Thesis Title Polystyrene Foam Utilization as a Catalytic Agent in Composting Process From Water Hyacinth

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ABSTRACT

The study of the polystyrene foam as the catalytic agent in composting process of water hyacinth aims to observe the potentiability of this kind of foam by means of comparative study on duration between using foam and none foam as the component in the process. Also, the suitable volume and size of foam are observed. In the experiment, water hyacinth is dried for 15 days in order to control giving the moisture content to be 10-15%. It is mixed with foam with the diameter of 0.5, 1 and 2 centimeter. The volume of foam is varied among 5%, 10% and 20% by weight, mixed in the fertilizer case of 1 x 1.5 x 0.8 cubicmeter for each treatment. This observation trial covers 11 treatment. Chemical and physical component are analyzed. It's found that the change of nitrogen, phosporus and organic carbon in the mixed water hyacinth and foam is significantly faster than those without foam in composing process. With regard to

C/N ratio at 20 : 1 all treatments of mixed water hyacinth with foam are completed at the 14 days, while the treatments of those without foam content take 30 days, much longer than those mixed with foam. In addition, the foam size of 1 centimeter at 5% level of content can support the decomposition of water hyacinth faster than other treatments in terms of NPK and C/N ratio change.