

Effect of Superabsorbent Polymer Composite Filled Carbon Fiber Towards the Germination of *Abelmoschus Esculentus*

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ABSTRACT

As agriculture activities are becoming major sector that contribute a lot of income to Malaysian economy, the sustainability of the soil and environment need to maintain to ensure the soil fertility is not affected by this growing sector. The application of superabsorbent polymer filled carbon fiber on agriculture will ensure the feasibility of the biodegradable composite thus maintain the soil fertility. Superabsorbent polymer filled 0.5 and 0.1 weight percent of carbon filler applied to soil to study how it affects the plant growth of okra. After 21 days of plantation, the okras germinated from the soil mixed with the SAP were higher from the control. It shows that the addition of SAP with or without carbon filler contributes positive effect to the soil environment. Trend of plant grow taken after 7th and 14th days of plantation shows that the additional function of carbon to improve the physical properties of soil (soil conditioner), other than the organic filler to increase the biodegradability of SAP. In conclusion, superabsorbent polymer filled carbon fiber will help to improve the quality of the soil and help to fertilize the okras growth.

KEYWORDS: superabsorbent polymer, carbon filler, *abelmoschus esculentus*

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