

EVALUATING EMBRYO FREEZING METHOD AND THE SITE OF EMBRYO DEPOSITION ON PREGNANCY RATE IN BOVINE EMBRYO TRANSFER

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Direct transfer of embryos frozen in ethylene glycol could lead to the increased practice of embryo transfer (ET) by an owner/herdsman. Two experiments were conducted to assess the potential of direct transfer with a specific effort to determine the importance of the “depth” of embryo placement in the uterus on pregnancy rate. In Exp. I 965 Grade 1 or 2 embryos were thawed for direct transfer after using ethylene glycol as a cryoprotectant or were thawed and rehydrated after being frozen in 10% glycerol. The embryos were frozen by 13 different ET companies, but were transferred to synchronous recipients by a single practitioner. The pregnancy rate was not different (Chi-square; $P > .05$) following transfer of embryos frozen in ethylene glycol (59.6%; 465/780) or glycerol (56.8%; 105/185). In Exp. II 68 Grade 1 or 2 embryos frozen in ethylene glycol were transferred directly to synchronous recipients by one practitioner. Recipients were randomly assigned to receive an embryo placed in the uterine horn ipsilateral to the corpus luteum at a point adjacent to the external bifurcation of the uterine horns (shallow) or at a point more than two-thirds of the distance from the external bifurcation toward the oviductal end of the uterine horn (deep). Placement deep in the uterine horn required manual manipulation to temporarily “straighten” the uterine horn from its coiled position typical of diestrus. Pregnancy rate was greater ($P < .01$) when embryos were placed deep in the uterine horn (see Table), regardless of whether embryos were placed in the left (+42.5%) or right horn (+33.3%) and regardless of embryo quality.

Pregnancy rate following direct transfer of bovine embryos at two locations in the uterus

Embryo Placement	Embryo Quality		
	Grade 1	Grade 2	Total
Deep	72.2% (13/18)	60.9% (14/23)	65.9% (27/41) ^a
Shallow	25.0% (3/12)	33.3% (5/15)	29.6% (8/27) ^b

a,b means in same column with different superscripts are different, $P < .01$

Pregnancy rate following direct transfer of embryos frozen in ethylene glycol was similar to that following transfer of embryos frozen in glycerol, however, the placement of embryos deep in the uterine horn significantly increased pregnancy rate. If on-farm ET is to be performed by an owner/herdsman, adequate training will need to be conducted to insure that the person is skilled enough to place direct-transfer embryos deep in the uterine horn ipsilateral to the corpus luteum.

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