.

The following table shows that INTROVIT A + WS amino acid-vitamin nutritional supplement has a positive effect on milk yield and chemical composition of milk of cows.

Table 2

Milk yield and physical properties of milk of experimental cows, n = 5, (X±Sx)

Indicators	Groups	
	I	II
Live weight of cows, kg	477,36±5,43	475,18±6,22
90-day milk yield, kg	1320±77,5	1015±94,5
Dry matter in milk,%	13,84±0,02	12,96±0,04
Milk fat,%	4,35±0,02	3,97 ±0,01
Milk protein,%	3,48±0,01	3,45 ±0,02
Oil consumption, kg	57,42±1,1	40,3±0,9
Protein consumption, kg	45,94±0,38	35,0 ±0,32
Fat-free dry milk residue, (SOMO),%	9,49±0,03	8,99 ±0,04
Density of milk, g / cm ³	1,030±0,01	1,030±0,01
Sourness of milk, °T	17,5±0,05	17,7 ±0,02

The table shows that 305 kg more milk was milked from group I cows than from group II cows at 90 days of milk yield (R <0.05). Compared to these groups, the dry matter, fat, protein, and NSAID (SOMO) content of milk was 0.88, respectively; 0.38; 0.03 and 0.5% were predominant in group I cows (R <0.01).

No significant differences between groups were observed when comparing the physical properties of milk, i.e., density and acidity. Milk from cows in both groups fully met the requirements of DST-13268-88 (state standard).

The results of scientific research must be determined by economic efficiency indicators. In the experiment, the economic indicators on the milk yield of cows were as follows.

Table 3

**Cost-effectiveness indicators of the experiment
(on average per head)**

Indicators	Groups	
	I	II
90-day milk yield, kg	1320	1015
Total food unit consumed, kg	1152	1152
The actual feed unit consumed by cows, kg	1094,4	1036,8
Milk fat,%	4,35	3,97
Oil consumption, kg	57,42	40,3
The amount of milk in the base fat, kg	1595	1119,3
1 kg of feed unit used for the production of milk in base fat, kg	0,72	1,03
Body price of 1 kg of milk, soums	2325	2300
Total expenses, m.som	3,069	2,336
Price per 1 kg of some fat milk, UZS	1924	2087
Purchase price of 1 kg of some fat milk, UZS	2800	2800
Income, m.som	4,466	3,134
Net profit, m.som	1,397	0,798
Profitability rate,%	45,5	34,1

In Table 3, cows in group I consumed 95 percent of the total feed given to them, while in group II, the figure was 90 percent. Cows of group I consumed 57.6 kg of feed units or 5.3% more than cows of group II. Hence, the premix added to the diet of group I cows had a positive effect on the digestion of cows.

At 90 days of lactation, group I cows had a baseline fat content of 475.7 kg or 42.5% ($R < 0.05$) over group II cows. The cost of milk from group I cows in the experiment was 25 soums more expensive than from group II cows. This cost is explained by the inclusion of INTROVIT A + WS amino acid-vitamin supplement in the diet of cows in this group. The income of cows of group I amounted to 4,466 thousand soums, net profit - 1,397 thousand soums, while the figures of group II amounted to 3,134 and 0.798 million soums, respectively. It was observed that the advantage in terms of profitability was 11.4% in favor of group I cows.

Conclusions

Thus, the use of Introvit A + WS-amino acid-vitamin nutrient mixture in the diet of dairy cows had a positive effect on all indicators of milk production from cows. At the same time, 305 kg more milk was milked from cows of group I than from cows of group II during 90 days of lactation, the content of dry matter, fat, protein and NSAID (SOMO) in milk was 0.88; 0.38; 0.03 and 0.5% higher, respectively. The efficiency of dietary intake of cows of group I was 10% higher than that of

their counterparts of group II. The body price of milk from cows of the first group in the experiment was 25 soums higher. This cost is explained by the inclusion of INTROVIT A + WS amino acid-vitamin supplement in the diet of cows in this group. The cost-effectiveness of milk production was 11.4% higher in group I cows than in group II cows.

References

1. Drummers N.V. Dairy business. Moscow, "Kolos", 1983, pp. 393-405.
2. Bulatov A.P., Kurdoglyan A.A. Efficiency of using rapeseed and fodder animal fat for milk production. // "Zootechnics". Moscow, 2007, No. 8, pp. -15-16.
3. Gavrin D., Kryazheva V. To the question of the usefulness of feeding lactating cows. // "Dairy and beef cattle breeding". Moscow, 2010, No. 4, pp. -20-22.
4. Gorneev A. An irreplaceable component of the cattle ration. // Livestock in Russia. 2013, June, p.-53.
5. Gostev V., Klinsky Y., Chomaev A. Beta-carotene and the reproductive function of cows // Livestock of Russia 2013, March. from. - 39.
6. Duborezov V., Romanov V., Nekrasov R. Provitol in the diets of fresh cows. // Livestock in Russia. 2013, Special issue, p. -38-39.
7. Javharov O., Amirov Sh. Prospects for complete nutrition of cows. Journal of Animal Husbandry and Breeding. Tashkent, 2020, №03, 11-13-p.
8. Zaikin V.V., Soboleva N.V., Kitaev E.A., Karamaev S.V. Technological properties of milk from black-and-white and Bestuzhev breeds. // "Zootechnics". Moscow, 2007, No. 9, pp. -22-24.
9. Karibaev K.K. Technology of feeding farm animals with full-fledged fodder and preparation and storage of feed. Collection of scientific works of UzChITI. Tashkent, 1996, 86-p.
10. Kondrakhin I. P., Lovchenko V. I. Diagnostics and therapy of internal diseases of animals. M. LLC "Aquarium print", 2005, pp. 652-653.
11. Kuznetsov A.S., Kuznetsov S.G. Influence of factors of feeding and maintenance on quality indicators of milk of cows. // "Zootechnics". Moscow, 2010, No. 10, pp. 6-9.
12. Mysik A.T. Nutritional value of feed, animal needs and rationing of feeding. // "Zootechnics". Moscow, 2007, No. 1, pp. 7-13.
13. Norboev Q.N., Eshburiev B.M., Allayorov M. Clinical signs of vitamin and mineral metabolism disorders in productive cows. // Zooveterinary. 2014. №6, 17-p.
14. Plokhinsky N.A. A guide to biometrics for zootechnicians. Moscow, Kolos, 1969, p.-256.
15. Romanenko L., Volgin V., Fedorova Z. Control of the nutritional value of highly productive cows. // "Dairy and beef cattle breeding". Moscow, 2010, No. 3, pp. -14-16.
16. Slozhenkina M., Zlobina E., Vlaskina E., Yurina E. // Increase of milk productivity of cows when used in rations of feed prepared with the use of a new preservative. // "Dairy and beef cattle breeding". Moscow, 2011, No. 2, pp. 28-29.
17. Tankova O.V. Violation of mineral and vitamin metabolism in cows. Author's abstract. diss. Cand. vet. sciences. Barnaul, 2011, p.-20.
18. Taranovich A. Protected fats and proteins in feeding highly productive cows. // "Dairy and beef cattle breeding". Moscow, 2010, No. 4. s.-18-20.19.
19. Farmonov N.O. A.A. Kholikov The use of new vitamin preparations in the pathology of the reproductive system of cows. // Zooveterinaria 2015., No. 6, pp. -17-18
20. Kharitonov E. Modern problems in the organization of rationed nutrition for highly productive dairy cattle. // "Dairy and beef cattle breeding". Moscow, 2010, No. 4, pp. -16-18.

21. Bertoni G., Treviso L., Gulamari L. Energy protein supplement and reproductive performance in eariylactating dairy cows. // Book of Abs. Of the 47 the Ann. Meet, of the Eur. Ass. For Anim. Prod., Norway. – 1996. – 162 p.

22. Sonderegger H., Church A. A study of the unfence of the energy and protein supple of the fertility of dairy cows. // Livestock Product. Sci. – 1977. – Vol. 4. - № 4. – p. 327-333.