Lambing results obtained with imported Ile de France ram semen

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Two batches of Ile de France ram semen frozen in 0,5 ml straws were imported from France during April 1979 and September 1981. Ewes were synchronized and artificial insemination was carried out either 54,5 h (fixed time single insemination) after sponge withdrawal, or with a double insemination, 12 h after the onset of oestrus as identified by teaser rams followed by a second insemination 12 h later (December 1982). Acceptable lambing percentages of 62,5 and 54,2% for the two batches were obtained for the first of a series of inseminations after arrival, but a significant ($P < 0,01$) decline in lambing percentages (25,0 and 27,5% respectively) was obtained after 15 – 20 months storage at – 196°C. There was no significant difference in the fertility obtained for a single or double insemination.

Twee lotte bevrore Ile de France-ramsemen in 0,5 ml strootjies is gedurende April 1979 en September 1981 vanaf Frankryk ingevoer. Ooie is gesinkroniseer en inseminasies uitgevoer 54,5 h (enkelinseminasie) na sponsonttrekking of 'n dubbelinseminasie, 12 h na aanvang van estrus en weer 12 h later, op ooie wat geïdentifiseer is met behulp van koggelramme. Aanvaarbare bevrugtingspersentasies van 62,5 en 54,2% is verkry met die eerste van 'n reeks inseminasies na ontvangs, maar 'n betekenisvolle ($P < 0,01$) afname in bevrugting (25,0 en 27,5% respektiewelik) is verkry na berging by – 196°C vir 15 – 20 maande. Geen betekenisvolle verskil is tussen 'n enkel- of dubbelinseminasie verkry nie.

The genetic contribution of a single proven ram can be drastically improved by the use of artificial insemination with fresh semen, compared to the contribution of a single ram when natural mating in a flock system is used (Greyling & Grobbelaar, 1982). By using frozen semen, the genetic contribution of a single proven ram can be even greater. To date one of the major drawbacks of frozen ram semen world-wide, has been the variable conception rates achieved (ewes lambing/ewes inseminated). Thus rates of 73,5% (Colas, 1975), 54,9% (Salamon, 1971), 39,6% (Visser & Salamon, 1973), and 3,7% (Smith, Boys, Drost, & Willson, 1975) have been recorded. However, in France frozen semen from Ile de France rams

Table 1 Conception rate obtained using two batches of frozen Ile de France ram semen

	Date of insemination						
	1st batch			2nd batch			
Item	April 1979	Jan 1980	Dec 1980	Sept 1981	April 1982	[a]Dec 1982	Total
Storage time (months)	1	9	20	1	7	15	
Ewes inseminated (*n*)	16	28	8	48	77	40	217
Ewes lambed (*n*)	10	12	2	26	26	11	87
Conception rate (%)	62,5	42,9	25,0	54,2	33,8	27,5	40,1
Lambs born (*n*)	18	19	3	35	27	13	115
Lambing rate (%)	112,5	76,9	37,5	37,5	35,1	32,5	59,7
Fecundity (lambs/ewe)	1,8	1,5	1,5	1,3	1,0	1,2	1,4

[a]Double insemination 12 h apart.

is used with a great deal of success (Barillet, 1975).

Ile de France stud ewes in a normal breeding status (three lambings in a 2-year programme, prior to the insemination) were used. All ewes were synchronized using intravaginal progesterone sponges (Repromap 60 mg Upjohn) inserted for 14 days. Pregnant mare serum gonadotrophin (Fostim, 300 IU Upjohn) was administrated im at the time of sponge withdrawal. Two insemination procedures were employed. Either one insemination comprising two straws (0,3 ml each) at 54,5 h following sponge withdrawal or insemination with a single straw 12 h after the onset of oestrus, (identified by teaser rams) followed by a second insemination with two straws 12 h later (December 1982).

The semen was used within 3 weeks after freezing for the first inseminations. Each straw of semen was thawed at 38°C for 30 sec in a water bath, checked for motility and mortality under a light microscope and transferred into an insemination pipette for immediate insemination. The semen was deposited in the mouth of the cervix following standard AI practice. All inseminations was performed by the same inseminator. Difference between frequencies were tested by the chi-square method.

No visible difference in motility and mortality were noted under light microscopy between the semen samples at any stage. The conception rate obtained for the two batches of frozen semen used at various times are shown in Table 1. Acceptable conception rates of 62,5 and 54,2% for the two batches of frozen ram semen were obtained for the first inseminations upon receipt of the semen from France. However, a significant ($P < 0,01$) decline in conception rate (25,0 and 27,5% respectively) was obtained with the same batch of semen (stored in liquid nitrogen at -196°C) 15 – 20 months later. The rate of decline for the two batches of semen were similar at 1,8% conception per month. This decline is contrary to the observations of Salamon & Visser (1974) in which no decline in conception rate (54,4 vs 52,9%) was obtained with ram semen frozen in pellets for 5 years. From the results obtained for the two insemination regimes (single insemination 54,5 h after sponge withdrawal versus a double insemination 12 and 24 h after detection of oestrus with teaser rams) it would apear that there is no difference in the success rate of the two insemination methods used during December 1980 and December 1982. This finding is in agreement with the results obtained by Tervit, Smith, Goold & Drost (1978).

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