Poultry manure as substitute for urea in bio composting of coir pith

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Abstract

Coir pith is produced in enormous quantities as a byproduct of coir fibre extraction industries has very high lignin content causes slow decomposition and there by posing environmental hazard and disposal problems. Composting of coir pith is one of the best methods to convert this agriculture waste into wealth. Biodegradation reduce the wider C: N ratio and helps to enhance the level of NPK and manurial value of pith. Conventionally coir pith composting is carried out by using technology with edible mushroom fungi Pleurotus sajor- caju and urea which takes 45-60 day for complete composting. This study uses two different fungi vis:Trichoderma harzianum and Phanerochaetum crysosporium in different treatment combinations using poultry manure as nitrogen source. The existing technology of composting uses urea as important nitrogen provider. This study targeted to replace the inorganic urea with organic nitrogen source like poultry manure. Among the 3 fungi tested Trichoderma harzianum showed significant reduction in C: N ratio in less than 35 days followed by Phanerochaetum crysosporium and Pleurotus sajor- caju. The C:N ratio reduction after coir pith composting produced by different fungi after 35 days of composting are Trichoderma harzianum (20:1), Phanerochaetum crysosporium(38:1), and Pleurotus sajor- caju (40:34). All three treatments showed increase in NPK values compared to raw

pith. Thus Coir pith can be composted effectively and organically by using Trichoderma harzianum with poultry manure as nitrogen source.

Keywords: Coir pith, NPK content, C:N ratio