SHORT COMMUNICATION

A STUDY OF LACTATION CURVES OFImported Friesian Cattle in a Tropical Environment

J. A. IBEAWUCHI*
National Veterinary Research Institute
P. O. Box 12, Vom,
Nigeria.

(Received 29 July 1986; accepted for publication 10 April 1987.

ABSTRACT

In 586 normal lactations of 138 Friesian cattle maintained at the National Veterinary Research Institute, Vom, from 1968 to 1983, maximum milk production was attained in the fifth week of lactation. The fourth and sixth lactation curves showed superiority over the first, second, third and fifth. The curves apparently indicate that culling of unproductive animals before the 6th lactation could be economically unreasonable.

INTRODUCTION

Information on age at first calving (Knudsen and Schael, 1970; Adeneye and Adebanjo, 1978; Ibeawuchi, 1984), weight at birth (Adeneye et al. 1977) and lactational characteristics (Adepoju and Faturiti, 1975; Akinsogun, 1981) of Friesian cattle in Nigeria have been published. Persistency, the ability of the cow to continue to produce relatively at higher levels throughout the lactation, is an important factor in the economics of milk production. The shape of the lactation curve is important in the estimation of persistency.

There is however, a paucity of information (Adeneye and Adebanjo, 1978) on the shape of lactation curve of imported Friesian cattle in Nigeria. This paper therefore, reports on the shape of the lactation curves of imported Friesian cattle in Vom, Plateau State Nigeria.

MATERIALS AND METHOD

The data were compiled from the records of Friesian cattle belonging to the National Veterinary Research Institute, Vom between 1968 and 1983. The cattle were imported as heifers from Britain between 1964 and 1965. They were fed grass hay mainly Digitaria exilis Stapf and maize silage in the dry season (October - March). During the wet season (April - September) the animals were rotationally grazed in paddocks sown with Hyparrhenia filiculmis, Digitaria spp., Andropogon gayanus, and Cynodon nlemfuensis. In addition, milking animals received a concentrate supplement comprising 70% maize, 25% groundnut cake, 15% cotton seed cake, and a proprietary vitamin and mineral added at the rate of 5kg/ton. The concentrate was offered in two equal instalments in the morning.

*Present Address: Department of Animal Science, University of Maiduguri, Maiduguri.


137
(06.00 hrs) and afternoon (15.00 hrs) machine milkings at the rate of 1.0kg per 2.5kg milk yield. The allowances fed were adjusted weekly on the basis of the average milk production of each animal recorded in the preceding week. Fresh clean water and salt-ticks were always available. Individual daily and weekly milk yields were recorded. During the period, a total of 586 normal lactations of 150 Friesian cows were recorded and analysed.

RESULTS AND DISCUSSION

The lactation curves are presented in figure 1. The mean maximum weekly yield of 80kg for all lactations was attained in the fifth week, but declined more or less in a straight line at a fairly constant rate. This observation is in line with other reports (Kellogg et al. 1964; Pradhan and Dave, 1973). The curves also show the peak yield periods in each lactation and confirm that the peak was reached during the fifth week of the first six lactations. In addition, a substantial increase in weekly milk yield was observed between the 20th and 30th week of the first and second lactations. This could be due to the fact that most of the animals might have commenced the later part of these
lactations in the wet season (April to September). The flush of pasture growth during the wet season gave a stimulus to milk production resulting in this second peak. The lactation curves indicated the superiority of the 4th and 5th lactations over the 1st, 2nd, 3rd and 5th. The mammary gland developed to full capacity with increase in parity number, thus increasing its capacity for more milk production. Consequently, older calves produced more milk than younger calves. The first and second lactation curves started at the lowest levels, while curves for the 3rd and 5th started progressively at higher levels, but tended to decline more sharply than that for the 1st and 2nd. This is in agreement with other reports that first calves are more persistent than older cows (Ullah, 1952; Singh et al., 1965; El Amin and Osman, 1971). The curves apparently show that it is economically unreasonable to cull unproductive animals before the 6th lactation.

REFERENCES


ADEPOJU, A and FATUROTI, E.O. (1975)

Comparison of milk composition of two exotic breeds of dairy cattle under the same management in the tropics.

Some dairy characteristics of Northern Sudan Zebu cattle. 1 – The components of the lactation curve.


The Vom herd: a study of the performance of a mixed Friesian/Zebu herd in a tropical environment.
Trop. Agric. (Trinidad) 47: 198–203.

A study on the lactation curve and the rate of decline in milk yield in Kankej cattle.

Indian J. Vet. Sci. 35: 249–257.