FUNCTION ANALYSIS OF THE LACTATION CURVE OF WHITE FULANI COWS

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The White Fulani cow in Nigeria is exploited for milk purpose, especially among the sedentary herdsmen population and research institutes. This study therefore focused on modeling the pattern of the lactation curve of the White Fulani cows comparing five equations (Incomplete gamma function, polynomial inverse function, Mitscherlic exponential integrated function and Multiphasic function). 501 complete lactation records of 97 white Fulani cows were used. Weekly and monthly milk records were fitted to the models. Of the four models used, Multiphasic function was not statistically appealing requiring large number of iterations and large computational time. The incomplete gamma function and the inverse polynomial performed statistically well in replicating the underlying data and converging at regular time interval. Although, all the functions tended to underestimate production at the early stage, the Mitschelic function drastically overestimated production at the advanced stage of lactation. Milk production peaked at about 60 days for all functions, while peak yield varied between 26 to 30kg per day. Persistency ranged between 2.5 to 5.2 for all functions.