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# IMPACT OF CARE AND FEEDING OF IMPORTED COWS ON REDUCING MILK PRODUCTIVITY AND IMPROVING FERTILITY

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**Annotation**
The article is based on modern biotechnological methods to increase the milk yield and fertility of cows, the impact of the use of zootechnical and veterinary measures in their feeding and care.

**Keywords:** biotechnology, macro-microelements, premix, protein, vitamins, hormones, sexual orientation, infertility, mation, zootechnics, veterinary measures.

## Introduction

The Action Strategy for the Further Development of the Republic of Uzbekistan for 2017-2021 includes such important strategies as "Development of the breeding base in animal husbandry, the establishment of modern breeding centers on the basis of breeding farms and the sustainable provision of the population with quality and sufficient food products." tasks are defined.

When working with many high-yielding cattle, the expected productivity of purchased cattle is not achieved due to the lack of special feeding systems, care and care technologies to adapt them to local conditions, and their fertility is declining.

Therefore, along with the development and implementation of modern biotechnologies for the adaptation of imported cattle and their offspring, the biological characteristics of young calves, the study of productivity quality, scientifically based storage, storage and feeding technologies, the development of high-yielding cattle. One of the most pressing issues today is to increase the number and use of high-yielding breeds in improving the breed of local cattle.

The purpose of the study. It is the development of technological methods to increase the milk yield of imported cows and to demonstrate and improve the characteristics of fertility.

Materials and methods. The experimental part of the research was carried out on Simmental (flyfix) cows at the livestock farm of AGRO COMPAS LLC, Kibray district, Tashkent region.

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For this purpose, on the basis of the image of the experiments, the existing cows were physiologically, gynecologically and veterinaryly examined with the participation of farm specialists, and 3 experimental groups of cows that meet the requirements were formed.

Cows divided into groups were divided into pregnant and infertile cows as determined by status. The causes of infertility in infertile cows will be studied, and zootechnical and veterinary measures will be taken to improve their fertility.

From the zootechnical measures: during the winter, the cows in the control group were continued in the generally accepted way, while the cows in the experimental groups were kept in buildings with spacious light rooms and dry grazing areas. In the spring and summer, the cows in the experimental groups were housed in buildings with large spreading areas, and on hot summer days, in high porches that partially blocked sunlight above the spreading areas, which protected them from sunlight.

Additional veterinary measures were taken to improve fertility in cows of Experimental Group II. In this case, the ovaries were massaged for 2-3 minutes 10-15 minutes before fertilization, and the clitoris was massaged for 10-20 seconds after fertilization. In addition, vitamins and hormonal drugs were administered to some cows.

Feeding experimental cows. On-farm feed rations were analyzed to supplement deficient vitamins, minerals, and macro- and micronutrients by adding 150 grams of premixes in groups I and II to premium concentrates.

We used the following universal premixes in enriching the feed rations of cows in experimental groups I-II.

The composition of the universal premix consists of the following amounts of vitamins and macro-micronutrients (per 1 kg of premix)

Vitamin A in 100,000 units
Vitamin D3 in 50,000 units
Vitamin E 3000 mg
Niacin (Vitamin V3) 800 mg
Calcium 60 g
Phosphorus 30 g
Magnesium 40 g
Manganese 5000 mg
Mis 1000 mg
Cobalt 20 mg
Selenium 20 mg
Rux 5000 mg
Iodine 50 mg

We present a structured feed ration for feeding cows on an experimental farm, which can be seen in Table 1 below.

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Table 1

| Feed ration for 2021 to feed experimental cows Nutrients and nutrients in the diet | Unit of measurement | Control group | I-experimental group | Experimental group II |
|---|---|---|---|---|
| Beda | kg | 4,0 | 4,0 | 4,0 |
| Corn silage | kg | 20 | 20 | 20 |
| Wheat straw | kg | 2 | 2 | 2 |
| Wheat bran | kg | 8 | 8 | 8 |
| Premix | Kg | - | 0,150 | 0,150 |
| Salt | kg | 0,100 | 0,100 | 0,100 |
| Available in rations | | | | |
| Nutrients in the diet nutritious, nutritious one. | kg | 12,12 | 12,12 | 12,12 |
| Exchangeable energy | mdj | 151,6 | 151,6 | 151,6 |
| Dry matter | kg | 16,83 | 16,83 | 16,83 |
| Crude protein | g | 2126 | 2126 | 2126 |
| Digestible protein | g | 1270 | 1270 | 1270 |
| Crude oil | g | 678 | 678 | 678 |
| Raw fiber | g | 3824 | 3824 | 3824 |
| Starch | g | 168,8 | 168,8 | 168,8 |
| Sugar | g | 544 | 544 | 544 |
| Calcium | g | 79,6 | 88,6 | 88,6 |
| Phosphorus | g | 96,8 | 101,3 | 101,3 |
| Magnesium | g | 229,4 | 229,4 | 229,4 |
| Sulfur | g | 51,8 | 57,8 | 57,8 |
| Iron material | g | 33,8 | 33,8 | 33,8 |
| Iron material | mg | 3702 | 3702 | 3702 |
| Mis | mg | 131,0 | 281,0 | 281,0 |
| ruh | mg | 946,4 | 1696,4 | 1696,4 |
| Manganese | mg | 1282,8 | 2032,8 | 2032,8 |
| Cobalt | mg | 4,16 | 7,16 | 7,16 |
| Iodine | mg | 16,24 | 23,74 | 23,74 |
| Carotene | mg | 484,80 | 484,8 | 484,8 |
| Vitamin-D | s.b. | 1570 | 7657 | 7657 |
| Vitamin E | mg | 1167,2 | 1617,2 | 1617,2 |

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It is clear from Table 1 that the types of nutrients in the feed ration and their composition and nutrition were as follows:

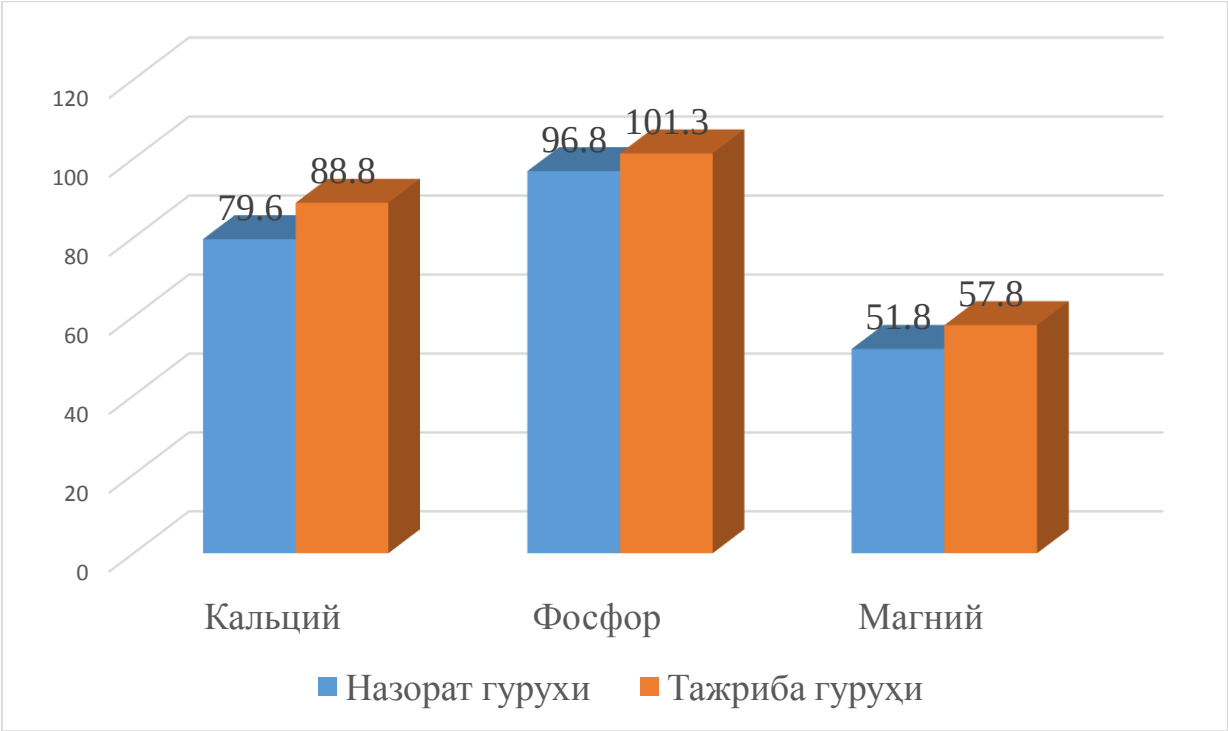
The control and experimental groups did not differ much in terms of the types, amounts, nutrients in the feed rations per unit of feed, as well as the amount of dry matter and so on.

The nutrient content of the winter feed rations of all groups averaged 12.12 kg per feed unit. The total exchangeable energy of the rations was 151.6 CIS, the total amount of dry matter - 16.83 kg and digestible protein - 1270 grams. Each ration of rations contained 105 grams of digestible protein per 1 kg of feed unit. At the same time, 12.50 MDJ of metabolic energy was accumulated per 1 feed unit, the sugar-protein ratio was 0.4: 1, and it was not possible to balance it to the recommended 0.8-1.2: 1 level due to the lack of sugar nutrients.

Other parameters in the rations of the experimental groups differed from the control group due to the use of premixes and vitamins, and these differences were enriched with macro- and micronutrients and vitamins. It should be noted that the ratio of calcium to phosphorus in Uzbekistan is not as balanced as the ratio of sugar and protein, and in all groups was 0.82-0.88: 1.

Slide 1

A) Differences of macronutrients in the rations of control and experimental groups, g



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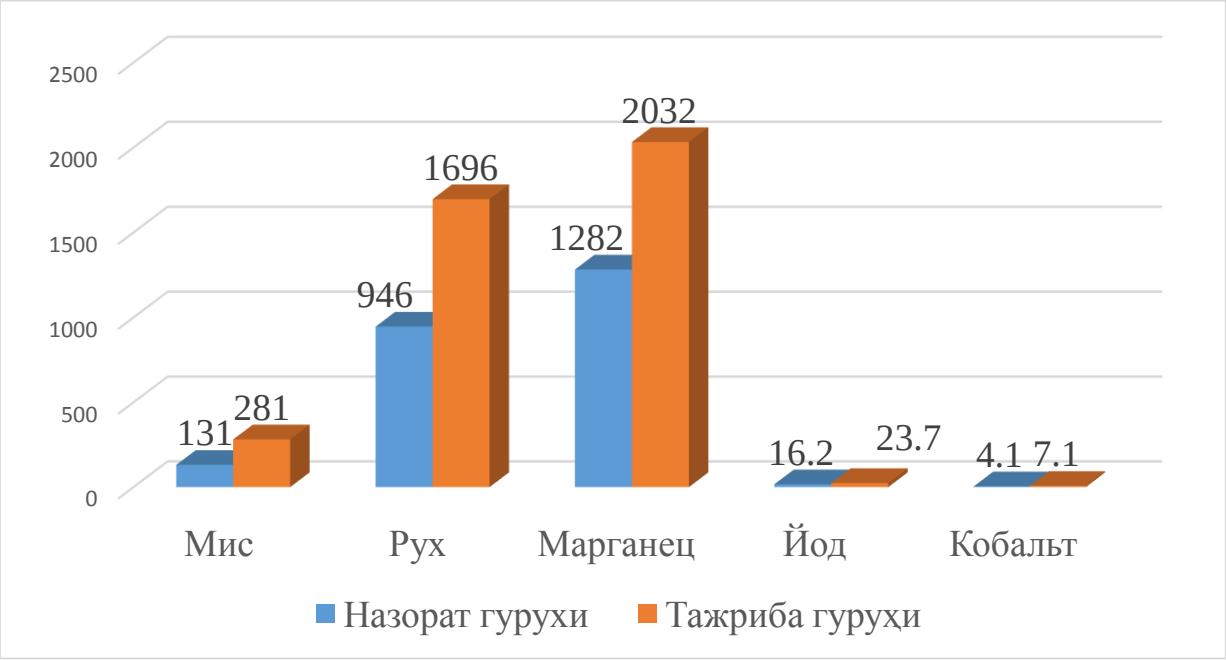
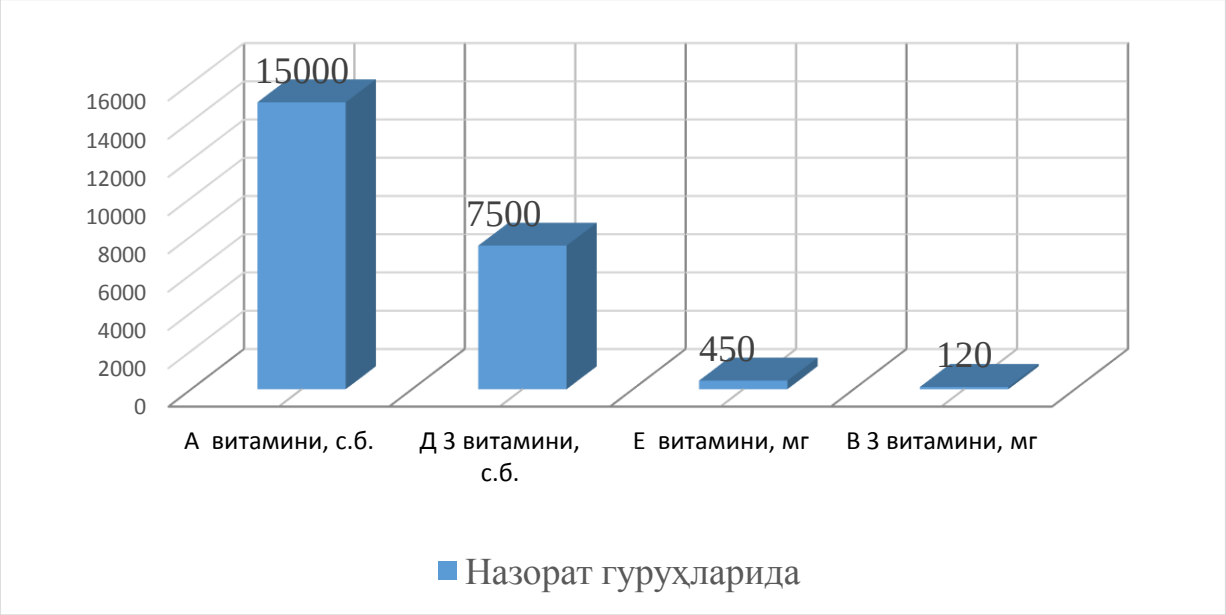
B) Differences of micronutrients in the rations of control and experimental groups, mg




C) The amount of vitamins taken in the diet in the experimental groups




During the experimental period, the milk yield characteristics of cows were important in assessing the effectiveness of cow use, with the amount of feed consumed per head of cow during the experiment and their nutritional value per feed unit, and the amount of feed consumed by groups in Table 2 below.

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Table 2 The amount of feed consumed during the experiment to the experimental cows was one percent

| Indicators | Unit of measurement | Control group | I-experimental group | II-experimental group |
|---|---|---|---|---|
| Senage | Kg | 6012 | 6012 | 6012 |
| Silos | Kg | 5010 | 5010 | 5010 |
| Somon | Kg | 1670 | 1593 | 1336 |
| Wheat bran | Kg | 3340 | 3340 | 3340 |
| Premix | kg | - | 27 | 27 |
| Salt | Kg | 33,4 | 33,4 | 33,4 |
| Total amount of feed consumed, feed one | Kg | 5664,64 | 5627,90 | 5597,84 |
| The amount of dry matter | Kg | 8199,70 | 8059,42 | 7919,14 |
| Exchangeable energy | Mj | 7473,80 | 7389,2 | 7304,5 |
| Crude protein | g | 1201226 | 1194713 | 1188200 |
| Digestible protein | g | 836002 | 834499 | 832996 |
| Raw fiber | g | 2082824 | 2017861 | 1953898 |
| Crude oil | g | 309284 | 307280 | 305276 |
| Starch | g | 112224 | 112224 | 112224 |
| Sugar | g | 305443 | 305025 | 304608 |
| Calcium | g | 82731 | 84000 | 83649 |
| Phosphorus | g | 41249 | 41942 | 41829 |
| Potassium | g | 123818 | 123679 | 123546 |
| Magnesium | g | 23613 | 24559 | 24426 |
| Sulfur | g | 17735 | 17518 | 17300 |
| Iron | mg | 1826312 | 1806773 | 1787234 |
| Mis | mg | 84636 | 111235 | 110834 |
| Rux | mg | 384634 | 516661 | 513688 |
| Manganese | mg | 639610 | 765258 | 755906 |
| Cobalt | mg | 1452 | 1920 | 1848 |
| Iodine | mg | 7654 | 8937 | 8870 |
| Carotene | mg | 352704 | 352370 | 352036 |
| Vitamin-D | ME | 1250830 | 2599095 | 2599160 |
| Vitamin E | mg | 450566 | 531566 | 531566 |

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As can be seen from Table 2 above, there was no significant difference in feed consumption between groups, but nutrients consumed per 1 kg of natural fat milk and 4% milk content were significant across groups.

In evaluating the effectiveness of use in dairy herds of cows, the characteristics of their feed coverage with milk are important. Table 3 shows the milk coverage of cows in the experimental groups.

Table 3

| Indicators | Unit of Measurement | Groups | | |
|---|---|---|---|---|
| | | control | I-experiment | II-experiment |
| Feed unit consumed per 1 head of cow during lactation | кг | 5664,64 | 5627,90 | 5597,84 |
| | % | 100 | 99.3 | 98.8 |
| The amount of milk produced | кг | 4946,44 | 5128,22 | 5297,34 |
| | % | 100 | 103.7 | 107.1 |
| The amount of natural fat | % | 3,99 | 4,08 | 4,12 |
| | % | 100 | 102.2 | 103.2 |
| 4% milk content | кг | 4934,07 | 5230,78 | 5456,26 |
| | % | 100 | 106.0 | 110.6 |
| The feed unit used to produce milk at 1 kg of natural fat | 0.б | 1,14 | 1,10 | 1,06 |
| | % | 100 | 90.9 | 92.8 |
| 1 kg is the feed unit used to produce 4% milk | кг | 1,15 | 1,08 | 1,03 |
| | % | 100 | 93.9 | 89.5 |

Table 3 shows that the use of a nutritional supplement in the diet of cows had a positive effect on its productivity, and many scientists believe that the level of their supply of vitamins and macro- and micronutrients in the diet of cows is inextricably linked with their milk yield.

The analysis showed that in cows of experimental group I, the feed unit used to produce 1 kg of natural fat milk was 0.04 kg less than in the control group, while in cows of experimental group II this figure was 0.08 kg less than in control and experimental groups. The difference in feed consumption costs between 7.2-9.1%.

For the production of 1 kg of 4% milk in the I-experimental groups was 1.08 kg, which is 0.07 kg less than in the control group, which is 1.03 kg in the II-experimental groups. thus, it was 0.12 kg lower than in the control group, and the difference between these feed consumption indices was 6.1–10.5%.

Milk productivity of cows and milk quality indicators.

Changes in the milk yield of cows and its quality indicators are carried out by conducting a control milking once every 10 days.

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At the same time, the amount of milk extracted from one cow per day was determined by means of counters installed on the milking machine "Archa-12" 3 times a day during milking. It can be seen in Table 4 below.

If we analyze the milk yield of cows during the experimental stages, we can see it in the table below.

Table 4 Milk yield of experimental cows by years, in groups

| № | Groups | The amount of milk actually milked, kg | The difference compared to the control group | |
|---|---|---|---|---|
| | | | milk, kg | % |
| 2018 year | | | | |
| 1. | Control | 4567,44±36,40 | - | 100% |
| 2. | I-experiment | 4725,90±31,77 | 158,46 | 103,47 |
| 3. | II-experiment | 4987,90±51,63 | 420,46 | 109,21 |
| 2019 year | | | | |
| 1. | Control | 4946,44±17,88 | - | 100% |
| 2. | I-experiment | 5128,22±26,53 | 181,76 | 103,67 |
| 3. | II-experiment | 5297,34±21,39 | 350,90 | 107,09 |
| 2020 year | | | | |
| 1. | Control | 3912,36±17,26 | - | 100% |
| 2. | I-experiment | 4024,19±19,46 | 111,83 | 102,85 |
| 3. | II-experiment | 4171,63±20,39 | 259,27 | 106,62 |

Table 4 above shows that when we analyzed the changes in milk productivity in groups over the years, it became clear that over the years, with all the conditions created, productivity decreased from year to year, with a decrease of 17.4% in the control group and 14.9% in the experimental group. In Experiment Group II, it was 14.4%. We conclude that these changes may be due to a decrease in the productivity of cows as they age and the effects of hot weather in Uzbekistan.

In order to study the quality of milk of experimental cows, during the control milking, once a month in groups of milk samples were taken using the equipment "Lactan 1-4m", the fat content of milk, protein content, skim milk and milk density and dry matter. The amount was studied during the experiment.

Fertility rates of experimental cows

It is important to study the changes in fertility rates in cattle breeding. The reason for this change may depend on the state of the conditions of keeping cattle, the full value of the feed ration, and other reasons.

We continued to control the cows in the control group based on the technology adopted on the farm, while the cows in the I and II experimental groups were moved to other places and kept in groups in

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the autumn and winter without ties in the indoor boxes and in the spring and summer on the awnings with pastures. that is, preservation was ensured. During the summer months, the open areas of the pastures were kept on a pedestal, and from time to time water was sprayed through sprayers to stabilize the air temperature on the pastures.

In addition, the feed rations of cows in experimental groups I and II were formulated as full-value, concentrate feeds in the ration were enriched with premixes in order to replenish the deficient vitamins and macro-micronutrients in the feed.

In addition, periodic monitoring of sexual orientation was performed 3 times a day in the breeding areas of infertile cows in the experimental groups. During this period, their sexual cycle and the times of exposure to the vitamins and hormonal drugs used were also taken into account.

Cows from the herd were separated and brought to special places for artificial insemination, where artificial insemination of cows is carried out according to the technique of the rectocervical method.

In order to increase the effectiveness of artificial insemination, the uterus and ovaries are massaged for 1-2 minutes 10-15 minutes before fertilization, and the clitoris of cows is massaged for 10-20 seconds after fertilization.

The results of the above measures can be seen in Table 5 below.

Table 5 Fertility indicators of experimental cows, by groups 2021 y.

| Indicators | Control group | I-experimental group | II-experimental group |
|---|---|---|---|
| Fertility at first fertilization,% | 66,1 | 76,5 | 79,2 |
| Total fertilized,% | 70,2 | 86,1 | 92,1 |
| Duration of service period, days | 118 | 95 | 82 |
| Escape index,% | 1,72 | 1,55 | 1,50 |
| Duration of pregnancy, days | 284 | 283 | 283 |

Table 5 found that cow fertilization was 15.9% higher in the I-experimental group than in the control group and 21.9% higher in the II-experimental group.

In terms of length of service, it was found that the number of cows in the first experimental group decreased by 23 days compared to the control group, and by 36 days in the second experimental group.

According to the escape index, the cows in the I-experimental group decreased by 0.17% compared to the control group, and in the II-experimental group by 0.22%.

In terms of duration of pregnancy, it was found to be normal without significant variation between groups.

From the above, it was found that when the keeping conditions of cows improved, feed rations were enriched with premixes, they were given vitamins and hormonal drugs, and other veterinary measures were taken, they had a positive effect on the fertility of cows.

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**Conclusion**

We can draw such conclusions from the above data.

- Care for cows that meet veterinary requirements the use of premixes in the creation and feeding of conditions, achieving their full value in the formation of rations increases their milk yield by 9-10%, milk quality by 12-13%, fertility rate by 20%, economic efficiency in dairy farming by 12-13%;
- Artificial insemination of cows taking into account the sexual cycle proper implementation has a positive effect on obtaining high and quality products and offspring from cattle;
- Care of cows during pregnancy and after birth, if feeding and zooveterinary measures are carried out in a timely manner, their service life is shortened, they are fertilized in a timely manner and fertility characteristics are improved.

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