SHORT TERM FORECASTING OF POULTRY POPULATION AND PRODUCTION IN SRI LANKA USING TIME SERIES APPROACH

U.M.C.M. Fernando[1], W.A.D.V. Weerathilake[1] and N.R. Abeynayake[2]

[1]Department of Livestock and Avian Sciences, Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka, Makandura, Gonawila (NWP), Sri Lanka; [2]Department of Agribusiness and Management, Faculty of Agriculture and Plantation Management, Wayamba University of Sri Lanka, Makandura, Gonawila (NWP), Sri Lanka

Corresponding author: dammika_kandy@yahoo.com

The present study was designed to detect a suitable technique for forecasting of annual poultry population (such as total poultry population, chick population, laying hen population and cock bird population) and annual poultry production (such as production of day old chick of broiler and layer, poultry feed production, egg production, chicken meat production) in Sri Lanka. Best fitted trend models were identified for poultry production and population data by Trend Analysis. Single Exponential Models and Double Exponential Models (Holt's Linear Exponential Smoothing) were used for short term forecasting of the validation of the selected models. Autocorrelation and Normality test (Anderson-Darling test) were performed as residual analysis. According to the trend analysis, upward quadratic trend was observed in every poultry population and production data. Single Exponential Models were best fitted than Double Exponential Models for short term forecasting of poultry population and poultry production according to the MAPE and MAD values. The forecasted total poultry population was 14.01 million and populations of chicks, laying hens and cock birds were 5079.39, 7331.45 and 1954.85 (×1000), respectively in the year 2013. Forecasting of poultry population and production is one of the major important requirements to estimate production requirement and formulate appropriate strategies to meet future demands.

Keywords: Forecasting, Livestock, Poultry population, Production, Time series,