

**ANALYSIS OF NITROGEN PHOSPHOR POTASSIUM LEVELS
IN A MIXTURE OF ORGANIC FERTILIZER OF OIL PALM
EMPTY FRUIT BUNCHES (OPEFB) AND FLY ASH AND ITS
EFFECT ON SPINACH GROWTH (*Amaranthus tricolor L.*)**

ABSTRACT

Oil palm (*Elaeis guineensis* Jacq) was a plantation subsector that has an important role for Indonesia. The very high amount of oil palm production will produce a high amount of waste as well. One of them was OPEFB waste and fly ash, the waste which can be used as organic fertilizer. The purpose of this study was to determine the content of nitrogen, phosphorus, and potassium nutrients in the results of made organic fertilizer from OPEFB and fly ash and to see the effect of organic fertilizer on spinach growth. The process of made OPEFB organic fertilizer was fermented for 2 weeks and mixed with fly ash. Nitrogen, phosphor, potassium nutrients in OPEFB and fly ash organic fertilizers were analyzed used the khedjal method, UV-VIS spectrophotometer, and flame photometer. The content of nitrogen, phosphor, potassium, nutrients had different results in various treatment variations and the highest content was 0.33% of N, 2.22% of P, and 2.03% of K. The provision of OPEFB and fly ash organic fertilizers to spinach plants had a significant effect on plant mass of 10.66 g, plant height of 27.6 cm, leaf width of 8.7 cm, while the variable of many leaves did not had a significant effect on many spinach plant leaves.

Keywords: fly ash, OPEFB, organic fertilizer, spinach plant

**ANALISIS KADAR NPK PADA CAMPURAN PUPUK ORGANIK
TANDAN KOSONG KELAPA SAWIT (TKKS) DAN *FLY ASH*
SERTA PENGARUHNYA TERHADAP PERTUMBUHAN
BAYAM (*Amaranthus tricolor L.*)**

ABSTRAK

Tanaman kelapa sawit (*Elaeis guineensis* Jacq) merupakan subsektor perkebunan yang mempunyai peran penting bagi Indonesia. Jumlah produksi kelapa sawit yang sangat tinggi akan menghasilkan jumlah limbah yang tinggi juga. Salah satunya yaitu limbah TKKS dan *fly ash*, limbah ini dapat dimanfaatkan sebagai pupuk organik. Tujuan dari penelitian ini yaitu untuk mengetahui kandungan unsur hara nitrogen, fosfor, dan kalium pada hasil pembuatan pupuk organik TKKS dan *fly ash* serta melihat pengaruh pemberian pupuk organik terhadap pertumbuhan bayam. Proses pembuatan pupuk organik TKKS difermentasi selama 2 minggu dan dilakukan pencampuran dengan *fly ash*. Unsur hara NPK dalam pupuk organik TKKS dan *fly ash* di analisis menggunakan metode khedjal, spektrofotometer UV-VIS, dan flame fotometer. Kandungan unsur hara NPK memiliki hasil yang berbeda-beda pada berbagai variasi perlakuan dan kandungan tertinggi pada unsur hara N 0,33 %, P 2,22 %, dan K 2,03 %. Pemberian pupuk organik TKKS dan *fly ash* terhadap tanaman bayam memberikan pengaruh yang signifikan yaitu pada massa tanaman 10,66 gr, tinggi tanaman 27,6 cm, lebar daun 8,7 cm, sedangkan pada variabel banyak daun tidak memberikan pengaruh yang signifikan terhadap banyak daun tanaman bayam.

Kata kunci : *fly ash*, pupuk organik, tanaman bayam, TKKS