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Izlaganje sa znanstvenog skupa

Conference paper

VITRIFICATION OF GOAT EMBRYOS

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Embryo cryopreservation is nowadays routinely used in embrio transfer methods in principal categories of farm animals. Survival rate of embryos cultivated in vitro and those transferred into recipients is satisfactory excluding porcine embryos - Massip et al. (1986), Niemann (1991), Říha (1990, 1993, unpublished results). Success of cryopreservation procedures in mammalian embryos is attached with results and findings of general cryobiology studies. In practice, characteristic slow procedures are often substituted with simple and inexpensive vitrification methods - Niemann (1991).

Yuswiati and Holtz (1992) published results of a vitrification procedure in goat embryos; success rate was, however, relatively lowtwo live kids, 18 transferred embryos, 9 recipients.

Material and methods

6 day-embryos of Saan and Mohair goats were vitrified. Embryos were recovered by means of endoscopy. Embryos characterized with satisfactory morphological structure were vitrified according to procedure described by Říha et al. (1991), Říha (1990, 1993) - 10 % glycerol in cultivation medium - or by a standard procedure utilizing the freezer (Planer R-204) and specified in 2nd edition of Manual of the International Embryo Transfer (1990).

Results

Results of superovulation and laparoscopic recovery of Mohair and white Saan embryos are presented in tabl. 1. Superovulation response of Mohair goats was nearly double as compared to response of white (dairy) goats in case of the same treatment regimen. Difference in transferrable embryo rate amounted to 2.6 (7.1 vs. 4.5 embryos). In vitro cultivation (M 199 medium + 10 % FCS and 5 % goat inactivated serum) was applied in 15 vitrified embryos. 48 h-cultivation was successful in 71.4 %; 6 h- and 24 h-cultivation were successful in 85.7 %. Post-thawing rate of intact embryos amounted to 93.3 %. Pregnancy rates of recipients are mentioned in tabl. 3. Transfers of fresh and vitrified freezed by routine method (Planer R-204). Pregnancy rates are lower than

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those found in Cashmere embryos imported from Scotland, preserved in 1.5 M ethylenglycol in PBS by the routine procedure (0.3 °C/min up to -35 °C) - Říha et al., 1994).

Tabl. 1. - RESULTS OF SUPEROVULATION AND LAPAROSCOPIC RECOVERY OF EMBRYOS (FSH IN TWO DAILY DOSES FOR DAYS)

Item n = 25	Ist group,Mohair goats			IInd group,dairy goats treated n=18 recovered n=13
	Ovary/horn		Total	
	left	right		
CL response				
- total	124	124	248	72
- $\bar{x}$ (mean)	5,0	5,0	9,9	5,6
Recovered embryos				
- total	115	103	218	52
- $\bar{x}$ (mean)	4,6	4,1	8,7	4,0
- rate of CL (%)	92,7	83,1	87,9	73,2
Vitrified embryos (adequate quality)				
- total	96	82	178	47
- $\bar{x}$ (mean)	3,8	3,3	7,1	4,5

Tabl. 2. - IN VITRO DEVELOPMENT OF VITRIFIED GOAT EMBRYOS

Item	n	%
Thawed embryos	15	
Morphological structure of thawed embryos		
- intact embryos	14	83,3
- degenerated embryos	1	6,7
In vitro development - after 6 hod	12	85,7
- after 24 hod	12	85,7
- after 48 hod	10	71,4

Tabl. 3. - PREGMANCY RATE IN RECIPIENTS OF PRESERVED AND FRESH EMBRYOS

Item	Realized ET n	Transferred embryos n	Pregnant recipients		P
			n	%	
Vitrified embryos	5	10	3	60,0a	P,05
Embryos preserved by routine freezing procedure (10 °C,0.3 °C/min up to -35 °C)	18	36	4	22,2b	
Fresh embryos	12	24	8	66,7a	
Imported Cashmere embryos:					
transferred - in season	34	51	27	79,4a	
- out of season	16	34	8	50,0b	
- total	50	85	35	70,0a	
(Ríha et al.1994)					

Differences, a,b, are significant (P<0,05)

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