**The Effect of Lactation Number on The Milk Yield, Peak Yield, Time to Peak and Peak Holding Period of Crossbred Sahiwal-Friesian Cows in Selected Dairy Cattle Farm of Sabah**

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**Abstract**

A pilot study was carried out at Yun Fook Resources dairy farm located in Keningau, Sabah in order to evaluate the relationship between the lactation number and the milk yield, peak yield, time to peak and peak holding period of the cows. The treatment groups for the study consisted of four different lactation number groups, that was the first lactation, second lactation, third lactation and fourth lactation. Cows were selected at random based on their lactation numbers and were subjected to each treatment groups (25 cows/treatment group). The data set consisted of observations of milk yield of crossbred Sahiwal-Friesian cows from 1-120 days in milk. Each time the cows were milked by the automatic milking machines during the 24 hours, the DelPro 5.2.1 software recorded the identification numbers of the cows being milked, date and time of the milking and milk yield (litres) as measured by the milk meters installed to each of the automatic milking machine units. Peak yield is defined as the highest milk yield that a cow can produce in the lactation cycle. Peak holding period is the period of the milk yield before the peak yield until the period of milk yield after the peak yield. One-way Analysis of Variance (ANOVA) was used to interpret the data. Results are expressed as the mean ± standard error of the mean. Comparison between the means were evaluated using *Post Hoc Tukey test*. A probability of less than 0.05 was considered significance (p<0.05). Cows in the third lactation showed the highest average daily milk yield, which was 19.74±0.53 litres. Meanwhile, cows in the fourth lactation showed the lowest average daily milk yield, which was 17.14±0.59 litres. Cows of the fourth lactation showed the highest peak yield, that was 37.35±2.10 litres and cows in the first lactation showed the lowest peak yield, that was 30.85±0.92 litres. Cows of the fourth lactation was found to reach their peak yield earlier, that was 28±3 days compared to the other lactation number cows. The first lactation cows had showed the longest peak holding period compared to the other lactation number cows, that was 60±3 days. From the study results, a significant relationship was found between the milk yield and the lactation numbers (p<0.05). It was also found that lactation number had a significant influence on the peak yield, time to reach peak and peak holding periods (p<0.05) of crossbred Sahiwal-Friesian cows. As an overall, it was found that the third lactation cows have produced the best milk yield, peak yield, time to peak and peak holding period. Detailed knowledge of the effect of lactation number on the milk yield, peak yield, time to reach peak and peak holding period will help guide future recommendations for producers to maximize their milk production in the Malaysian Dairy industries.

**Key words:** crossbred Sahiwal-Friesian cows, lactation number, milk yield, peak yield, time to peak, peak holding period