

## Embryo transfer as a mean of increasing pregnancy rates in repeat-breeder cows



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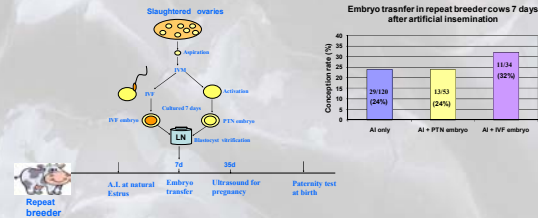
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### Introduction

In recent years, there has been a decline in the fertility of lactating cows around the world (especially for those with high-genetic merit for milk production) and there has been an increase in the number of services per conception (Repeat breeder).

### Materials and Methods

We transferred either in vitro fertilized (IVF) embryos or parthenogenic embryos (PTN) and evaluated the cows 35 days after artificial insemination (AI). Only repeat-breeder (RB) (between 3 and 6 previous AI) were chosen for this study. Holstein cows (207) from the same farm were selected for the experiment between April to June 2008 and March to May 2009. Slaughter house ovaries were collected during the winter of the same year, the ovaries were brought to the laboratory and oocytes were aspirated and in-vitro matured for 24h. IVF was done with sperm from the same bull and chemical activation was done with Ionomycin and 6-DMAP. Fertilized embryos and PTN embryos were cultured for 1 week until they reached the blastocyst stage. Day 7 embryos were vitrified using ethylene glycol and trehalose based solution and vitrified using the VitMaster (IMT Israel) at LN slush. The cryopreserved embryos were warmed prior to embryo transfer (ET) on location at the dairy farm one week after natural heat and AI was performed. After palpation, two PTN embryos or one IVF embryo were transferred to the ipsilateral of the ovulation side. The presence of pregnancy was confirmed using ultrasound 35 days after AI.



### Results

The conception rate (CR) for the group with AI only (control) and for the group of AI + PTN embryos was the 24%. The cows that received IVF embryo after AI had a CR of 32%.

### Conclusion

No differences were found between the two control groups (AI only and AI + PTN embryos) both reach a 24% of CR, which means that the PTN embryos have no effect on CR. The CR of vitrified IVF embryos was increased by 8% over the control groups. Paternity test (DNA examination) of the seven calves (4 pregnancies are still ongoing) that was born, shows that they all belong to the AI and not to the IVF embryos.

We conclude that ET following AI can improve the CR of repeat-breeder cows.