

Thesis Title Embryo Transfer Technique for
Improvement of Cattle Productivity

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Degree Master of Science (Anatomy)

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ABSTRACT

To investigate the pregnancy rates and calve offspring in an embryo transfer program of bovine embryos produced in vitro, we have accomplished the procedures to mature oocytes (in TCM-199 medium) and fertilize in vitro with heparin-treated sperm (in TALP-glucose free medium). The oviductal epithelial cells were co-cultured in vitro (in TCM-199 + 10% HTFCS) and were capable of supporting normal growth of embryos to the stages at which non-surgical embryo transfer could be performed (compact morula, early blastocyst and blastocyst). The pregnancy rate following non-surgical of the same stage of two excellent embryos to the native recipient cow was higher in early blastocyst (75%) than compact morula (55%) and blastocyst (30%) stages and the total rate of pregnancy was 55%. The twin pregnancy rate was 28%. A total of 21 live calves were born from 17 recipients and mean birth weight was 21.2 kg. All the calves were healthy.

The results of the present study indicated that satisfactory pregnancy can be obtained when excellent embryos produced in vitro are transferred to -1 day asynchronous native recipient cows and the early blastocysts were the best for transfer.