

## **ABSTRACT**

### **DESIGN OF EBB AND FLOW HYDROPONICS SYSTEM FOR BABY KAILAN (*Brassica oleracea*) WITH COCOPEAT AS GROWING MEDIA**

**By**

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Ebb and flow hydroponics system generally has little quantity of plants and expensive construction cost. The purpose of this research was to design an ebb and flow hydroponics system with many quantity of plants but low in manufacturing cost and to test its performance. This research was conducted at the Laboratory of Agricultural Engineering, Agricultural Engineering Department, University of Lampung. The research procedures included several stages : design, assembly, testing, observation and data analysis. The ebb and flow hydroponics system was designed with the spesification of 200 cm length, 150 cm width, and 285 cm height and equipped with multi-span roof and screen wall. The planting tray has 13 furrows with 200 cm length, 15 cm width and 15 cm depth and 9 holes of planting aech row, so there are 117 plants on the tray. The manufacturing cost of ebb and flow hydroponics system was lower than hydroponics kits available in market. The obsevation showed that temperature inside greenhouse was lower than outside with a difference of 1,58 °C. Humidity inside greenhouse was higher than outside with a difference of 4,3%. Cultivation testing using baby kailan with cocopeat as growing media resulted in fresh weight 35,75 gram each plant harvested.

Key words : design, ebb and flow hydroponics system, baby kailan, cocopeat and growing media.