NON-LINEAR MODELS FOR GROWTH CURVE OF NIGERIAN LOCAL CHICKENS

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This research was conducted to model the growth curve of three strains of Nigerian local chicken. Four functions (Woods, Parabolic exponential, Jenkins and Ferrel and Gompertz) were used to model bodyweight of these chicken strains. All these functions were fitted to body weight age data for this three strains from week 1 to 20. The fitting of the model presented no computational difficulty as they converge at regular time intervals. The asymptote A, which estimated the average mature weight in the different models generally differ. The Parabolic exponential gave the value of A that is closest to the observed value in the three strains considered. The Woods and Gompertz function underestimated mature weight, while Jenkins and Ferrel′s model overestimated asymptotic mature weight for the three chicken strains. The Parabolic exponential function had the least value of Residual Mean Square when compared to others and also with the R^2 of 98.62% It can therefore be concluded that Parabolic exponential function best described the growth curve of the three Nigerian Chicken Strains in this study.