

A COMPARISON OF INSEMINATION TECHNIQUES IN CORRIEDALE EWES

D.J. KERTON*, S.R. McPHEE*, I.F. DAVIS*
M.B. WHITE*, J.C. BANFIELD*, and L.P. CAHILL*

Killeen et al. (1982) have reported that satisfactory levels of fertility (69%) can be obtained following intra-uterine insemination of ewes with the aid of a laparoscope using fresh or frozen-thawed semen. Some large scale sheep A.I. programs have suggested that acceptable levels of fertility (40-50%) can be obtained following vaginal rather than cervical insemination of ewes. The aim of this study was to compare fertility following insemination by cervical, vaginal or uterine techniques.

In March 1983, a flock of 301 mature Corriedale ewes on a commercial property were treated with intravaginal progestagen sponges (Repromap) for 12 days and injected with 300 i.u. of Pregnant Mare Serum Gonadotrophin (Pregnenol) at sponge removal. The ewes were then allocated to one of three groups and all inseminated at 48-54h after sponge removal with fresh ram semen collected by electro-ejaculation and diluted 1:3 with (U.H.T.) skim milk. Three methods of insemination were used. Cervical insemination (CAI) was performed with the aid of a speculum and headlight and 0.15 ml of semen deposited just inside the external cervical opening (n = 100). Uterine insemination (UAI) was performed according to the method of Killeen and Caffery (1982). With the aid of a laparoscope, 0.05 ml of semen was deposited into each uterine horn (n = 99). Vaginal insemination (S.I.D.) was performed by inserting an insemination pipette deep into the vagina and depositing 0.15 ml of semen as close as possible to the external cervical opening (n = 102).

Six days after insemination, harnessed entire rams were placed with the ewes which were grazed in common. Crayon colour was changed three times at approximately 17 day intervals and returns to service recorded. Ewes which did not return to service over the period of these three oestrous cycles which were in mid breeding season were regarded as having conceived to the AI treatments. Non-return rate data were analysed by Chi-square.

Conception rate for the S.I.D. method was lower ($P < 0.01$) than for the other two methods which were not different to each other. Conception rates to C.A.I., U.A.I. and S.I.D. were 56, 53 and 31% respectively. In a group of similar ewes which were untreated and joined with rams, the conception rate was 20% in the first 17 days and 74% after 34 days.

Although the S.I.D. method allowed a much faster throughput of sheep than the C.A.I. method, fewer ewes became pregnant probably due to a lower fertilization rate. The conception rates to C.A.I. and U.A.I. were satisfactory considering there was only one 'blanket' insemination with semen obtained by electro-ejaculation. The U.A.I. method used much less semen per ewe than the other methods. Previous work (Killeen and Caffery 1982; our own unpublished data) have shown U.A.I. has resulted in conception rates of 70% or better with fresh semen which is better than the present study. However, the real value of U.A.I. needs to be assessed with frozen-thawed semen.

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* Animal Research Institute, Department of Agriculture, Werribee, Victoria. 3030.