

## SUMMARY

The aim of the study is to investigate possibilities of OPU technique for increasing number of embryo production from cattle breeding.

Eight Holstein Freisian heifers that have been never artificial inseminated, between 9-12 months aged and housed in Lalahan Central Livestock Research Institute were used for oocytes donors. OPU sessions were applied once a week regularly for each donor. The study was divided into two periods. A refreshment season was put between each period for animal resting physiologically. Each donor joint eight sessions per periods then 16 sessions was done totally during this study. Tissue Culture Medium-199 (TCM-199) was used for *in vitro* maturation of oocytes. Direct washing method with Brackett and Oliphant Medium (BO) was used for *in vitro* fertilization process. Amino acids added Charles Rosencrans medium were used as *in vitro* culture. 5 % CO<sub>2</sub>, over 95 % of humidity and 38.5°C environmental condition was used in the incubator for oocyte maturation, fertilization, and also embryo culture.

Total 122 OPU sessions were realized during this study then 565 follicles at first period and 264 follicles at second period were punctured. 829 follicles were aspirated in two periods totally. After the study 228 oocytes were taken from donors. Average of aspirated oocytes were  $1.9 \pm 0.20$  per OPU session. The A, B, C quality oocytes were put together in *in vitro* culture process after qualification according to cumulus oocytes complex. Average of cleavage rate was  $0.3 \pm 0.09$ , 48 hours after fertilization. Seven embryos were reached blastocysts stage during the study. There have been statistically differentiations between two

periods for number of follicle and each heifer. Each period was statistically different for aspirated oocytes also.

As a result, the number of embryos and oocytes were low level because the average number of punctured follicles was limited for each heifer. But it is the author's belief that OPU technique can be used to provide oocytes from live donor cows. Proper donors should be selected for OPU sessions and protocols that are known to be the best should be applied for IVP procedures.