

SUMMARY

Temmy Diarahmon. 172354211006. THE EFFECT OF AB MIX NUTRITION CONCENTRATION AND LIQUID ORGANIC FERTILIZER (POC) AZOLLA (*Azolla pinnata*) ON THE GROWTH AND RESULTS OF RED SPINACH PLANTS ON HYDROPONIC FLOATING RAFT SYSTEMS Under the Supervision of Nanik Lutfiyah, S.Si., M.Si. as the main Supervisor and Agus Fahmi, S.P., M.Si. as member Supervisor

Every year the reduction in agricultural land is caused by the conversion of agricultural land to non-agricultural sectors, such as high-rise buildings, housing and other places. Meanwhile, horticultural production activities are required to be able to produce products that meet the 4 K requirements, namely quantity, quality, continuity and competitiveness. One alternative that can be used is hydroponic farming. Hydroponics generally means an agricultural cultivation system without using soil but using water containing nutrient solutions. Hydroponics has advantages, including the production of plants that are larger, of better quality and more guaranteed. One hydroponic system that can be used is floating raft hydroponics. The principle of this floating raft hydroponic system is that plants are grown while floating directly above the nutrient solution, usually with the help of styrofoam as support. In general, the nutrients used in hydroponic systems are AB mix and POC solutions, one of which is Poc *Azolla pinnata*.

This research aims to determine the effect of POC Azolla on the growth and yield of red spinach plants (*Amaranthus tricolor*) using a hydroponic floating raft system and the effect of AB Mix and POC Azolla concentrations on the growth and yield of red spinach plants (*Amaranthus tricolor*) using a hydroponic floating raft system. The method used is one factor RAL with 5 repetitions. The treatment factor consists of 5 levels of adding AB mix concentration and POC Azolla consisting of 6 levels, namely P0: 0% (without adding POC and AB Mix); P1: POC 100% (40 ml); P2: AB Mix 100% (40 ml); P3: POC 50% (20 ml) + AB Mix 50% (20 ml); P4: POC 75% (30 ml) + AB Mix 25% (10 ml); P5: POC 25% (10 ml) + AB Mix 75% (30 ml).

The plant height parameter P5 tends to give the best results in terms of plant growth in the various time periods observed, at 28 HST it shows 27.30 cm. The leaf number parameter P5 gave the best results where at 21 and 28 HST showed significant results compared to other treatments. The root length parameter P5 gave more significant results compared to other treatments where at 14, 21 and 28 HST the root length of red spinach was 16.89; 29.92 and 35.33. The leaf area parameter shows that P5 has a good effect where at 28 HST the leaf area produced is 105.51 cm². In the wet weight parameter P5 has a more optimal result, namely 28.10 grams. In the dry weight parameter, P5 has more optimal results, namely 5.69 grams.

So it can be concluded that Azolla POC cannot be used as primary fertilizer, so that giving Azolla POC alone cannot stimulate optimal growth of red spinach. P1, P3, and P4 in the parameters of plant height, number of leaves, root length, leaf area, wet weight, dry weight of plants did not show optimal results compared to P1

and P5 which had high AB Mix concentrations. And the combination of AB Mix Fertilizer and Azolla pinnata POC has an effect on the growth and yield of red spinach plants in floating raft hydroponic cultivation. The best concentration for the parameters of plant height, number of leaves, root length, leaf area, wet weight, dry weight of the plant is AB Mix 75% and POC Azolla pinnata 25



