

EFFECT OF TIME OF ADMINISTRATION OF MONOCLONAL ANTI-PMSG ON SUPEROVULATORY
RESPONSE AND EMBRYO QUALITY IN CATTLE

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The aim of this study was to examine the effect of a monoclonal antibody to pregnant mare serum gonadotropin (PMSG) (Neutra-PMSG; Intervet UK) on embryo yield and quality when used in parous beef x dairy (suckler) cows. Seventy-two Hereford x British Friesian cows were assigned at random to one of four treatment groups. Estrus was synchronized using two injections of prostaglandin (PG) as 2 ml Prostaglandin (Intervet UK) given 11 days apart. Animals were superovulated with 2500 iu PMSG (Polligon; Intervet UK) im on day 10 of their estrous cycle and given 2 ml PG im 48 h later. Cows were inseminated twice with two straws of semen 12 and 24 h after the onset of estrus. In addition, cows received 5 ml of the monoclonal antibody via the jugular vein 36, 48 and 60 h after the PG injection in Groups II, III and IV, respectively. Controls (Group I) were given the same quantity of placebo (anti-PMSG vehicle) and six cows were so treated at each time of administration. Embryos were collected nonsurgically on day 6 to 8 of the cycle and numbers of corpora lutea (CL) and cystic follicles (CF) for each cow were counted by palpation. Plasma estradiol (E_2) levels were measured by radioimmunoassay. Data were analyzed by ANOVA and means were compared by LSD. Circulating E_2 in superovulated cows always showed a peak value 24 or 48 h after administration of PG. In the control cows E_2 did not return to basal levels after the peak but showed a second increase after estrus, then decreased slowly to basal levels. In all cows treated with anti-PMSG, however, E_2 declined to basal levels within 24 h after treatment and remained low until flushing. The anti-PMSG treatment at 48 and 60 h after PG injection also reduced ($P < 0.05$) CF numbers compared to those of the control group. Anti-PMSG given at 36, 48 or 60 h after PG injection, however, did not significantly affect the ovulation rate, the total number of ova/embryos collected or the number of usable embryos (Table).

Table. Superovulatory response in cows treated with PMSG and anti-PMSG at different times after PG.

Group	Treatment	N	CL	CF	ova/embryos	
					Total	Usable
I	Control	18	13.2	1.8	10.8	7.9
II	PG+36 h	18	9.8	1.2	8.5	7.8
III	PG+48 h	18	9.2	0.2	7.5	4.0
IV	PG+60 h	18	9.7	0.4	8.4	8.0
Level of significance			N.S.	0.05	N.S.	N.S.

In conclusion, these data indicate that anti-PMSG treatment, despite reducing CF numbers and post-estrous rises in E_2 , had no significant effect on the number of usable embryos recovered.