

Does the way of retrieving embryos from donor cow affect embryo yield?

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Introduction The aim was to assess the influence of embryo retrieval ways from superovulated donor cows on embryo yield.

The study was carried out on beef cattle of the Hereford breed (n=120) in Bryansk region of the Russian Federation.

Methods To induce estrus, the cows were injected intramuscularly with prostaglandin F2 α (Enzaprost T, CEVA, France) at a dose of 5 ml per animal.

The superovulation was induced with Pluset (Laboratorios Calier, S.A., Spain) intramuscularly at a dose of 1000 IU per animal on the 9th-12th day of the induced estrous cycle every 12 hours with decreasing doses (3, 3, 2.5, 2.5, 2, 2, 1.5, 1.5 ml) and on the 12th day the estrus was induced with prostaglandin F2 α (Enzaprost T, CEVA, France).

Donor cows were inseminated 3 times with an interval of 12 hours using 5 sperm doses (2, 2, 1).

Embryos were flushed non-surgically on the 7th day after the first insemination, previously counting the corpus luteums (CL) per rectum by palpation/ultrasound scanning.

87 donor cows (72.5%) of all treated animals responded positively, i.e. had 3 or more CL's.

They were selected for the uterine flushing and were divided into 4 groups, the embryos were removed:



in group **I** (n = 22) by gravity using Y-shaped hoses with clamps



in group **II** (n = 22) by injecting (Luer syringe)



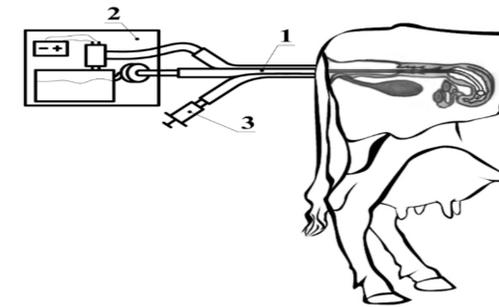
in group **III** (n = 21) by a combined way using Y-shaped hoses with clamps and a Luer syringe



in group **IV** (n = 22) by an electric pump method

All groups used: two-channel catheters for non-surgical embryo retrieval (Minitube, Germany), Em Safe filters for collecting embryos (Minitube, Germany), flushing fluid DPBS (Ltd Pan Eco, Russia).

Electric pump methodis based on the operation of a design with an electric pump



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Results The highest recovery rate was obtained in group IV. In average, the number of the CL per animal in group IV was 10.2 ± 0.538 and 9.2 ± 0.502 embryos were extracted (90.2%).

The number of CL's and the number and percentage of embryos recovered, respectively, were:

in group III - 10.1 ± 0.618 and $7,6 \pm 0.512$ (75.0%),

in group I - 9.9 ± 0.524 and 6.8 ± 0.411 (68.4%),

in group II - 9.7 ± 0.594 and 6.4 ± 0.52 (66.2%).

There were no significant differences between the groups in the number of CL.

Conclusions

The proportion of embryos/CL's in group IV significantly ($P < 0.001$) exceeded those in group I by 21.8 %-points, by 24.0 %-points in group II, and by 15.2 %-points in group III.

Efficiency of retrieving of embryos from the uterus of a donor depends on the way of non-surgical retrieving used.

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