

# A preliminary study of reproduction in the -first batch of Jersey heifers gifted by New Zealand Government.

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Four hundred and seventy five Jersey heifers and twenty five bull calves were gifted by the New Zealand Government to Ceylon in 1965. These animals (save one heifer which died on board during the journey) arrived by ship in Ceylon in June of the same year and formed the basis of the present 'New Zealand' Farm, Ambawela.

Soon after arrival in Ceylon they were transported by train to Ambawela. The pre-immunisation of these animals against Babesiosis and Anaplasmosis were done immediately after their arrival in Ceylon.

The present 'New Zealand' Farm was at that time under construction and was to form another unit of the main farm at Ambawela. However, after the arrival and moving of these animals to this unit it was given the status of a separate farm. The animals being a gift from New Zealand the farm came to be known as the 'New Zealand' Farm, Ambawela and was distinct from the other farm at Ambawela which is composed of Ayrshires only. The material for this paper was obtained from the history sheets of the animals which were cows (360 cows) at the time of the study (July 1969). The purpose of the paper is to record the pattern of reproductive performance of these animals under our conditions though born in New Zealand.

*Age at first calving* : The early maturity of the Jersey breed is more marked than in any other breed. Rare cases have been reported of Jersey females having the first calf by the time they are a year old (Judkins and Keener 1965). As a breed both male and female develop rapidly. Some breeders today plan to have their heifers calve at about thirty months as they believe a greater vitality and producing capacity is secured. At Ambawela the initial breeding of the heifers was deliberately delayed and staggered as the buildings were not completed as anticipated and the extent of pasture lands was

inadequate. This together with the fact that the exact date of birth of each animal was not known would not give an accurate value for the age at first calving. However, most animals were 6-8 months of age (Fonseka, 1969) though some were older and some were even pregnant on arrival here. In the light of the above the average age of 35 months as age at first calving obtained in this study is favourable, when compared with reported figures of 24-30 months for this breed in temperate countries (Juergensoo and Mortenson, 1964). A late age of first calving has also been observed with European cattle in high elevation areas in the tropics (Mahadevan, 1956).

*Distribution of calvings.*—Ten per cent. of the cows have had a single calf; fifty six per cent. have had two calves and twenty four per cent. have had three calves. The average age of these animals being four years and eight months compares favourably with the distribution of calvings especially when considering the fact that some of them are again in various stages of pregnancy.

*Twinning*: The incidence of twinning is an uncommon feature (Rai, 1968). Two twin births have been observed out of all the births analysed, in one of these cases both were males.

*Sex Ratio*: Theoretically sex ratio should be 50 per cent. or 100 : 100. The reasons why it does not conform to this is not known. However, it is agreed that there is a higher percentage of males at conception than at birth. When only viable young are considered the ratio is in the region 95 : 100 (Branas *et al*, 1965). The sex ratio of viable calves at Ambawela Jersey Farm is in the region 93 : 100. A more accurate assessment of the ratio is possible if the number of births considered was large. The sex ratio of male calves usually varies from 42.6 to 53.7 per cent. (Roberts, 1961).

*Calving interval*: The calving interval is made up of the service period, or the period between parturition and subsequent conception and the period of gestation. The latter period is usually  $284 \times 4$  days and the former between 60-90 days (Rai, 1968; Carmona and Monz, 1966). The Jersey cows as a breed could be expected to calve once a year for many years and it is not uncommon to find cows of twelve years and more as steady producers. The calving interval observed in the present study of the records was thirteen months (see Table 1). This is very close to the ideal of twelve months, however, it must be borne in mind that the service period in a sizeable number of animals was less than 60-90 days and this would have influenced the present value obtained.

## A PRELIMINARY STUDY OF JERSY HEIFERS

**Birth Weight:** The birth weight of the calves born at the Jersey Farm, Ambawela did not show any significant difference between the sexes. The average birth weight irrespective of sex was 34 lbs. The Jerseys at Ambawela being smaller in confirmation than the American counterpart (whose birth weight varies from 45 lbs. to 75 lbs. Jurguson and Mortensen, 1960) and also in view of the local conditions prevailing at the time the average birth weight recorded is understandable. An increase could be expected in future years.

**Lactation records:** Fifty one percent of all the lactations studied was over 4000 lbs. while nineteen per cent were over 5000 lbs. The highest lactation recorded was 9000 lbs. The overall average of the lactations studied was 4049 lbs. (Lactations of 305 days only were considered). The lactation range is very variable in the breed and is influenced by a number of factors (Plumb, 1930).

**Stillbirths, Abortions and Neonatal Mortality:** The combined loss from these was observed to be ten per cent of all the births recorded. It was not possible to categorise individual causes. The losses sustained from these causes is low (Van Dieten, 1964).

**Services per conception:** An accurate estimate of the services per conception was not possible. From observations made the services per conception appears to be in the range 1.5 to 2.5, this range is suggestive of moderate fertility (Carmona and Monz, 1966).

### INCIDENCE OF REPRODUCTIVE DISORDERS

Ovario-uterine hypoplasia, cystic ovaries, anoestrus and repeat breeding were the common causes of lowered fertility observed in some of the animals. The incidence of these was within the expected range (Riznov, 1967).

### SUMMARY

A preliminary study of the pattern in reproductive performance of the Jersey animals gifted by New Zealand Government in 1965 was made. The age at first calving, distribution of calvings, twinning, sex ratio, calving interval, weight at birth, lactation, stillbirths, abortions neonatal mortality, services per conception and incidence of reproductive disorders were the aspects considered. The general performance of the animals from observations so far made has been good considering the factors and circumstances which influenced the

performance. With a more intense management and husbandry programme an improved performance could be expected. A comprehensive study will be possible with the accumulation of more data.

TABLE 1\*

Number of cows	..	..	360
Number of heifers	..	..	67
Average age at 1st calving	..	..	35 months
Average weight at birth	..	..	34 lbs.
Sex ratio	..	..	93 100
Average calving interval	..	..	13 months
Twinning	..	..	2 pairs of twins (of all births)
Percentage cows with single calving	..	..	10%
Percentage cows with two calvings	..	..	56%
Percentage of still births abortions and neonatal mortality	..	..	10%
Highest lactation	..	..	9000 lbs.
Average lactation (305 day)	..	..	4049 lbs.
Lactation of 4000 lbs. and above	..	..	51%
Lactation of 5000 lbs. and above	..	..	19%

\*Average values for characteristics studies.

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