

ABSTRAK

SUBSTITUSI PARSIAL NUTRISI AB MIX DENGAN POC BERTEKNOLOGI NANO DAN *ECO ENZYME* TERHADAP PERTUMBUHAN SAWI (*Brassica juncea* L.) PADA SISTEM HIDROPONIK NFT

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Sistem budidaya secara hidroponik dikenal sebagai sistem bercocok tanam dengan memanfaatkan aliran nutrisi sebagai unsur hara utamanya. Pemanfaatan limbah organik untuk dijadikan pupuk organik cair (POC) dan *eco enzyme* mulai banyak dikembangkan sebagai alternatif dan pelengkap nutrisi pada budidaya dengan sistem hidroponik. Penggunaan POC teknologi nano dan *eco enzyme* dapat memberikan hara pada tanaman serta mencegah pengendapan larutan nutrisi sehingga meningkatkan efisiensi penggunaan pupuk anorganik. Penelitian ini dilaksanakan di Kebun Lapang, Kelurahan Kota Sepang Jaya, Kecamatan Labuhan Ratu, Kota Bandar Lampung. Rancangan yang digunakan adalah Rancangan Acak Lengkap (RAL) dengan 4 perlakuan nutrisi. Perlakuan diulang sebanyak 6 kali ulangan sehingga diperoleh 24 satuan percobaan. Perlakuan terdiri atas 4 perlakuan, yaitu (P1): 100% AB Mix (Kontrol), (P2): 75% AB Mix + 2 ml/l *eco enzyme*, (P3): 75% AB Mix + 25% POC teknologi nano, (P4): 75% AB Mix + 25% POC teknologi nano + 2 ml/l *eco enzyme*. Berdasarkan hasil penelitian didapatkan bahwa substitusi parsial POC teknologi nano dan *eco enzyme* mampu meningkatkan pertumbuhan dan hasil tanaman sawi pada sistem hidroponik NFT yang ditunjukkan oleh perlakuan P4 yaitu 25% POC teknologi nano dan *eco enzyme* dengan 75% AB Mix meningkatkan secara nyata pada variabel pengamatan tinggi tanaman, lebar daun, panjang daun, berat segar tanaman, dan panjang akar.

Kata Kunci: Sawi hijau, nutrisi AB Mix, teknologi nano, pupuk organik cair limbah udang, *eco enzyme* kulit nanas, hidroponik NFT

ABSTRACT

PARTIAL SUBSTITUTION OF AB MIX NUTRIENTS WITH NANOTECHNOLOGY POC AND ECO ENZYME ON THE GROWTH OF MUSTARD (*Brassica juncea* L.) IN THE NFT HYDROPONIC SYSTEM

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The hydroponic cultivation system are known as farming system that utilize nutrient flow as their primary nutrient. The use of organic waste to produce liquid organic fertilizer and eco enzyme is increasingly being developed as an alternative and nutritional supplement in hydroponic cultivation systems. The use of nano-technology liquid organic fertilizer and eco enzymes can provide nutrients to plants and prevent sedimentation of the nutrient solution, thereby increasing the efficiency of inorganic fertilizer use. This research was conducted at the Field Garden, Kota Sepang Jaya Village, Labuhan Ratu District, Bandar Lampung City. The design used was a Completely Randomized Design (CRD) with four nutrient treatments. The treatments were replicated six times, resulting in 24 experimental units. The treatments consisted of four treatment: (P1): 100% AB Mix (Control), (P2): 75% AB Mix + 2 ml/l eco enzyme, (P3): 75% AB Mix + 25% Nano Technology Organic Fertilizer (POC), and (P4): 75% AB Mix + 25% Nano Technology Organic Fertilizer (POC) + 2 ml/l eco enzyme. The results showed that partial substitution of POC nanotechnology and eco enzyme increased the growth and yield of mustard greens in the NFT hydroponic system. The results showed that the P4 treatment, which included 25% Nano Technology Organic Fertilizer and eco enzyme, combined with 75% AB Mix had better results, namely in the observation variables of plant height, leaf width, leaf length, plant fresh weight, and root length.

Keywords: Mustard, AB Mix nutrients, nanotechnology, liquid organic fertilizer, eco enzyme, NFT hydroponics