

ABSTRAK

Penelitian ini dilakukan untuk mengetahui pengaruh pengaturan fase termofilik pada proses pengomposan limbah baglog dan *Glirecideae sepium* terhadap hasil kompos dan mendapatkan lama inkubasi fase termofilik yang terbaik pada proses pengomposan. Penelitian dilakukan dalam dua tahap. Tahap pertama berupa pengamatan evolusi CO₂ untuk menentukan fase termofilik (suhu) yang tepat diantara suhu 40⁰C, 45⁰C, dan 50⁰C. Hasil paling tepat pada pengamatan tahap pertama digunakan sebagai dasar pengaturan fase termofilik untuk tahap penelitian berikutnya. Tahap kedua berupa penelitian limbah *baglog* dan *Glirecideae sepium* pada fase termofilik suhu 50⁰C menggunakan rancangan acak lengkap dengan 4 perlakuan yaitu T0 = Fase termofilik 0 minggu (suhu kamar), T1 = Fase termofilik 1 minggu T2 = Fase termofilik 2 minggu, T3 = Fase termofilik 3 minggu. Pengaturan fase termofilik dilakukan dengan cara meletakkan kompos pada wadah inkubator yang dapat diatur suhunya secara konstan. Fase termofilik dipertahankan selama 1 minggu, 2 minggu, dan 3 minggu. Parameter penelitian meliputi C organik (%), N total (%), rasio C/N (%), pH H₂O, warna kompos dan kadar lignin terombak (%). Hasil penelitian menunjukkan inkubasi 3 minggu fase termofilik suhu 50⁰C memberikan hasil kompos terbaik, pada pengomposan limbah *baglog* inkubasi 3 minggu berpengaruh nyata terhadap penurunan kadar karbon (C), rasio C/N dan peningkatan kadar lignin terombak tetapi tidak berpengaruh nyata terhadap peningkatan N-total dan penurunan tingkat kemasaman pH (H₂O), sedangkan pada pengomposan *Glirecideae sepium* berpengaruh nyata terhadap penurunan kadar karbon (C), dan peningkatan kadar lignin terombak tetapi tidak berpengaruh nyata terhadap peningkatan N-total, rasio C/N dan penurunan tingkat kemasaman pH (H₂O).

Kata kunci : *limbah baglog, fase termofilik, pengomposan*

ABSTRACT

This study was conducted to determine the effect on the thermophilic phase settings on composting baglog waste and *Glirecideae sepium* baglog waste composting process and *Glirecideae sepium* on compost result and get the best duration of incubation thermophilic phase in the composting process. The study has done in two stages. First stage is observation of the evolution of CO₂ to determine the phase of thermophilic (temperature) right between the temperature of 40⁰C , 45⁰C , and 50⁰C . The most precise results in the observation stage is used as the basis for setting the thermophilic phase for the next phase of the research. The second stage is the research on baglog waste and *Glirecideae* at the temperature 50⁰C thermophilic using the complete randomized design with 4 treatments, T0 = thermophilic phases 0 week (room temperature), T1 = thermophilic phases 1 week, T2 = thermophilic phases 2 weeks, and T3 = thermophilic phases 3 weeks. The settings of thermophilic phase has done with taking the compost on the incubator receptacles that can customized the temperature constantly. Thermophilic phase maintained for 1 week, 2 weeks, and 3 weeks. The paramater research including is C organics (%), N total (%), ratio of C/N (%), ph H₂O's, color of compost and lignin content overhauled (%). The results showed on the 3 weeks incubation, the phase of thermophilic temperature of 50⁰C gave the best compost result, the composting of waste baglog 3 weeks incubation had significant effect on decreasing carbon content (C), C / N ratio and increased the levels of the decomposed lignin but did not significantly affect the increase of N - total and decreased the level of acidity pH (H₂O) , whereas in composting *Glirecideae sepium* showed significant effect on decreasing carbon content (C), and increased levels of decomposed lignin but did not significantly affect the increase on N-total, C / N ratio and a decrease in the level of acidity of pH (H₂O) .

Keyword: *baglog waste, thermophilic phase, composting*