



كلية الزراعة
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عنوان البحث

ABSTRACT

Effect of inoculation with *Phanerochaete chrysosporium* and *Azotobacter chroococcum* microbes on cotton stalks composting was studied in an attempt to achieve rapid maturity and desirable characteristics of produced compost. Composting process was maintained for 16 weeks under aerobic conditions with proper moisture content and turning piles. The C/N ratio of the mixtures was adjusted to about 30:1 before composting using chicken manure. Temperature evolution and its profile were monitored throughout the composting period. Mineralization rates of organic matter and changes in nitrogen content during composting stages were evaluated. Total plate counts of mesophilic and thermophilic bacteria, cellulose decomposers and *Azotobacter* were determined during composting periods. The treatment of cotton stalks inoculated with both *P. chrysosporium* and *Azotobacter* gave the most desirable characteristics of the final product with respect to narrow C/N ratio, high nitrogen content and high numbers of *Azotobacter*. The phytotoxicity test of compost extracts was evaluated. The use of *P. chrysosporium* in composting accelerated markedly decomposition process, so that 16 weeks composting enough to produce a stable and mature compost suitable for use as fertilizer while the fertilizer obtained by composting cotton stalks mixed with chicken manure and inoculated with microorganisms is highest quality Compost .