

Accelerated Composting of Coffee Processing Byproducts: an Organic Option for Soil Fertility Management in the Coffee Based Cropping System of Southwestern Ethiopia

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SUMMARY

Southwestern Ethiopia is one of the biggest coffee producing regions of the country. A large volume of coffee processing byproducts, mainly coffee pulp and husk, is generated annually from wet coffee processing stations in the region. Increasing environmental concerns and interest in organic coffee production demanded the utilization of such by-products as an alternative source of plant nutrients. This experiment was conducted to address both environmental concerns and organic coffee practice by transforming such by-products into nutritionally balanced compost for use by coffee growers in the region. Two easily and cheaply available organic residues, farmyard manure and leguminous plant materials, were therefore combined in different proportions with coffee pulp and husk. The stabilization period and quality of coffee pulp and husk composts were finally evaluated using standard parameters. Piles of six cubic meters were prepared and monitored regularly. The piles were aerated manually once a week. Compost heaps with organic amendments exhibited longer thermophilic phase and lower C/N ratio, as compared to the control pile containing only coffee pulp or husk. In both coffee pulp and husk composts, piles that contained organic amendments were found better in terms of maturity time and final quality. Therefore, based on the results of this experiment, using organic amendments during coffee byproduct composting is recommended as it shortens the maturity time and improves final quality of the compost produced.