

PERBAIKAN SIFAT FISIK TANAH PASIR PANTAI DENGAN PEMBERIANGRUMUSOL DAN PUPUK HIJAU *Tithonia diversifolia*

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ABSTRAK

Tanah pasir berpotensi dijadikan lahan pertanian namun perlunya teknologi untuk memperbaiki sifat fisika dengan penambahan Grumusol dan *Tithonia diversifolia*. Grumusol merupakan bahan pembenah tanah. *Tithonia diversifolia* merupakan bahan organik dari tanaman. Penambahan Grumusol dan *Tithonia diversifolia* diharapkan dapat menjadi solusi memperbaiki sifat fisika tanah pasir pantai. Penelitian ini bertujuan untuk mengetahui pengaruh dan takaran yang tepat dari dalam memperbaiki sifat fisik tanah pasir pantai. Pelaksanaan penelitian bertempat di Rumah kaca Fakultas Pertanian UPN “Veteran” Yogyakarta. Penelitian menggunakan Rancangan Acak Lengkap (RAL) faktorial 3 x 3 + 1 dengan kontrol terpisah. Faktor pertama yaitu takaran lempung tiga taraf yaitu 15 ton/ha, 30 ton/ha, 45 ton/ha. Faktor kedua takaran *Tithonia diversifolia* tiga taraf 5 ton/ha, 10 ton/ha, 15 ton/ha dan ditambahkan satu perlakuan sebagai kontrol. Parameter penelitian yang diamati meliputi Tekstur, Berat volume, Berat jenis, Porositas tanah (n), Karakteristik lengas tanah (pF), Agihan ukuran pori tanah dan C/N rasio. Pengolahan data untuk mengetahui pengaruh perlakuan digunakan ANOVA dan diuji lanjut menggunakan DMRT taraf uji 5% pada perlakuan yang berpengaruh nyata. Penambahan Grumusol dengan dosis 45 ton/ha (L3) menunjukkan hasil menurunkan pori drainase lambat dan *Tithonia diversifolia* dengan dosis 15 ton/ha (L3) mampu menurunkan berat jenis dan meningkatkan pori air tersedia pada tanah pasir pantai. Pada parameter berat volume, porositas, pF, pori drainase cepat dan C/N rasio belum menunjukkan adanya beda nyata. Pemberian kedua perlakuan belum menunjukkan adanya interaksi.

Kata kunci : Lempung Grumusol, Pasir Pantai, *Tithonia diversifolia*

THE RESTORATION OF PHYSICAL PROPERTIES IN COASTAL SAND SOIL WITH GRUMUSOL AND GREEN FERTILIZER APPLICATION
(*Tithonia diversifolia*)

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ABSTRAK

Coastal sand soil has potential to become agricultural land, but right technology is needed to improve soil physical properties with Grumusols and *Tithonia diversifolia*. Application Grumusols are one of soil fixers material. *Tithonia diversifolia* is the natural organic matter. Applying Grumusols and *Tithonia diversifolia* aimed to be the solution for repair coastal sand soil physical properties. This research aimed to determine the effect and best dosage of Grumusols and *Tithonia diversifolia* in improving coastal sand soil physical properties. This research was conducted in Green House of Faculty of Agriculture, UPN Veteran Yogyakarta. Completed Randomized Design with 3 x 3 + 1 factorial with separate control. The first factor was clay dosage with three level, which are 15 ton/ha, 30 ton/ha, 45 ton/ha. The second factor was the dosage of *Tithonia diversifolia* with 3 level which are 5 ton/ha, 10 ton/ha, and 15 ton/ha with the addition of 1 treatment as control. The parameters on his research were soil texture, bulk density, particle density, soil porosity (n), soil pore characteristic (pF), soil pores distribution, and C/N ratio. The data processing to determine the effect of treatment using ANOVA and test by using DMRT on 5% range on significant treatment. By adding 45 ton/ha of Grumusols (L3) shows that could decrease the slowness of drainage pores and 15 ton/ha dosage of *Tithonia diversifolia* could decrease soil's bulk density and increase the availability of water pores on coastal sand soil. On particle density, soil porosity, pF, soil pores distribution and C/N ratio didn't shows any significant result. Both formula didn't show any interaction in parameters.

Key words : Grumusols Clay, Coastal Sand Soil, *Tithonia diversifolia*