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EMBRYO TRANSPLANT TECHNOLOGY IS BEING IMPLEMENTED

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Article history:		Abstract:
Received:	24th September 2023	The article describes the advantages of the biotechnological technique for embryo transfer and the results of the implementation of this technology for embryo transfer in the breeding farm of the republic.
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Cattle embryo transplantation is a biotechnological method in breeding that makes it possible to obtain a larger number of offspring (compared to traditional methods of reproduction) from genetically valuable parents

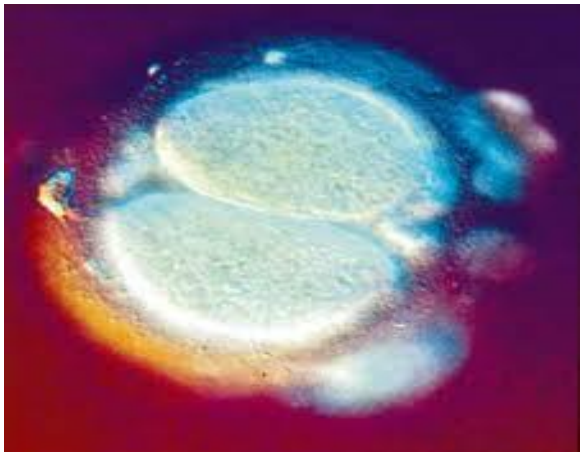
The embryotransplantation method contributes to:

- obtaining stud bulls and outstanding heifers from the best breeding animals in quantities greater than a cow can bring in a productive life;
- accelerating the selection process by reducing the intervals between generations;
- increasing the genetic diversity of bulls for one female, as well as creating families and herds of cows based on one ancestor;
- preimplantation diagnostics of embryos in order to identify unwanted recessive genes and chromosomal abnormalities;

The introduction of technology for embryo transplantation into breeding and commercial farms makes it possible to increase the efficiency of breeding and ensure the fastest possible qualitative change in herds.

The Research Institute of Animal Husbandry and Poultry Science of the Republic of Uzbekistan has been cooperating with the South Korean company KOPIA for 8 years.

Pic. 1 Embryos under a microscope.



Pic. 2 Embryonic blastomeres.

In September of this year. With the help of the South Korean center "KOPIA" and the company "FAS TRADE", embryos were imported from the USA for scientific research. The embryos were delivered in a special Dewar flask by plane.

Scientists from the Research Institute of Animal Husbandry and Poultry and specialists from the FAS TRADE company transplanted the embryos into recipient heifers on the farm named after. Kim Pen Hwa, Srednechirchik district, Tashkent region.

Embryos imported from the USA were used for transplantation at this farm. They are produced by the PEAK laboratory, part of the ALTA Genetics company. Embryos meet veterinary requirements approved in the Republic of Uzbekistan. The embryos are 7 days old. Stage of development: early and late blastocyst. All of them are of excellent quality.

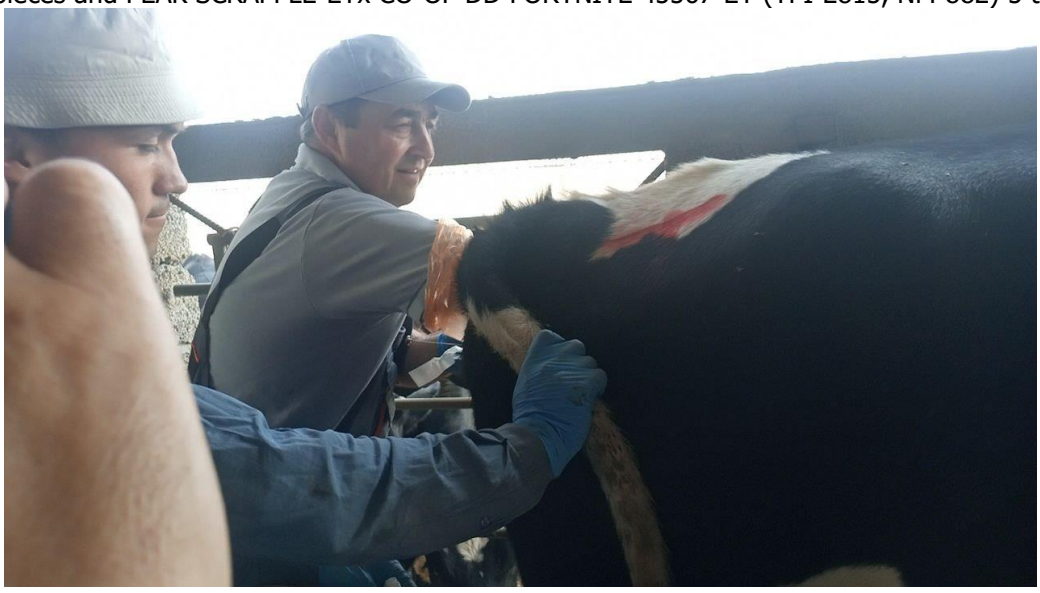
In this farm, heifers of breeding age of the Holstein breed and crosses of the Aberdeen-Angus breed were used as recipients.

To synchronize the heat, a scheme was used using the Prid Delta intravaginal implant. In parallel with it, the animals were injected with PGF2α (enzaprost). 17 animals took part in the synchronization program. 15 of them showed signs of hunting. 12 recipient heifers were selected for transplantation and 12 embryos were transferred.

On the 7th day after the hunt, the animals were checked for the presence of the corpus luteum and its location. Of all the prepared animals, 12 animals were selected for transplantation. After this, sacral epidural anesthesia was performed using a 2% novocaine solution.

Pic. 3 Preparation for embryo transfer.

For transplantation, two combinations of parental pairs were used: PEAK SCRAPPLE-ETx PEAK 45797-ET (TPI-2795, NM-899) 7 pieces and PEAK SCRAPPLE-ETx CO-OP DD FORTNITE 45567-ET (TPI-2815, NM-882) 5 things.



Pic.4 The process of transplanting embryos into recipient heifers.

Thawing of embryos was carried out according to the protocols provided in the accompanying documents. The transplant was carried out with special instruments designed for this procedure.

On the 40th day of the sexual cycle, pregnancy was diagnosed using ultrasound. Based on the results, pregnancy was established in 4 recipients. The efficiency was 33.3%. At the same time, for the second combination of parents it was 60%.

CONCLUSIONS. Based on the transplant results, we can conclude that different combinations of parents have different effectiveness. But, since a small number of embryos were used for transfer, it is difficult to judge the level of effectiveness of embryo transfer.

To obtain more accurate results and greater efficiency in breeding work, it is necessary to increase the number of transplants and the diversity of parental pairs. As donor cows, use pedigree cattle, which are imported into the country in large quantities, as well as cows of local breeds.

LITERATURES

1. "Методические рекомендации по порядку и условиям метода трансплантации эмбрионов крупного рогатого скота" М.2020 г.
2. Завертяев Б.П. "Биотехнология в воспроизводстве и селекции крупного рогатого скота" Л. "Агропромиздат", 1999 г.