ABSTRACT

Limited land space makes soils for farming became smaller, squeezed by land used for housing, trading and industry, it could be seen by the population growth that has not been taken care of. This has been the main problem that hamper farming activites, especially for horticulture plants specifically vegetables. The reduction of planting lands caused household farming bussinesses in Indonesia in the year of 2003-2013 declined from 16.937.617 to 10.602.147 according to Statistical Center Body [1]. While interest on vegetables for example mustard increased by 9.2% from 2011 until 2016 in Indonesia [2]. This problem actually could be solved by Hydroponic, but its practice is still ineffective.

In hydroponic, water that is used as its media should contain nutrients that is needed by plants. The adding of nutrition on NFT hydroponic usually done manually with uncertain checking. *Electrical Conductivity* (EC) value is the used unit of measure that is contained in the water will be measured by EC sensor. System will control *Solenoid Valve* open time that flow AB mix nutrients or water into the NFT hydroponic bucket using PID method. After that *Solenoid Valve* will return to its normal or closed state.

The final result of this system is the control of nutrients flow on the hydroponic by measuring the EC value. By using A&B mix with 3,3 mS/cm. after that, produced measurement is believed to reach 95% by using T-Test anad F-Test. Also the effect of *Electrical conductivity* towards Pakcoi plants produce different results viewed from the number of leaves, length of roots and length of plant.

Keywords: Hydroponic NFT, EC meter sensor, Solenoid Valve, PID.