

**ESTIMATION OF CATTLE LIVESTOCK POPULATION IN
PENINSULAR MALAYSIA BY USING LEAST SQUARE
METHOD AND RUNGE-KUTTA METHOD**

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ABSTRACT

Cattle breeding is a common job and familiar to farmers and ranchers in peninsular Malaysia. The rate of increase and decrease in the number of cattle livestock population in every year is not much different and the number always remains high. Data for the cattle livestock population can be seen in the open data at The Malaysian Administrative Modernisation and Management Planning Unit (MAMPU). By using this data, estimation of the cattle livestock population for the next year can be implemented. For this project, a mathematical model was used to estimate the data on the number of cattle livestock in peninsular Malaysia. Among the mathematical models used are the least square method and the Runge-Kutta method. These two methods were used to estimate the data and compare by analysing the error of the methods for the purpose of determining which method is the best. Based on this study, it was found that cubic least square method is the best method because it has high accuracy. Then, the total of cattle livestock population in peninsular Malaysia for year 2020 until 2025 was estimated using the best method. The Ministry of Agriculture and Food Industries (MAFI) also can use this cubic least square method to predict data for next year.

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