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Transfer of two demi embryos increases pregnancy rate but not the birth rate

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This study aimed to compare the viability of bovine demi-embryos inovulated alone or in pars versus intact embryos. Twenty five Simmental and Aberdeen Angus cows were used as embryo donors, and 153 crossbred heifers were used as recipients. Donors were superovulated by conventional protocol with eight decresasing doses of FSH; and the embryos were collected by nonsurgical technique. Only excellent embryos morphologically (G1) classified as morulae, early blastocyst and blastocyst stage, were split. Seventy eight embryos were submitted to bisection by using a micro surgical blade, and 52 were kept intact. Embryos were transferred into the recipients in three treatments: T1 (intact embryos; n = 52 recipients); T2 (1 demi-embryo/receptora; n = 54 recipients); T3 (2 demi-embryos; n = 51 recipients). Recipients were synchronized by a single injection of sodic cloprostenol. Embryos and demi-embryos were non-surgically inovulated 6 to 8 days after estrus in the uterine horn ipsilateral to the corpus luteum. Pregnancy diagnosis were done at 30 and 60 days of gestation. The means of gestation rate were compared by $\chi 2$. An economic analysis was performed considering the costs of the: recipients, the embryo production and transfer (i.e., hormones, disposables materials, handling media, semen, and the hand-to-work). The inovulated cows pregnancy rate did not differ among treatments ($P>0.05$) at 30 (55.8; 47.1 and 62.0%) and 60 days (51.9; 37.3 and 54.0% for T1; T2 and T3, respectively). Pregnancy rate per original embryo was greater in T2 (88.9%) than T1 (55.8%) and T3 cows (60.8%) ($P < 0.05$) at 30 days, however, there were no differences ($P > 0.05$) among treatments at 60 days (51.9; 70.4 and 52.9 for T1; T2 and T3 cows, respectively). The percentage range of twin pregnancies was 0 – 0%; 1 – 5.3% and 10 – 37.0% for T1; T2 and T3, respectively. The means percentage of live born calf by inovulated recipient did not differ (48.1; 31.4 and 34.0% for T1; T2 and T3, respectively). The percentage of live born calf using one original embryo was better ($P > 0.05$) in T2 (59.2%) than T3 cows (33.3%). The abortion rate was higher in T3 cows ($P < 0.05$). The mean cost of calf born alive was U$287.3; 262.5 and 385.4 for T1, T2 and T3 cows, respectively. It is concluded that bisection and transfer of one demi-embryo do not reduce costs of calf born alive. Transfer of two demi-embryos into the same recipient did not improve pregnancy rate.

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