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FACTORS AFFECTING THE REPRODUCTIVE FUNCTION OF RUSSIAN SIMMENTAL CATTLE

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***Abstract**: the reproductive function is the most important factor in the system of economic cattle breeding. Productivity problems in Simmental cows were identified when analyzing the results of the previous studies. The factors influencing the decrease in cow's reproductive capacity are shown. These factors are: differences in the animals' genetic type, reproductive and unproductive diseases of cows, increased milk productivity of cows, as well as stress caused by such environmental factors as hypoxia, adinamia, insolation, feeding mode.*

***Keyword:** Reproductive functions, fertility, genetic type, Simmental breed.*

The Simmental breed is one of the most common breeds in Russia due to its high growth rate compared to other breeds and lower feed consumption per unit of production. The Simmental breed occupies the second leading position in the number of farm animals. According to the Ministry of Agriculture of the Russian Federation (2006) it makes up 15.3% of the total number of Russian cattle, the average milk yield of all Simmental cows being 29.87 kg with 3.71% fat content.

According to statistics, the share of cases of non-infectious reproductive diseases is 85-90% in Ukrainian cattle breeding and 60-90% in Russia. The problem of high percentage of non-infectious reproductive diseases of Simmental breed in the Russian Federation reveals the necessity to develop a methodology for improving the productivity and reproductive indicators of Simmental cattle by conducting appropriate breeding and related activities. Limiting factors of cows' reproductive ability are violation of rules and modes of feeding and watering animals, non-compliance with optimal zoohygienic parameters of the microclimate in the premises, "everything is busy-empty", technological cycle, low level of staff qualification. As a result, 50-70% of reproductive problems occur in the postpartum period, which leads to an increase in the insemination index. It means that it is not possible to complete

insemination successfully during the optimal duration of the service period and it also results in delayed pregnancy of cows.

The decrease in reproductive function leads to a decrease in the output of calves and, as a result, negatively affects the dairy and meat productivity of cows, which causes great economic loss to cattle breeding.

Purpose of research. The purpose of this study is to analyze zoohygienic, technological, alimentary factors that reduce the reproductive ability of Simmental cows.

Materials and methods of research. The material for the article is based on the information from scientific papers being analyzed and on the basis of previous publications and data received by Russian researchers as well.

Results. In Russia, all types of Simmental cattle are mainly derived from crossbreeding of imported Simmental breeds with various local Russian breeds. The average value of the calving interval period does not correspond to the optimal one. However, the average length of the service period was increased, which affected the period of productive life and extended the calving interval period beyond the desired range.

It should be noted that at the time of the first insemination of Simmental cattle, there were a number of factors influencing the results: a significant agedifference, genotype differences, nutrition differences and other environmental factors. The average values of the insemination index werehigh in the Steppe, Ukrainian, Volga, and Siberian types, but rather low in other types. With effective control of postpartum cows, it is possible to reduce the duration of the service and calving interval period. It was also noted that high milk productivity of cows led to a negative effect on reproductive functions as a result of increased concentration of somatotropin and prolactin in the blood, lactation stimulants, as well as a decrease in the level of the hormone insulin, which is antagonistic to lactation and important for normal follicular development [5].

Other researchers note that reproductive problems of the Simmental cow often occur in lactating dairy cows and can dramatically affect reproductive efficiency in the herd [3, 5]. Some of the most common problems include twinning, dystocia, abortion, stillbirth, placenta retention, metritis, fluctuations in metabolic health, and metabolomics. These are various disorders that are similar in that they can all lead to a violation of reproductive function and a deviation of reproductive indicators from the ideal value. These "ideal values of reproductive indicators" were determined depending on annual receiving at least one calf from each cow. (Table).

Table

The ideal values of the reproductive performance of cows

Name of the indicator	Value of indicator
Age at first insemination (month)	18-21
Age of the first calving (month)	27-30
Insemination index	1,5
Duration of the service period (day)	> 60
Calving interval period (days)	365

The results of previous studies indicate that nutrition has a great influence on the reproductive function of the Simmental cow. The lack of a balanced nutrition system has led to the loss of the body weight and deterioration of the cow's condition, delays the onset of puberty, increases the postpartum interval before conception, prevents normal ovarian cycling by reducing the secretion of gonadotropins, increases infertility and reduces the frequency of conception [2]. In this regard, some researchers pointed out that the improvement of the reproductive function of Simmental cows is mainly related to providing the necessary conditions for keeping and ensuring a balanced nutrition of cows, improving insemination methods and introducing new methods of biotechnology. These improvements will increase the reproductive ability of cows, which in its turn will ensure maximum use of the genetic structure of cows [4, 1].

Conclusion. On the basis of the previous information we can conclude that the reproductive functions of Simmental cattle in Russia are unsatisfactory and the efforts should be made to improve them by improving the breeding systems of Simmental cattle, especially the management and nutrition ones.

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PROBLEMS OF WASTE MANAGEMENT IN RUSSIA FROM THE PERSPECTIVE OF INDUSTRIAL MICROBIOLOGY

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***Abstract:** We can define biotechnology as a process in which raw materials are converted into new products using microorganisms, which in this case are called*