

## **ABSTRACT**

*Aeroponic farming system is an agricultural system that use air as a substitute for the soil where root grow. In this study, an instrument has been made to conditioning the temperature of root growing room by using Arduino. The system is designed to be able to monitor the temperature changes and distribute nutrients by using pump through a nozzle. Besides, the system also distributes cold water to decrease the temperature of the root growing room. In this study, potato is chosen as an object of study since it can be an alternative for primary food and its production is still low. As comparison, also an aeroponic system without temperature conditioning was also made. The conditioned temperature in the root growing room has average temperature of  $(21.35 \pm 2.63)$  °C, an average height of plants is  $(12.75 \pm 1.57)$  cm, and the number of tubers are 185 tubers with the average 17 tubers/plant. The unconditioned root growing room of plant without using temperature conditioning has an average temperature of  $(23.09 \pm 3.31)$  °C, an average height of plants of  $(98.38 \pm 1.50)$  cm, and the number of tubers are 168 tubers with the average 8 tubers/plant.*

*Keywords: aeroponic system, potato, seed, temperature*