THE INFLUENCE OF SEASON OF CALVING AND STOCKING RATE ON COW PRODUCTIVITY

L.J. CUMMINS*

Since 1971 an experiment has been in progress at Hamilton in south western Victoria to examine the effect of stocking rate and season of calving on beef cow productivity. The experiment commenced with the purchase of yearling Hereford heifers which were mated to calve in either autumn (April May) or spring (August September). In March 1971 pregnant heifers from these two groups were allocated to their plots. Half the cows joined at each time were stocked at 1.5 cows per hectare and the remainder at 2.0 cows per hectare. There were two replicates of each treatment with 20 cows per replicate.

Mating from.1971 to 1975 was by artificial insemination using a single Hereford sire each year. The decision to use only AI, the necessity to rely almost entirely on teaser bulls for oestrus detection, the restriction of the mating season to two months and the retention of any non pregnant cows on their original plots may all have contributed to the relatively low pregnancy rates achieved.

Table 1 presents mean values for 1972-74 for calf birth weight and weaning weight and for 1972-75 for pregnancy rate. Birth weights and weaning weights have been adjusted for age of dam and calf sex effects (Holland personal communication; Hopkins 1974). Calves were weaned at approximately nine months of age and weights adjusted to a common age of 270 days. Thus the weights shown in Table 1 represent. the weight of a steer calf from a six to eight year old cow.

The high stocking rate had a severe effect on birth weight, weaning weight and fertility in all years. Although spring born calves were heavier at birth than autumn born calves they were considerably lighter at weaning nine months later.

TABLE 1
Adjusted mean values of cow productivity parameters

	Season of calving			Stocking rate (cows/ha)		
	Autumn		Spring	1.5		2.0
Pregnancy rate %	61	NS	66	71	**	55
Birthweight kg	34.2	**	36.6	36.8	**	34.0
Weaning weight kg	251	**	205	246	**	210

Significance NS = P>0.05 ** = P<0.01
Season of calving × stocking rate interaction NS.

REFERENCES

HOPKINS, I.R. (1974). M.Ag.Sci. Thesis, University of Melbourne.

* Department of Agriculture, Victoria, Pastoral Research Station, Hamilton.