

## The period between birth and first suckling in dairy calves

S. A. EDWARDS AND D. M. BROOM

*Department of Zoology, University of Reading, Reading, Berkshire*

The period between birth and first suckling was recorded for 82 dairy calves. 11 per cent of heifers' calves and 46 per cent of cows' calves had not suckled by 6 h after birth. All calves, whether suckling spontaneously or put to the teat at 6 h, had adequate 48 h total serum immunoglobulin levels.

CALVES ARE BORN with little or no serum immunoglobulin and, until able to make their own, they depend upon adsorption of colostrum via the intestinal wall (Oudar *et al* 1976). The concentration of immunoglobulins in the colostrum (Kruse 1970a) and, especially, the efficiency of their absorption from the gut (Kruse 1970b), both decrease with time after parturition, and a delay before first suckling may therefore have an adverse effect on the calf's future health. Delays before first suckling have been reported by Walker (1950), who watched three calves and by Selman *et al* (1970), who observed 20 dairy animals which had been obtained from a cattle dealer shortly before parturition. This paper reports the period before first suckling for 82 dairy cattle, of various ages, under normal calving conditions on one farm.

### Materials and methods

Eighty-two Friesian cows and their calves were observed continuously for 6 h after parturition at Sonning Farm, University of Reading, in the autumn of 1977. There were 28 heifers, giving birth to Sussex  $\times$  Friesian or pure-bred Friesian calves, and 54 cows entering their second to seventh lactation, giving birth to pure-bred calves. Several days before parturition was expected, the animals were added to a small group in a covered yard. Sixty-five of them were moved into individual pens when calving appeared imminent while the others calved in the covered yard. Assistance was given at calving when necessary. Suckling is defined as the activity of the calf when obtaining milk (Cowie *et al* 1951). It was recorded when the calf had the teat in its mouth and swallowing movements were seen. Any calves which had not suckled by 6 h after birth were put to the teat to ensure adequate colostrum intake. Blood samples were taken from the calves 48 hours after birth and serum immunoglobulin levels ( $G_1$ ,  $G_2$ , A and M) determined by radial immunodiffusion (Mancini *et al* 1965).

### Results

As shown in Table 1, many calves failed to suckle within 6 h of birth. The proportion of calves which had suckled by this time decreased with the age of the dam. Heifers' calves suckled earlier than calves of older cows; after 2 h 61 per cent of heifers' calves and 15 per cent of cows' calves had suckled ( $\chi^2 = 16.23$ ,  $P < 0.001$ ).

TABLE 1: Number of calves which suckled within 6 h in relation to the lactation number of the dam

Lactation number of dam	Number of calves	
	Suckling within 6 h	Not suckling within 6 h
1	25 (89%)	3
2	13 (65%)	7
3	7 (54%)	6
4-7	9 (43%)	12

$\chi^2 = 12.61$ ,  $P < 0.01$

All calves, whether suckling spontaneously or put to the teat 6 h after birth, had 48 h total serum immunoglobulin ( $G_1 + G_2 + A + M$ ) concentrations greater than 20 mg/ml.

### Discussion

The Code of Recommendations for the Welfare of Livestock (Ministry of Agriculture, Fisheries and Food 1971) states that 'it is vital that every calf receives colostrum . . . as soon as possible after it is born and certainly within the first 6 h of its life'. The three calves observed by Walker (1950) had suckled by 6 h after birth and it is still a widely held view that most calves left with their dam suckle within this time (Selman *et al* 1971; Hafez 1975). The results of this study suggest that, although this is true of heifers' calves, many of the calves of older cows fail to suckle during the first 6 h after birth. Selman *et al* (1970) reported that two of 10 heifers' calves and three of 10 cows' calves failed to suckle within the first 8 h post partum. The larger udder and teats of older animals have been shown to delay suckling (Selman *et al* 1970) and could account for the effect of the age of the dam on the delay to first suckling.

It is unlikely that the presence of an observer affected the time to first suckling, because all the animals were accustomed to people and seemed undisturbed by the observer who kept quiet and still.

There have been reports of calves receiving colostrum early in life and subsequently being hypogammaglobulinaemic (Fey and Margadant 1961; Klaus *et al* 1969), but in this study all the calves, whether suckling unaided or put to the teat, achieved serum immunoglobulin levels well above the 6 and 10 mg/ml considered adequate by Kruse (1970c) and Dardillat (1976). This evidence supports the view of Kruse (1970c) that no young calf is unable to absorb colostrum immunoglobulin and that hypogammaglobulinaemia is due to too long a delay in receiving colostrum or to inadequate colostrum immunoglobulin concentrations.

The results of this study emphasise the danger of assuming that suckling will occur. Supervision of suckling is essential, especially for calves of older cows. If the stockman puts the calf to the teat soon after birth, subsequent hypogammaglobulinaemia is very unlikely.

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