

Compost Quality and Economic Viability of Five Biowaste Composting Ventures in Metro Manila

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The compost quality and economic viability of five urban biowaste composting ventures in Metro Manila, Philippines were studied. The study sites which were chosen to represent the composting of biodegradable waste collected from the market, household and school included: a) the Pasig City Market; b) Barangay (Bgy) Holy Spirit, Quezon City; c) Bgy. Concepcion Uno, Marikina City; d) Bgy. 169, Caloocan City; and e) Peref Woodrose School, Inc., Muntinlupa City.

Compost from Bgy 169 passed the Fertilizer and Pesticide Authority (FPA) standard for compost or soil conditioner. Chemical analyses showed that the compost had a C:N ratio of 21 and contained 39% organic matter, 1.08% total N, 0.81% P as P_2O_5 and 1.58% K as K_2O . It was free of pathogenic coliforms and had no traces of the toxic metals Pb and Cd. Its Zn content was 103.67 ppm, way below the allowable limit of 1000 ppm. However, the other four composting ventures had poor compost quality with a C:N ratio of over 40 but the composts were also relatively free of pathogenic coliforms and the toxic metals Pb and Cd.

Financial analysis showed that the direct costs of producing compost ranged from PhP1,515–PhP13,654 per ton, which were greater than the income or value from the compost produced. This could be due to the relatively low price of the product because of its poor quality. Composting entailed a financial gap that ranged from PhP 551–PhP10,946 per ton, which must be bridged from other sources, if not subsidized by the local government. However, if indirect benefits such as the value of savings from avoided landfill and collection costs are considered, the composting activities are economically or socially beneficial due to positive economic gains.

Key Words: biowaste, C:N ratio, composting, solid waste management, toxic metals

Abbreviations: Bgy – barangay, FPA – Fertilizer and Pesticide Authority, LGU – local government unit, MRF – materials recovery facility, MSW – municipal solid waste, NGO – nongovernment organization, RA 9003 – Republic Act 9003, SWM – solid waste management

INTRODUCTION

Biodegradable waste or biowaste constitutes more than 50% of the total municipal solid wastes collected by local government units (LGUs) in the Philippines. In highly populated urban areas, this collection can amount to hundreds of tons daily. The most common waste disposal practice in the past several decades was open dumping or disposal in landfills, which has resulted in serious environmental prob-

lems. In 2000, the Philippine Congress passed Republic Act (RA) 9003, the Ecological Solid Waste Management Act, which requires LGUs to convert 25% of their municipal wastes into recycled products and composts in a span of 5 yr upon implementation of the law. Composting activity by local communities under the auspices of the municipal governments or through the initiatives of civic or nongovernment organizations (NGOs) offers an alternative