

**UJI KUALITAS PUPUK ORGANIK CAIR BONGGOL PISANG, URINE SAPI DAN LIMBAH TAHU CAIR DAN PENGARUHNYA TERHADAP PERTUMBUHAN TANAMAN JAGUNG MANIS (*Zea mays saccharata*) YANG DIPERLAKUKAN DENGAN NPK**

Oleh : Ambar Kusumaning Ayu

Dibimbing oleh :

Dr. Ir. Yanisworo WR, MSi, dan Ir. Didi Saidi, MSi,

**ABSTRAK**

Pupuk Organik Cair (POC) adalah larutan yang berisi berbagai zat yang dibutuhkan oleh pertumbuhan tanaman yang merupakan hasil fermentasi bahan organik yang berasal sisa tanaman dan kotoran hewan. Penelitian ini bertujuan untuk mengetahui sifat kimia, IAA dan mikroba POC terhadap kualitas serta mengetahui pengaruh aplikasi POC dengan NPK terhadap pertumbuhan tanaman jagung manis (*Zea mays saccharata*). Penelitian dilakukan dalam 2 tahap. Tahap pertama pembuatan POC dari bonggol pisang, urine sapi dan limbah tahu cair. Tahap kedua aplikasi POC disertai NPK pada tanaman. Penelitian dilakukan menggunakan Rancangan Acak Lengkap (RAL) 2 faktor yaitu jenis POC bonggol pisang ( $C_4$ ), urine sapi ( $C_5$ ), limbah tahu cair ( $C_6$ ) dan tanpa POC ( $C_0$ ) serta dosis pemupukan NPK 50% rekomendasi ( $P_1$ ), NPK 100% rekomendasi ( $P_2$ ) dan tanpa NPK ( $P_0$ ). Parameter penelitian ini meliputi C-organik, N-total, C/N, P-tersedia, K-tersedia, IAA, pH, total mikrobial dan pelarut fosfat serta berupa tinggi, berat basah dan berat kering tanaman. Data dianalisis dengan sidik ragam, apabila menunjukkan pengaruh nyata diuji lanjut menggunakan uji Duncan (DMRT). Hasil penelitian menunjukkan bahwa N-total, K-tersedia  $C_5$ , K-tersedia  $C_4$  dan pH ketiga POC memenuhi SNI. C-organik dan P-tersedia ketiga POC tidak memenuhi SNI. Kadar IAA tertinggi pada  $C_5$ . Total mikrobial dan mikroba pelarut P tertinggi pada  $C_4$ . Tidak terdapat interaksi antara dosis NPK dengan aplikasi POC. Jenis POC maupun dosis NPK mempengaruhi tinggi, berat basah dan berat kering tanaman, nilai tertinggi terdapat pada  $C_5$  (tidak berbeda nyata dengan  $C_6$ ) serta aplikasi  $P_2$  (tidak berbeda nyata dengan  $P_1$ ). Analisis korelasi menunjukkan pertumbuhan tanaman jagung dipengaruhi N-total dan IAA.

Kata kunci : POC, bonggol pisang, urine sapi, limbah tahu cair, jagung manis

**QUALITY TEST OF LIQUID ORGANIC FERTILIZER OF BANANA WEEVIL, URINE OF COW AND TOFU LIQUID WASTE AND ITS EFFECT ON GROWTH OF SWEET CORN (*Zea mays saccharata*) THAT WAS TREATED WITH NPK**

By: Ambar Kusumaning Ayu

Supervised by :  
Dr. Ir. Yanisworo WR, MSi, and Ir. Didi Saidi, MSi,

**ABSTRACT**

Liquid Organic Fertilizer (LOF) is a solution containing various substances needed by plant growth which is the result of fermentation of organic material derived from plant residues and animal waste. This study aims to determine the chemical properties, IAA and LOF microbes on quality and determine the effect of LOF application with NPK on the growth of sweet corn (*Zea mays saccharata*). The study was conducted in 2 stages. The first stage is making LOF from banana weevil, cow urine and liquid tofu waste. The second stage of LOF application is accompanied by NPK in plants. The study was conducted using a completely randomized design (CRD) 2 factors, namely the type of LOF banana weevil (C<sub>4</sub>), cow urine (C<sub>5</sub>), liquid tofu waste (C<sub>6</sub>) and without LOF (C<sub>0</sub>) and 50% recommended NPK fertilizer dosage (P<sub>1</sub>), NPK 100% recommendations (P<sub>2</sub>) and without NPK (P<sub>0</sub>). The parameters of this study include C-organic, N-total, C/N, P-available, K-available, IAA, pH, total microbial and phosphate solvents as well as height, wet weight and dry weight of plants. Data were analyzed by analysis of variance, if it showed real influence, it was further tested using the Duncan test (DMRT). The results showed that N-total, K-available C<sub>5</sub>, K-available C<sub>4</sub> and the third pH of the LOF met SNI. C-organic and P-available three LOF do not meet SNI. The highest IAA level is at C<sub>5</sub>. The highest total of microbes and solvent P was C<sub>4</sub>. There is no interaction between NPK dose and LOF application. The type of LOF and NPK dosage affect plant height, wet weight and dry weight, the highest value is found in C<sub>5</sub> (not significantly different from C<sub>6</sub>) and P<sub>2</sub> application (not significantly different from P<sub>1</sub>). Correlation analysis shows the growth of corn plants is influenced by N-total and IAA

Keywords: LOF, banana weevil, urine of cow, tofu liquid waste, sweet corn