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ETIOLOGY, DIAGNOSIS AND PROPHYLAXIS OF ALIMARTARY INFERTILITY IN PRODUCTIVE COWS

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Abstract
The article provides information on the causes, pathogenesis, and preventive measures of alimentary infertility in productive cows.

Keywords: Infertility, microelements, proteins, carbohydrates, vitamins and minerals, ovaries, hypocuprose, tocopherol, mation, anemia, sexual cycle, diet.

INTRODUCTION

Based on a number of decrees and resolutions of the President of our Republic, in order to achieve the rapid development of livestock farming in our Republic, increase the production of livestock products and improve their quality, great attention is paid to the import of highly productive animals from abroad. One of the distinctive features of these productive cows is the high incidence of obstetric and gynecological diseases in them, among which are alimentary infertility in productive cows, that is, as a result of improper feeding of animals or their insufficient feeding, or the lack of important components in the diet that affect the functioning of the reproductive system. Failure to obtain planned offspring from productive cows, a decrease in the milk yield of cows, non-reimbursement of costs for care and feeding, and the costs of repeatedly insemination and treatment of infertile animals cause great economic damage to the national economy. Often, it is necessary to prematurely remove fertile cows from the herd.

Literature review

Alimentary infertility-(Latin alimentum food)

According to B.M. Eshburiev (2019), alimentary infertility is caused by improper feeding of the animal. Improper feeding of animals, insufficient feeding (starvation), excessive feeding (obesity), or a lack of important components in the diet that affect the functioning of the reproductive system (proteins, carbohydrates, vitamins, minerals, etc.) can lead to infertility. For example, in

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hypovitaminosis A, changes are observed in the epithelium of the uterine mucosa, in hypovitaminosis B, the gonads undergo degenerative changes, and during acobaltosis, reproductive function is disrupted. [1;460]

According to B.M. Eshburiev (2019), the main cause of infertility due to incomplete nutrition is a lack or excess of proteins, vitamins, macro- and microelements in the animal diet, as well as the provision of poor-quality and spoiled food. A lack or excess of certain components of the diet (vitamins, proteins, carbohydrates, calcium, phosphorus, manganese, iodine, iron, cobalt, etc.) can cause infertility even when the animal is moderately or highly obese. For example, when carbohydrates are lacking in the diet, the alkaline reserve and sugar in the blood decrease, the amount of ketone bodies increases, alimentary toxemia and weakening of sexual functions are observed, when iodine is lacking in the diet, female animals are delayed in sexual maturation, irregular sexual cycle (often anovulatory), follicular cyst formation and infertility are observed, abortion, retained placenta, etc., and bulls are characterized by impotence and decreased sperm quality. [2]

According to A.V. Timakov (2018), alimentary infertility in productive cows. They develop due to a lack of iodine, copper, zinc and iron microelements, as well as vitamins A, D, E in their diet. The irregularity of the sexual cycle in them leads to impaired ovulation and low fertility.

According to K.N. Katend (1991) and V.V. Khramsov et al. (2007), alimentary infertility in cows is the most common type of infertility, which is caused by disorders of the metabolism of proteins, carbohydrates, fats, macro- and microelements in the diet and incorrect diet structure.

A.Sobirov. According to B.Olmasov (2018), forage containing vitamin E retains its activity even when boiled. Since tocopherols are resistant to acid, they are stored in silage for up to 4-6 months. Vitamin E also acts on the body as an antioxidant (oxidation-slowing) substance. This causes inflammation of the inner mucous membrane of the gastrointestinal tract, urinary tract, uterus, fallopian tubes, and seminal ducts in cows and the development of various internal non-communicable diseases. According to the authors, vitamin E is not synthesized naturally in the body of livestock. Therefore, vitamin E, i.e. tocopherols, is supplied through feed. Even the intestinal microflora cannot synthesize this vitamin. 80% of tocopherols that enter the blood from feed are absorbed into the blood. It is also worth noting that sheep's milk does not contain vitamin E. For this reason, lambs whose feed is low in vitamin E (in winter and early spring) have extremely low blood levels of tocopherol, and they develop muscular dystrophy and a slow stage of gonadal development. [3]

N.S.Parashenko (2008) concluded that alimentary infertility in cows is caused by alimentary hypocobaltosis. The content of these trace elements in the blood of cows was also characterized by a decrease in the level of these microelements below the physiological norm. According to the results of the tests, zinc in the blood was 36.11%, copper 55.4%, manganese -69.96%, cobalt - 7.06%. It was emphasized that of these microelements, cobalt had the lowest content.

According to N.S. Belozerseva (2019), the effect of vitamin A deficiency on animal fertility is usually accompanied by an excess of protein in the diet and degenerative changes in the gonads and disruption of the sexual cycle. Calciferol (vitamin D), affecting mineral metabolism, ensures that the amount of calcium and phosphorus in the blood is within the normal range. With its

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deficiency, oxidation-reduction reactions and sexual function are disrupted (ovarian atrophy and sclerosis). With a lack of vitamin E, the normal course of menstruation is disrupted.

Parenteral administration of protein preparations (blood serum, aminopeptide-2, metal iodine protein chelates, etc.) normalizes the reproductive function of animals and the level of protein in the blood against the background of adequate nutrition. Usually, grazing, exercise, exposure to the sun, and most importantly, the inclusion of vitamin-rich foods in the diet contribute to the rapid restoration of fertility. However, in a number of cases, after spring and winter malnutrition, despite good nutrition of animals, the sexual cycle is restored only after 4-6 months. [Voloskov, R.A. Fundamentals of combating infertility in large cattle / P.A. Voloskov. – M., 1960. - 260 p.]

In the studies of A.V. Makarova (2009), it was also found that in cows with infertility, there was a decrease in immunity, a decrease in lysozyme and bactericidal activity in blood serum, a decrease in albumin by 25.9%, globulins by 53.0%, glucose by 30.3%, cholesterol by 12.6%, carotene by -44.9%, vitamin A by 32.6% and vitamin E by 33.3%, an increase in the activity of the AIAT and AsAT enzymes by 49.0% and 59.4%, respectively, compared to healthy animals. Scientists have experimentally proven that alimentary infertility is accompanied by a violation of protein-carbohydrate metabolism in the animal body, a decrease in the amount of vitamins and carotene.

A balanced introduction of microelements into the diet has a positive effect on the reproductive ability of cows and

heifers, primarily on fertility, fetal development in the embryonic and postembryonic period, uterine involution processes, as well as on metabolism and optimal functioning of enzymes and hormones (Defrain J.M 2009).

According to Q.N.Norboev., S.B.Eshburiev (2017), for the prevention of vitamin-mineral metabolism disorders in productive cows, feeding enriched mixed feed in granules consisting of: 10% meal, 15% sunflower meal, 11% cotton meal, 30% wheat grain, 15% corn grain, 1.2% monocalcium phosphate, 1%table salt and 0.2% vitamin-mineral premixes to cows for 45 days before calving and for 45 days after calving normalizes their metabolism and clinical and hematological indicators, increases the number of infusoria in the large chorian fluid by 52.8 thousand/ml, increases milk yield by 3.1 l, and reduces the service period by 15-20 days.

According to the author, N.S. Parashenko, who witnessed that the addition of copper, cobalt, manganese, zinc, and iodine microelement salts to the cows' diet to prevent alimentary infertility led to an increase in the fertility index, improved reproductive function, and normalized hemoglobin, total calcium, inorganic phosphorus, carotene, and alkaline phosphatase activity in the blood. (2008).

Results

Scientists recommend that, in order to prevent alimentary infertility, animals should be injected intramuscularly with a dose of 5 ml of tetravit once a week, starting from 2 months before calving, and, along with proper feeding, balancing the sugar-protein ratio in the diet and creating the necessary sanitary and hygienic conditions, organize walks of up to 5 km for 5 hours on farms. I.Suslova (2013).

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When the diet lacks vitamins, their preparations are introduced into the diet. Vitamin preparations are injected intramuscularly into cows once every 3-5 days, a total of 5 times in the following amounts: vitamin A - 200 thousand IU, vitamin D - 5 thousand IU, vitamin E 10 mg.
Their complex preparations (trivit, tetravit, tetramag) can also be used at a rate of 5-10 ml per head (Sh.B.Ata-Kurbanov, B.M.Eshburiev (2009).

Conclusion

The analysis of the literature showed that the causes of alimentary-climatic infertility in cows are the type of feeding of dairy cows, the level of supply of biologically active substances, macro- and microelements, their maintenance conditions, the lack of regular grazing for ruminants, and unfavorable climatic conditions. Prevention of infertility involves improving animal nutrition, introducing foods rich in vitamins and minerals into the diet (alfalfa, harvested wheatgrass, oats, barley, red carrots, pumpkin, etc.), as well as vitamin preparations (trivit, tetravit and multivit+mineral, etc.). Ensuring the balance of proteins and carbohydrates, macro- and microelements in the diet at the norm
necessary.

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