

## Intisari

Penelitian ini bertujuan untuk mengetahui pengaruh pengembalian air lindi dan komposisi penambahan jerami terhadap pengomposan sampah kota organik sistem *windrow*. Rancangan percobaan yang digunakan dalam penelitian ini yaitu Rancangan Acak Lengkap (RAL) dengan faktor perlakuan yaitu pengembalian air lindi dan komposisi penambahan jerami antara lain kontrol, sampah kota organik:jerami padi (1:1), sampah kota organik:jerami padi (2:1), sampah kota organik:jerami padi (3:1), masing-masing dengan tiga ulangan. Parameter pengamatan meliputi suhu, kelembaban, pH, DHL, warna, bau, air lindi, kenampakan fisik, kadar air, penyusutan berat selama proses pengomposan, nisbah C/N, potensial redoks (ORP), dan kandungan hara (N, P, K). Hasil penelitian menunjukkan pengaruh pengembalian air lindi dan komposisi penambahan jerami berpengaruh nyata sampai sangat nyata terhadap kadar air kompos, penyusutan berat akhir kompos, nisbah C/N kompos, kadar C-organik dalam kompos, berat C-organik dalam kompos, kadar nitrogen total kompos, berat nitrogen dalam kompos, berat fosfor dalam kompos, berat kalium dalam kompos, pH air lindi, kadar fosfor air lindi kompos, dan kadar kalium air lindi kompos. Sedangkan pengaruh pengembalian air lindi dan komposisi penambahan jerami tidak memberikan pengaruh nyata terhadap kadar fosfor kompos, kadar kalium kompos, dan kadar kalium air lindi kompos. Kondisi paling ideal pengomposan sistem *windrow* yaitu pengembalian air lindi dan komposisi penambahan jerami antara sampah organik berbanding jerami yaitu 1:1. Hal tersebut dibuktikan dengan penyusutan berat akhir kompos, kadar kalium kompos, kadar nitrogen air lindi kompos, dan kadar fosfor air lindi kompos yang paling optimal. Pada akhir proses pengomposan diperoleh nisbah C/N antara 15-19 dibandingkan dengan kontrol dengan nisbah C/N yaitu 22,40.

Kata kunci: sistem *windrow*, sampah kota organik, jerami, air lindi, pengomposan

## Abstract

This research is aimed to determine the effect of reusing leachate and added composition of straw towards organic city waste composting using windrow system. The used experimental design was a completely randomized design (CRD), with treatment factors were reusing leachate and added composition of straw namely control, organic city waste:paddy straw (1:1), organic city waste:paddy straw (2:1), and organic city waste:paddy straw (3:1) repeated three times. Observed parameter were temperature, relative humidity, pH, electrical conductivity, color, smell, leachate, physical performance, water content, mass reduction during the composting process, C/N value, oxidation-reduction potential, nutrients (N, P, K). The result showed that the effect of reusing leachate and added composition of straw gave the significant effect on water content, final mass compost reduction, carbon content, nitrogen content, C/N value, organic carbon mass in compost, nitrogen mass in compost, phosphor mass in compost, potassium mass in compost, pH of the leachet, nitrogen content of the leachet, and phosphorus content of the leachet. Meanwhile, the effect of reusing leachate and added composition of straw did not give the significant effect on phosphorus content, potassium content, and potassium content of the leachet. The ideal condition for windrow composting system was reusing leachate with added composition of straw was 1:1. It was proven by final mass compost reduction, potassium content, nitrogen content of the leachet, and phosphorus content of the leachet in the most optimal condition. In the end of the composting process, obtained C/N value between 15-19 compare to the control treatment which the C/N value was 22,40.

Key words: windrow method, organic city waste, paddy straw, leachet, composting