

# LACTATION CURVE OF HOLSTEIN FRIESIAN COWS IN THE KINGDOM OF SAUDI ARABIA

A. K. A. Ali<sup>1</sup>, R. S. Al-Jumaah<sup>1</sup> and E. Hayes<sup>2</sup>

Department of Animal Production, College of Agriculture, King Saud University, P.O. Box 2460, Riyadh 11451  
Kingdom of Saudi Arabia

## Summary

Monthly test day production for 12,020 records, were collected from six of the largest specialized dairy farms located in central region of the Kingdom of Saudi Arabia. The records described lactating cows in four parities and two seasons of calving. Monthly test day records were fitted using Wood's model  $At^b e^{-ct}$  with multiple and additive error term. Linear and non-linear regression models were used to find the estimates of the parameters necessary to draw the lactation curves. The shape of the lactation curves of different parities showed that third lactation has the heighest peak (43.08 kg) for linear regression model and (42.08 kg) for non-linear regression model. Fourth lactation has the lowest peak (24.00 kg) for linear regression model and (25.64 kg) for non-linear regression model. Cows of second and third lactations reached the peak at 58 day for both linear and non-linear regression models. Cows of first lactation were more persistent and had late peak at 68 and 67 days for both models respectively. While, third lactation cows were lower persistent and had early peak at 58 day for both models. Cows calved at winter months have higher starting values (A), higher ascending slope (b) and higher decending slope (c).

Least square means of milk yield of the first four parities and for overall data were 6,653, 7,659, 7,482, 6,988 and 7,614 kg respectively. The corresponding lactation period were 358, 367, 350, 363 and 364 days respectively.

**(Key Words :** Lactation Curve, Non Linear Model, Persistency, Milk Yield, Lactation Period)