

## **RINGKASAN**

**Modification of Lettuce Nutrition Solution Delivery System with verticulture technique**, Ardhika Aga Chandra, NIM B31170813, 2022, 45 pages, Jember State Polytechnic, Rizza Wijaya, S.TP, M.Sc (Advisor).

Vertical hydroponics (verticulture) is a hydroponic farming system that is carried out vertically. Cultivated plants are arranged in a stratified model from bottom to top. Through this technique, about 30 plants can be cultivated on an area of only about 50 x 50 cm. To design a hydroponic device previously by Ivan (2019) had several weaknesses, including the provision of a nutrient solution that was not uniform from the first tower to the last due to the inefficient dimensions of the tool. Therefore, the purpose of the research is to design and test the performance and determine the efficiency of the tools that provide nutrients to plants vertically that have been developed. The manufacture of lettuce plant nutrition tools vertically was carried out from July to August 2021 at the Jember State Polytechnic TTA Lab. The parameters observed were uniform discharge value, quality of crop yields.

Modification of the tool provides a solution, it is hoped that vertical lettuce nutrition can maintain the nutritional needs of lettuce plants and can grow crops even in narrow areas. This modification of the vertical plant nutrition system has a length of 2.5 m, a height of 1.33 m, and the capacity of cultivated plants can reach 80 plants. This tool is also equipped with an artificial sprinkler that provides nutrients not only focused on one point but spreads in all directions to the plants that are in each tower in order to get an even distribution from the top to the bottom.

The test showed that the CU value obtained was 90.43% and the yield of lettuce plants with an average plant weight of 38.7 grams per plant, the total yield of plants was 3.2 kg of lettuce.