Pengaruh variasi C/N rasio (sampah) terhadap kualitas kompos dan lama proses pengomposan, pada pengolahan sampah organik di PT. Bumi Serpong Damai, Jawa Barat 1996

Nainggolan, Roy Charles, author

Abstrak

ABSTRAK
Pengolahan sampah organik, dapat berjalan dengan baik apabila sampah tersebut mempunyai kadar air dan komponen organik besar. Karakteristik sampah di kawasan PT. Bumi Serpong Damai yang terbanyak adalah sampah organik, yaitu mencapai 80 % dari seluruh sampah yang dihasilkan.

Dengan adanya pengolahan sampah organik sistem composting di PT. Bumi Serpong Damai, maka sampah-sampah yang seharusnya di buang ke tempat pembuangan akhir (TPA) dapat dimanfaatkan kembali untuk dijadikan kompos.

Penelitian ini bertujuan untuk mengetahui perbandingan nilai C/N rasio dalam sampah organik dan proses pengomposan yang optimal agar proses pengomposan dapat berjalan dengan baik serta kompos yang dihasilkan mengandung unsur hara yang besar.

Bahan yang digunakan dalam penelitian ini adalah sampah organik yang ada di kawasan Bumi Serpong Damai, dengan perlakuan sebagai berikut : sampah organik C/N.rasio maksimal (> 20-40 : 1) dengan terowongan bambu (PSO.BSD-1), sampah organik C/N rasio optimal (20-40 : 1) dengan terowongan bambu (PSO.BSD-2), sampah organik C/N rasio minimal (< 20-40 : 1) dengan terowongan bambu (PSO.BSD-3), sampah organik C/N rasio maksimai (> 20-40 1) tanpa terowongan bambu (PSO.BSD-4), sampah organik C/N rasio optimal (20-40 : 1) tanpa terowongan bambu (PSO.BSD-5), sampah organik C/N rasio minimal (< 20--40 : 1) tanpa terowongan bambu (PSO.BSD-6). Kemudian diulang sebanyak lima kali.

Sampah organik yang telah berubah menjadi kompos, berwarna kehitaman setelah mengalami pembusukan secara aerob sulit dikenali lagi dari bahan asal dan terjadi perubahan sifat kimianya.

Komposisi sampah organik (perbandingan C/N rasio) berpengaruh positif dengan lama proses pengomposan dan kandungan unsur hara dalam kompos (N, P, K, Ca, Mg, C, C/N). Sedang proses pengomposan berpengaruh negatif dengan lama proses pengomposan.

Kandungan logam berat dalam kompos menunjukkan bahwa pada semua perlakuan menghasilkan kompos yang mengandung logam berat jauh di bawah standar US Environmental Protection Agency (EPA).

Menerapkan pengolahan sampah organik dengan sistem komposting dengan bahan baku yang mempunyai perbandingan C/N rasio optimal (sampah buah-buahan), di PT. Bumi Serpong Damai.

ABSTRACT
The Effect of Organic Waste Variation C/N Ratio by This organic processing plant runs well only when the waste contains water and main organic component. The organic waste at PT. Bumi Serpong Damai reaches as high as 80 percent of the total garbage.

With the existence of this compost system organic waste processing plant, PT. Bumi Serpong Damai can recycle the organic waste and make use of the resulted compost. And such an advantage prevents the waste from being disposed at the final garbage dump.

Specific study had been conducted to figure out the C/N ratio contained in the organic waste and in the optimal compost process so that the compost process ran in order and the compost had sufficient fertile substances.

The raw material used in such a specific study was the organic waste found at PT. Bumi Serpong Damai. This organic waste had certain characteristics and went through the following treatment : organic waste having maximum C/N ratio of being > 20 - 40 : 1 with bamboo tunnel (PSO.BSD-1), organic waste having optimum C/N ratio of being 20 - 40 : 1 with bamboo tunnel (PSO.BSD-2), organic waste having minimum C/N ratio of being < 20 - 40 : 1 with bamboo tunnel (PSO.BSD-3), organic waste having maximum C/N ratio of being > 20 - 40 : 1 without bamboo tunnel (PSO.BSD-4), organic waste having optimum C/N ratio of being 20 - 40 : 1 without bamboo tunnel (PSO.BSD-5), organic waste having minimum C/N ratio of being c 20 - 40 : 1 without bamboo tunnel (PSO.BSD-B). This treatment is subject to a five-time repetition.

The resulted compost has dark and blackish color after going through the decaying process and its origin becomes unidentifiable, due to the chemical characteristic changes.

Organic waste composition, or the C/N ratio, influences the length of the compost process and the fertile substances contained in the resulted compost such as N, P, K, Ca, Mg, c, and C/N. On the other hand, the compost process negatively affects its length.

The treatment applied in the processing plant has produced compost in which the amount of heavy metal substances contained in the compost is lower than the EPA standard.

The use of compost system organic waste processing plant with raw material of having optimum C/N ratio (disposed fruits) at PT. Bumi Serpong Damai.

