

ABSTRACT

Population density that occurs in the earth is yet resolved. Human growth runs proportional with the growth of the building or house. This causes many green open spaces transformed to be house, buildings or shopping centers. In big cities such as Jakarta, Surabaya, Medan and Bandung green spaces was reduced from 35% in 1970 to 10% at present.^[1] The reduced green open spaces also lead a lack of arable land for farmers. Despite this already get a real solution in the form of hydroponics, but its implementation is still less effective.

In hydroponics, water which dont have nutrient must be able to replace the role of soil that naturally have own nutrient. The addition of nutrients into the water in the Hydroponic NFT (Nutrient Film Technique) is usually done manually with a measurement of uncertainty time. It can be developed to automate the control of nutrients in hydroponic NFT. The pH value will be measured using a pH meter sensor. The system will process the results in order to set the time of opening of solenoid valve which contains nutrients or water that flow into the tank on Hydroponic NFT by using fuzzy logic method. After that the solenoid valve will return to normally closed state.

The final results in this system is the nutrients which flowing in hydroponic can be controlled by measuring the pH value. By using a comparison between HNO_3 and A & B Mix Nutrition each 1: 4. In 1 liter of nutrients containing 200 mL and 800 mL A & B Mix Nutrition. In addition, the measurements produced by this tool is 95% reliable based on the results of F-Test and T-Test.

Keywords: Hydroponic NFT, pH meter sensor, Solenoid Valve, fuzzy logic.