

ABSTRAK

STUDI KEPADATAN TANAH TERHADAP PERILAKU *DUNG BEETLE*

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Dung beetle merupakan anggota kelompok *Coleoptera* dari suku *Scarabaeidae* yang lebih dikenal sebagai *scarab*. Perilaku *dung beetle* yang membawa kotoran ke dalam liang sarangnya di dalam tanah. Perilaku itu secara alami akan menambah unsur-unsur hara tanah dan secara tidak langsung menggemburkan tanah dengan liang-liang sarang yang dibuatnya. Penelitian ini bertujuan untuk mengetahui perilaku *dung beetle* terhadap kepadatan tanah dan untuk mengetahui sifat fisik tanah pada habitat *dung beetle* di Arboretum I dan Arboretum III Hutan Pendidikan Terpadu Unila di Blok Pemanfaatan Tahura WAR. Penelitian ini telah dilakukan pada bulan November-Desember 2018. Metode yang digunakan adalah analisis tanah. Analisis tanah dilakukan di Laboratorium Mekanika Tanah Fakultas Teknik, Universitas Lampung. Data yang terkumpul dianalisis dengan rumus kadar air, berat jenis, berat volume, analisa saringan serta uji pemadatan tanah standar. Hasil penelitian menunjukkan bahwa semakin besar ukuran *dung beetle* memengaruhi kemampuan menggali tanah akan semakin dalam. Kadar air rata-rata yang ada di

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lapangan pada Arboretum I sebesar 43,55%. Berat jenis rata-rata tanah sebesar 2,64 gr.

Berat volume tanah kering rata-rata ($\gamma_{d \text{ rata-rata}}$) sampel sebesar 0,86 gr/cm³. Persentase

lolos saringan No.40 dengan diameter saringan 0,475 mm adalah sebesar 77,50%.

Pemadatan tanah standar pada arboretum I didapatkan nilai kadar air optimum sebesar

24%. Kadar air rata-rata pada Arboretum III sebesar 49,56%. Berat jenis rata-rata tanah

sebesar 2,44 gr. Berat volume tanah kering rata-rata ($\gamma_{d \text{ rata-rata}}$) sampel sebesar 0,99

gr/cm³. Persentase lolos saringan No.40 dengan diameter saringan 0,475 mm adalah

sebesar 71,08%. Pemadatan tanah standar pada arboretum III didapatkan nilai kadar air

optimum sebesar 28%.

Kata kunci: arboretum, *dung beetle*, kepadatan tanah.

ABSTRACT

SOIL DENSITY STUDIES ON DUNG BEETLE BEHAVIOR

By

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Dung beetle is classified as a group of Coleoptera and the family of Scarabidae which known as scarab. The behavior of dung beetle was carrying the dung to their nest on the soil. This behavior naturally added the soil nutrient and indirectly made a loose soil by the nest burrows. This research aims to determine the behavior of dung beetle toward the soil density and to find out the soil physical in the dung beetle habitat at Arboretum I and Arboretum III Unila Integrated Education Forest in the Tahura WAR Utilization Block. This research was conducted between November-December 2018. The method that used was soil analysis. The soil was analyzed at the Soil Mechanics Laboratory, Faculty of Engineering, University of Lampung. The collected data were analyzed used formula of water content, specific gravity, volume weight, filter analysis and compaction test of standard soil. The results showed that greater size of the dung beetle, effected the ability of soil dig will be deeper. The average of water content in the field in Arboretum I was 43.55%. The average of soil density of 2.64 gr.

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The weight of dry soil average (d average) of the sample was 0.86 gr/cm^3 . The percentage of filter 40^{th} with a filter diameter of 0.475 mm was 77.50% . The water content in the standard soil compaction treatment in arboretum I obtained the value of optimum water content was 24% . The average of water content in Arboretum III was 49.56% . The average of soil density was 2.44 gr . The weight of the average dry soil volume (d average) of the sample was 0.99 gr/cm^3 . The percentage of filter passing 40^{th} with a filter diameter of 0.475 mm was 71.08% . The water content in the standard soil compaction treatment in Arboretum III obtained the valued of optimum water content was 28% .

Keywords: arboretum, dung beetle, soil density.