

ABSTRACT

In 2022, Indonesia's layer population decreased by 1.77%. This decline is concerning because laying hens play a vital role in meeting the community's nutritional needs. The El Niño phenomenon is expected to occur in June 2023, which could increase the mortality rate of chickens due to heatstress. Therefore, this study aims to use a Long Short Term Memory (LSTM) to predict the mortality rate of laying hens based on time series data and weather factors.

The research includes several stages: first, chicken mortality and weather data will be collected from September 2022 to December 2023. This data will then be processed through preprocessing, normalization, and splitting the data to training and testing LSTM models. The model with the optimal performance will be integrated into the Streamlit-based Growchick website application.

Analysis results show that an LSTM model with an epoch of 50, a batch size of 8, and a learning rate of 0.1 achieved a mean absolute error (MAE) of 3.33 and a mean absolute percentage error (MAPE) of 10.10%, with 89.90% accuracy. This study demonstrates that the LSTM model can assist farmers in predicting the mortality rate of laying hens in response to weather changes, thereby mitigating the risk of chicken mortality and improving farm business decision-making.

Keywords: *Laying hens, Weather, Prediction, Time-series data, LSTM*