

Widialip, N. F., 2020. Pengolahan *Spent Coffee Ground* (SCGs) Menjadi Pupuk Organik Sebagai Implementasi *Recycle* Limbah Padat Industri Kopi Untuk Menunjang *Urban Farming*. Skripsi ini dibawah bimbingan Nita Citrasari, S.Si., M.T. dan Dr. Sucipto Hariyanto, DEA. Program Studi S1 Teknik Lingkungan, Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga.

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### ABSTRAK

Penelitian ini bertujuan untuk mengetahui kualitas pupuk organik hasil *recycle* SCGs dan tumpi kopi yang mampu menunjang *urban farming*. *Spent Coffee Ground* (SCGs) dan tumpi kopi dipilih karena karakteristiknya sudah memenuhi spesifikasi untuk dimanfaatkan sebagai bahan baku pembuatan pupuk organik. Lima variasi komposisi yang digunakan adalah 3 kg SCGs + 2 kg tumpi kopi (K<sub>1</sub>); 3,5 kg SCGs + 1,5 kg tumpi kopi (K<sub>2</sub>); 4 kg SCGs + 1 kg tumpi kopi (K<sub>3</sub>); 4,5 kg SCGs + 0,5 kg tumpi kopi (K<sub>4</sub>); dan 4,6 kg SCGs + 0,4 kg tumpi kopi (K<sub>5</sub>). Pupuk organik dibuat dengan metode *co-composting* menggunakan bakteri dekomposer *Effective Microorganism-4* (EM4) dengan durasi waktu pembuatan 30 hari. Metode uji dan standar nilai kualitas, meliputi nilai kadar air, pH, C-organik, C/N rasio, N, P, K, serta pertumbuhan tinggi tanaman, percabangan, dan kecepatan berbunga tanaman tomat. Pupuk organik dengan komposisi terbaik berdasarkan Keputusan Menteri Pertanian Republik Indonesia Nomor 261 Tahun 2019 adalah K<sub>5</sub> dan pupuk organik dengan komposisi terbaik berdasarkan pertumbuhan tanaman tomat adalah K<sub>1</sub> sehingga pupuk organik pada perlakuan K<sub>1</sub> dan K<sub>5</sub> berpotensi untuk *me-recycle* limbah SCGs dan tumpi kopi. Pupuk organik pada penelitian ini mampu menunjang *urban farming*.

**Kata kunci:** pupuk organik, *recycle*, *Spent Coffee Ground* (SCGs), tumpi kopi, *urban farming*.

Widialip, N. F., 2020. The Process of Spent Coffee Ground (SCGs) into Organic Fertilizer as an Implementation of Recycling Solid Waste from Coffee Industry in order to Support Urban Farming. This script was supervised by Nita Citrasari, S.Si., M.T. and Dr. Sucipto Hariyanto, DEA. Study Program of Environmental Engineering, Departement of Biology, Faculty of Science and Technology, Universitas Airlangga.

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### ABSTRACT

This study aimed to determine the quality of organic fertilizer produced from recycling Spent Coffee Ground (SCGs) and coffee husk that could support urban farming. The writer decided conducted this research based on the characteristics of SCGs and coffee husk that fulfilled the qualification as raw material in producing organic fertilizer. The variations of compositions applied in this researched were  $K_1 = 3$  kilogram of SCGs + 2 kilogram of coffee husk;  $K_2 = 3,5$  kilogram of SCGs + 1,5 kilogram of coffee husk;  $K_3 = 4$  kilogram of SCGs + 1 kilogram of coffee husk;  $K_4 = 4,5$  kilogram of SCGs + 0,5 kilogram of coffee husk; and  $K_5 = 4,6$  kilograms of SCGs + 0,4 kilogram of coffee husk. Organic fertilizer was produced using the method of co-composing decomposing bacteria Effective Microorganism (EM4) within 30 days. The test methods and standard quality values included the value of water content, pH, C-organic, C/N ratio, N, P, K, as well as plant height growth, branching, and flowering rate of tomato plants. As the result, variation  $K_5$  showed the best result for organic fertilizer composition used in this research based on Indonesian Ministry of Agriculture regulation Number 261 of 2019, while organic fertilizer composition in tomatoes plants was best shown in variation  $K_1$ . Therefore composition  $K_1$  and  $K_5$  were potentially effective in recycling SCGs and coffee husk. Thus, organic fertilizer in this research could support urban farming.

**Keywords:** coffee husk, organic fertilizer, recycle, Spent Coffee Ground (SCGs), urban farming.