

ABSTRAK

Planting is an activity that is often found in Indonesian society. Hydroponics is a method of planting plants that use water without using soil media as a planting medium. The water used consists of a mixture of nutrients that are useful to help the process of plant growth. Besides water, another parameter involved in growing crops using hydroponics is the temperature that is useful in the process of photosynthesis, respiration in plants. High temperatures can damage the process of plants in contrast also low temperatures make plants wither quickly. One of the most commonly used hydroponic types is the NFT hydroponic type.

*The types of plants that are cultivated using hydroponics are pakcoy plants (*Brassica Rapa L*). Pakcoy plants grow well in the temperature range 19-21 \ degc. Pakcoy cultivation is still using conventional methods so that farmers often find it difficult to control the temperature of the plant every time. To overcome this, an automatic maintenance system was made in agriculture using a hydroponic method based on the Arduino Uno AVR ATmega 328 microcontroller using fuzzy logic. The application of fuzzy logic in automatic temperature control in a hydroponic cropping suitable pattern by converting and measuring temperature with the help of the DHT sensor 22. The transferred signal will be conditioned in the form of a digital signal and brought into the microcontroller using the fuzzy logic rules. In this system is maintained to fit the needs of pakchoy plants. If so, in the form of an analog signal that will activate the cooler and heater according to changes in temperature of the greenhouse so that the temperature can return to its set point. Later on from making this system will be analyzed the effect of temperature on the growth of pakcoy plant cultivation in hydroponics.*

Keywords : NFT Hydroponics, Pakcoy (*Brassica Rapa L*), Arduino Uno AT mega 328, Microcontroller, Fuzzy Logic, Sensor DHT 22, Greenhouse