

The performance of Friesian and Jersey cows in Dairy units Benghazi and Eljabel Elakhder in Libya M.E. Elimam

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SUMMARY

The performance of Friesian and Jersey cows in seven dairy units in Benghazi and Eljabel Elakhder was summerized. Age at first calving (days) was 764.4 — 926.2 for Jersey and 770.4 — 1006.1 for Friesian. Calving interval (days) were 395.7 441.0 for Jersey and 384.2 —452.3 for Friesians. Calf birth weight (kg) was 18.3 — 22.9 for Jersey and 34.1 — 37.3 for Friesian. Calf mortality was 1.9 — 20.0% for Jersey and 7.9 — 25.3% for Friesians. Number of services / conception and calf born respectively were 1 — 1.73 and 1 — 86 for Jersey and 1 and 1.04 — 1.06 for Friesian.

The performance of Jersey and Friesian dairy cows in Benghazi and Eljabel Elakhder dairy units in Libya was satisfactory and was relatively better than in most developing countries.

INTRODUCTION

The demand for livestock products in Libya increased substantially after the oil boom. Imports were required to fill the gap between national production and demands. Many large dairy units have been established and high yielding dairy cows were imported. It is well established that the performance of these high yielding breeds is generally depressed in developing countries due to many factor, including environment, diseases and poor nutrition and management. Information on the performance of breeds in Libya is scarce. Consequently, many trials were conducted to evaluate their performance. This paper summerized the performance of Jersey and Friesian dairy cows in Benghazi and Eljabel Elakhder in Libya.

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MATERIALS AND METHODS

Modern dairy units have been established in Banghazi and Eljabel Elakhder in Libya. Pregnant Jersey and Friesian heifers were imported from Britain, Denmark and U.S.A. They were housed in shaded corrals in all dairy units except in Elgoba farm where they were housed in individual pens. The cows were offered green forages and hays ad libitum and concentrates according to milk yield and body condition. The cows had free access to drinking water and mineral blocks. The cows were machine milked twice daily in parlours. Calves were allowed to suckle colostrum and then separated from their dams. They were offered fresh milk by pail. They were housed in individual pens and then in groups. They were weaned at three month old. A good recording system is maintained in all dairy units in the area. The records were collected from all the dairy units and used to calculate some important economic traits in dairy cows. The data were then statistically analysed according to Snedecor and Cochran (1965)

RESULTS AND DISCUSSION

The performance of Jersey cows in Elgoba farm is shown in Table 1 and the performance of imported and home-bred Danish Jersey cows in Elmarj dairy unit is shown in Table 2. Age at first calving was almost similar in the two farms and was close to the recommended two years for efficient milk production (Bath *et al.* 1978). This was mainly because they were imported pregnant from countries where calving at early ages is the norm. Age at first calving was relatively higher in home-bred cows and similar results were reported for the breed in developing countries (Pandya 1978 and Rodriguez *et al.* 1978).

The number of services / conception or calf born were excellent in Elgoba farm were relatively higher in the second calving due to unsuccessful introduction of artificial insemination and some cows required four inseminations to conceive. More services are generally required in developing countries and were 2.3 / conception in Costa Rica (Rodriguez *et al.* 1978).

The overall gestation period in Elgoba farm was 277.2 days and was close to the reported values for the breed (Bath *et al.* 1978).

Calf birth weight generally increased with parity in Elgoba farm and was 18.3, 22.9, 19.4 and 22.8 kg for the first, second, third and fourth parities respectively. The calves of imported Jersey cows were heavier at birth than those from home-bred ones. Calf birth weights in these two farms were generally higher than reported values for the breed in developing countries where it was 12.9 — 18.3 kg in Uganda (Phipps 1973) and 17.0 — 18.6 kg in Rajistan (Malik *et al.* 1976).

Twinning rates were relatively higher in imported cows and calf mortality was relatively low in Elmarj farm specially for home bred cows.

Adjusted 305 days milk yields were higher for imported cows compared to home bred ones. It was higher than the reported 2257 kg in Elmarj farm (Bhargava 1986) and in other developing countries and was 1257 kg in Nigeria (Adeneye and Adobanjo 1978) and 1732 kg in Uganda (Phipps 1973).

The first calving interval was relatively longer in Elgoba farm due to the unsuccessful introduction of artificial insemination and more inseminations were required. The third calving interval was close to the recommended 12 — 13 month for efficient milk production (Bath *et al.* 1978). Calving intervals in Elgoba farm were generally shorter in many developing countries where it was 376 — 454 days in Uganda (Phipps 1973) and 471.0 days in Costa Rica (Rodriguez *et al.* 1978). Table 3 shows the performance of American Friesian dairy cows in Elfatih dairy unit. Table 4 shows the performance of Friesian dairy cows in Benghazi and Eljabel Elakhder dairy units in Libya. The least age at first calving was 770.4 days in Elfatih farm and was close to that in Elgoba and Elmarj farms. This was mainly because they were imported pregnant from countries where early calving is the norm. Age at first calving was generally higher in Benghazi farms especially in Mutkamla farm (1006.1 days). The overall mean age at first calving was 938.2 days in Benghazi farms and 904.6 days in all the farms. Age at first calving was 25 month for Danish Friesian in Tripoli (Darwash 1974) and was relatively better than in Benghazi farms and close to that in Elfatih farm. Age at first calving was

generally higher for the breed in developing countries and was 27 month (Koch *et al.* 1975) and 30 month (Adeneye and Adebajo 1978) in Nigeria and 26 — 35.9 month in India (Kumar *et al.* 1980).

The number of services / conception or calf born in Elfatih farm were excellent compared to other developing countries and the former was 2.67 in Iraq (Ali *et al.* 1983).

Males were generally heavier at birth in Elgoba and Elfatih farms which agrees with other reports in the literature (eg Bath *et al.* 1978). Calf birth weight in Elfatih farm was better than that for the breed in many developing countries and it was 25.9 kg in Egypt (Alim and Taher 1979) and 27 kg in Nigeria (Koch *et al.* 1975).

Calf mortalities were higher in the first calving in Elfatih farm because calves were exposed to cold winds prevalent in the area associated with faulty design of buildings and declined when modified.

The first calving interval was the least in Elfatih farm and was close to that in Elgoba and Elmarj farm and to that recommended for efficient milk production (Bath *et al.* 1978). The overall mean first calving interval was 418.3 days in Benghazi farms and 411.5 days in all the farms. The least second calving interval was in Benina farm and the overall mean was 419.5 days in Benghazi farms and 418.3 in all farms. The third calving interval was the least in Benina and the longest in Mutkamla and the overall mean was 432.1 days. The fourth calving interval was the least in Hawari farm and longest in Mutkamla farm and the overall mean was 439.2 days. The overall calving interval generally increased With parity. The overall calving intervals (days) were 398.8 in Elfatih, 419.4 in Benina, 424 in Hawari and 434.5 in Mutkamla. More efforts are required to reduce calving intervals especially in Mutkamla farm by reducing the period the cows are open. Calving intervals are generally long for the breed in developing countries and was 496 days in India (Kumar *et al.* 1980).

The mean milk yield for Friesians in Benghazi farms was 3050 kg / 305 days and daily milking cows were 66.2 + 6.6% (Bhargava 1986). Milk yields in Benghazi farms were better than that reported for Friesians in many developing countries and it was 2436 — 3394 kg in India (Kumar *et al.* 1980).

The results showed that the performance of Friesian and Jersey cows in Benghazi and Eljabel Elakhder farms was generally satisfactory and was among the best for these breeds in developing countries. However, their performance could be further improved by improving nutrition, management and health.

Table 1. The means for some important economic traits in Jersey cows at Elgoba Experimental Farm (Source = Elimam (1996).

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