# A COMPARATIVE APPROACH TOWARDS DAIRY HEIFER WEIGHT GROWTH BY USING BRODY GROWTH MODEL, VON BERTALANFFY GROWTH MODEL, AND LOGISTIC GROWTH MODEL

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## ABSTRACT

Growth in animals can be interpreted by mathematical functions. These function can predict the development of live weight, aiding in the assessment of breed's productivity under specific breeding conditions. Generally, growth can be described and predicted using conventional mathematical models, as it does not occur in chaotic way. Demonstrated animal growth using non-linear models enables a thorough analysis of their behavior. The data for weight from $1^{st}$ to $24^{th}$ month is collected from PennState Extension website will be analysed by three model; Brody growth model, Von Bertalanffy growth model, and Logistic growth model. First, the growth rate for each growth model is calculated. Then, the average of growth rate from each model is used to predict the growth model weight value. The comparison between each model predicted weight and actual weight is presented on the graph. Error analysis is conducted by getting the mean of submission absolute approximate value subtract exact value divide exact value for each model. The best model with least error is used to find the best model used to find maximum weight for Jersey heifer and its time. On the paper, Logistic predicted weight's curve is the most fitted to actual weight than Brody and Von Bertalanffy growth model curve. Based on the error analysis, can be concluded that Logistic growth model is the best model since it has least error value compared to other two model.

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# Table of Contents