OVULATION BLOCK WITH STILBOESTROL IN THE COW

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On theoretical grounds, one might expect to find a good deal of variation between cows in amounts of progesterone and oestrogen secreted by the ovary during the follicular phase of the oestrous cycle. Thus, there is variation in the rate of regression of corpora lutea (CL) in terms of size and progesterone content (Mares, Zimbelman & Casida, 1962; Niswender, Kaltenbach, Shumway, Wiltbank & Zimmerman, 1965), and limited data suggest that content is correlated with amounts of progesterone secreted into the ovarian vein (Gomes & Erb, 1965). Although little is known about oestrogen content of ovarian vein blood, considerable variation has been observed in numbers of Graafian follicles during the follicular phase (Rajakoski, 1960; Choudary, Gier & Marion, 1968; Lamond, unpublished). It seemed likely that variation in size of Graafian follicles might be associated with variation in ovarian steroid production. Consequently it was of interest to determine to what extent variation in oestrogen blood levels during the follicular phase of the cycle influences ovarian function.

Hereford heifers were kept in pens and fed a mixture of 60% hammer-milled lucerne hay and 40% crushed grain sorghum, sufficient to give liveweight gains of about 0.5 lb/day. Ovarian cycles were synchronized using CAP (1-chloro- Δ^6 -dehydro-17 α -acetoxypregesterone) or progesterone (Lamond, 1964, for details of synchronization methods). The heifers were given 12 mg CAP/head/day in the feed for 12 days, after which they were allocated at random to ten treatment groups (three to four heifers/group). Taking Day 1 as the day when feeding of CAP began, the treatments from Days 13 to 18 were as follows:

<i>Group</i>	<i>Treatment from Day 13 to Day 18 inclusive</i>
1	40 mg progesterone/day except Day 16
2	40 mg progesterone/day except Day 17
3	As for 1, plus 100 μ g stilboestrol on Day 16
4	As for 2, plus 100 μ g stilboestrol on Day 17
5	As for 1, plus 1000 i.u. PMSG on Day 16
6	12 mg CAP/day except Day 16
7	12 mg CAP/day except Day 17
8	As for 6, plus 100 μ g stilboestrol on Day 16
9	As for 7, plus 100 μ g stilboestrol on Day 17
10	As for 6, plus 1000 i.u. PMSG on Day 16

Progesterone was dissolved in arachis oil and given by intramuscular injection; stilboestrol dipropionate was dissolved in arachis oil and given by subcutaneous injection.

The ovaries of all heifers were examined for ovulation and for follicles greater

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