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10%(w/w) zeolite .

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SUMMARY

I. Title

“Production of high quality compost at short period of time and reduction of odor during composting period”

II. Objectives and Importance

Residences near the Yong-in fertilizer often complains about the high odor emission during composting. Another problem being encountered by the factory is on how to make a high quality compost in a short period of time. The aim of this study is to determine the optimum conditions in increasing the quality of compost in a short period of time using different chemical and other amendments. A part of this study also deals with the determination of the best chemical amendments in reducing the odor emission.

III. Research scope

Properties of Yong-in Fertilizer Factory compost product.

Compost samples from Yong-in fertilizer factory were obtained and analyzed for different chemical and physical properties to assess the problems recently encountered.

To determine the effect of inoculum that is currently used by Yong-in fertilizer factory in the compost product.

To determine the effect of addition of dry sludge and mature compost.

To determine the effect of adding chemical amendments in reducing ammonia emission.

Determine the optimum concentration of alum, phosphoric acid, and zeolite in reducing the ammonia emission.

IV. Results

Addition of microorganisms provided by Yong-in fertilizer factory in the compost resulted in higher emission of ammonia. Furthermore, longer period is needed to reach the thermophilic phase. On the other hand addition of dry sludge on the compost, results in shorter period in reaching thermophilic phase. It also enhances microbial activity as supported by the fact that carbon dioxide emission was also increased. Regarding the addition alum and phosphoric acid it was observed that application of 0.625% alum reduces the ammonia emission. Zeolite can also reduce the emission of ammonia. Application of 10% (w/w) zeolite effectively reduces the volatilized ammonia.

VI. Application plan

By having short composting period, more manure can be processed. This would yield more high quality compost and thus increase the efficiency of the process.

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