AH 483 Investigation of prolonged service interval in dairy cattle

The objective of this project was to determine what proportion of late returns (defined as returns to oestrus 36 or more days after mating) were associated with:

- Early embryonic loss.
- Cows mated unsuccessfully at oestrus that either lapsed into anoestrus, or were not detected by the farmer when a normal return occurred.
- Cows mated at anoestrus or di-oestrus that remained in that state until the late return occurred.
- Pregnant cows thought to have had a late return.

Methods

The trial was carried out in Taranaki in the 1984-85 season and was based on progesterone radio-immuno assay of milk samples. Samples from 2 274 cows in 14 herds were collected on the day of insemination and 7, 23 and 30 days later, unless a return to service occurred before the designated sample date. Two additional samples were collected from cows which returned to service more than 35 days after the first service, one sample on the day of the return and another sample 7 days later. All 6 samples from such cows were assayed for progesterone concentration.

Results

Late returns occurred in 8.6% of the 2 274 cows. Milk progesterone assay results indicate that 55.9% were associated with loss of conceptus, 22.1% had not been detected in oestrus around 21 days after first insemination, 11.8% were in anoestrus at insemination, 5.6% conceived to the insemination and were pregnant when thought to have had a late return, 2.6% were in pro-oestrus or di-oestrus at insemination, and 2.1% went into anoestrus after an oestrus mating.

The 8.6% prevalence of late returns after the thirty-fifth day in the 2 274 cows milked in the 14 Taranaki herds is higher than reported in New Zealand previously but is low compared with overseas. Although many (62%) of the late return cows were mated again and conceived, this syndrome contributes significantly to the wastage rate in New Zealand dairy herds with their strictly seasonal calving pattern.

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Slightly more than half of the late returns were caused by loss of the conceptus, and the remainder by faults in mating management or abnormal sexual behaviour of the cows. The causes of the abortions are largely unknown and therefore prevention of the abortion problem is not possible at present. The causes of late returns associated with mating management can be dealt with to an extent by diligent heat detection and the use of heat detection aids. In other words, about half of the long returns that happen can be prevented.

As indicated by this survey, heat detection is of primary importance in controlling prolonged service intervals in dairy cows. In New Zealand dairy herds, tail painting is a reliable method of oestrus detection, and perhaps vasectomised marker bulls or entire bulls could be used later as additional aids to identify late returning cows. Such cows should be mated, providing that their expected calving date can be made to fit into an acceptable calving pattern. With a cow that is pregnant, although late, you have an option. If she is empty you really have no options.

Accurate diagnosis of the syndrome on a large scale could be facilitated by the advent of the cow-side progesterone test on milk. This test may in fact be available in New Zealand shortly.

Research into the causes of the early abortions is required, but will be difficult and expensive. This trial has at least defined the problem more accurately and indicated that about half of long returns can be prevented.

The project is now completed.

R.M. Marchant
Veterinary Officer
Stratford