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INDICATORS OF SPERM PRODUCTION OF BULLS-EMBRIOTRANSPLANTS

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Results of an estimation reproduction of ability 19 bulls-embryotransplantation and their analogues received by a method artificial insemination are stated. Is not revealed of a statistically authentic difference in the basic quantitative and qualitative parameters of spermproduction of the bull-sires of both groups.

Bull-sires, embryotransplantant, reproduction ability, sperm, fertilization ability

Embryo transfer technique is widely used in breeding cattle. Due to this biotechnological method of reproduction genofond of outstanding top-producer cows on dairy efficiency is used much wider. Every year specific weight of animals obtained by embryonic transplantation, especially of breeding bulls, increases considerably in the herds of USA and Canada associations. Taking into account the importance of this issue, profound studies to identify the physiological and biological features of bulls, obtained by embryo transfer method, is not highlighted enough in literature.

The aim was to determine the feasibility of using bulls obtained by transplanting embryos imported from the United States.

In the Main Selection Centre of Ukraine (Pereyaslav-Khmelnitsky) two groups of bulls-analogues were formed by breed, age and origin. The bulls (9 heads), obtained as a result of artificial insemination of highly productive cows with bull semen imported from the US, were selected in the control group. The bulls (10 heads)

obtained as a result of transplantation of imported from the United States embryos to black and white breed heifers, were included in the research group.

Indicators of spermoproduction (ejaculate volume, concentration and total number of male germ cells, mobility of germ cells in the native and thawed sperm, number of obtained semen doses) were studied in the first two (I period), four (II period), six (III period) and twelve (IV period) months of their reproductive using. Totally 2,775 ejaculates have been analyzed.

The studies found that the bulls of the control group began to be used at the age of 14.4, of the research group – at the age of 14.3 months. First ejaculates, suitable for freezing, were obtained from bulls at the age of 15.9 and 15.6 months respectively.

Analysis of the data shows the growth of quantitative and qualitative indicators of bull sperm productivity during the period of use in both groups.

During the first year of use growth of ejaculate volume in control group bulls was +32%, and in the research one – +31% compared with the first two months of use, the difference in rates was statistically inaccurate during all periods of research.

Concentration indexes of sperm cells in ejaculate also grew up in the bulls of both groups – in stud bulls, obtained by artificial insemination. This increase was +0,16 billion / ml, in embryo transplants – +0,19 with statistically significant difference. The increase of mobility index of germ cells in the native semen was +0.77 points in bulls of the control group, + 0.64 points ($p < 0,95$) in in bulls of the research group.

The total number of spermiums in the ejaculate was increased by 1.52 times during the first year of use compared with the first two months in the control group bulls and by 1.57 times in seed bulls of the research team. The difference in performance between the bulls groups was statistically unreliable.

The indicator of sperm motility in thawed semen was more stable. Through using periods the difference in the control group was +0.19 points, in the research – +0.08 points at $P < 0.95$.

A portion of culled ejaculates according to various indicators during the first year of use was decreased in both groups of bulls. In bulls of the control group this

indicator has decreased by 1.3 times, in the research group – by 1.4 times compared with the first two months of use.

The number of semen doses obtained from one ejaculate has grown during the first year compared with the first two months of use by 25% in bulls, obtained by artificial insemination, and by 26% – in bulls-embryo transplants at statistically significant differences between the groups of seed bulls.

In studying of fertilizing sperm ability 2804 cows were inseminated by the semen of control group bulls, 3250 cows – by the semen of research group bulls during the first year of their reproductive use. Cow fertilization from the first bull insemination obtained by artificial insemination was 58.3%, in bulls-embryo transplants – 57.0%. Statistically reliably difference between indicators of sperm fertilizing capacity in bulls of both groups has not been identified.

Thus bulls-embryo transplants do not concede their coevals for quantitative and qualitative indicators of sperm productivity. As practice shows obtaining of animals by embryos importing with subsequent engraftment in the uterus of native breeds contribute to an earlier (1-2 months) using and assessment of seed bulls compared with the transportation of animals from abroad.

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