Pengaruh pemupukan bioconversion fertilizer palm kernel meal (BFPKM) terhadap pertumbuhan vigna unguiculata L. Walp (kacang panjang) varietas mutiara

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Abstrak

Today, Indonesia has the largest palm oil plantation in the world. Palm area in Indonesia, in 2008, according Ditjenbun, Department of Agriculture, estimated to reach 7 million ha (Ditjenbun Deptan 2009). Palm fruit produced by palm oil trees collected in bunches, therefore, often called as Fresh Fruit Bunches (FFB). FFBs are then transported to the factory for further process to produce palm oil. The main product of oil mill is Crude Palm Oil (CPO) and Palm Kernel Oil (PKO).

In 2008, about 90,5 ton FFB yielded 18,1 ton of CPO from the fruit (mesocarp) and 2,1 ton of PKO from the nut (palm kernel) (Naibaho 1998; Ditjenbun Deptan 2009; PPKS 2010). When the nut is processed, it yields PKO, Palm Kernel Meal (PKM), and shell. The PKM is the solid part remaining from palm kernel after the extraction of PKO by a mechanical screw pressing. From 90,5 ton of processed FFB can produce about 2,5 ton of PKM. The number of this by-product always be increased due to the growth of the oil palm industry in Indonesia.

Institut de Recherche pour le Développement (IRD) has done researches about the application of palm oil industry waste (PKM) as fish feed through bioconversion process using maggot. Maggot is Hermetia illucens L. larvae that has the ability to convert organic material (PKM) into it's biomass. Maggot biomass has then been used to feed fish (Hem et al 2008b). This bioconversion process of PKM using maggot produced waste, which is called Bioconversion Fertilizer Palm Kernel Meal (BFPKM). The aim of this study is to know the effect of BFPKM, as organic fertilizer, to Vigna unguiculata L. Walp (yardlong bean) var. mutiara. The study was held in Balai Riset Ikan Hias and IRD laboratorium Depok, on July until October 2008.

This research is an experimental study using a randomized complete design. The parameters observed including the growth of stems, leaves, flowers, pods and roots, between the plants cultivated with BFPKM and without BFPKM.

The result shows that BFPKM as organic fertilizer tend to gave a positive effect on the growth of stem, leaf, flower and pod. BFPKM also seem to stimulate the formulation of new branches and make earlier formation of flower. Inside underground, BFPKM tend to show indication to stimulate the growth of the root faster and more branching. Well root development could give more nutritions supply to whole of plant. It was showed by this study. BFPKM supplies nitrogen, phospor, and potassium for plant's growth. That nutriens are needed by plant to grow. So, this study shows that BFPKM can be applied as organic fertilizer that seem to give effect in the growth of yardlong bean.