

ABSTRACT

Avian Influenza is a disease that caused by H5N1 virus. Avian Influenza's case is first reported in Indonesia in 2003. At that time, Avian Influenza was endemic among poultry in some areas in Indonesia. Millions of poultry died because of this disease. The factors of AI disease are vary such as poor poultry's metabolism, environment, and bad biosecurity control

This final project is modelling and simulating spread of AI disease in an area that has the goal to design the right model that fits in to the spread of Avian Influenza disease using Cellular Automata to visualize based on the model that has been designed. Then, find the Infection Rate which is the percentage of infection in the simulated area using Threshold testing.

The method that used in this final project is Cellular Automata which is a discrete model, to support the CA method, the mathematical model is designed. The mathematical model is focusing on factors that cause AI disease in the simulated area. Then, comparing between two simulation to see the error rate, the difference of the Infection Rate of two simulation.

Keywords : Cellular Automata, Infection Rate, Avian Influenza, Spread of Disease, Threshold