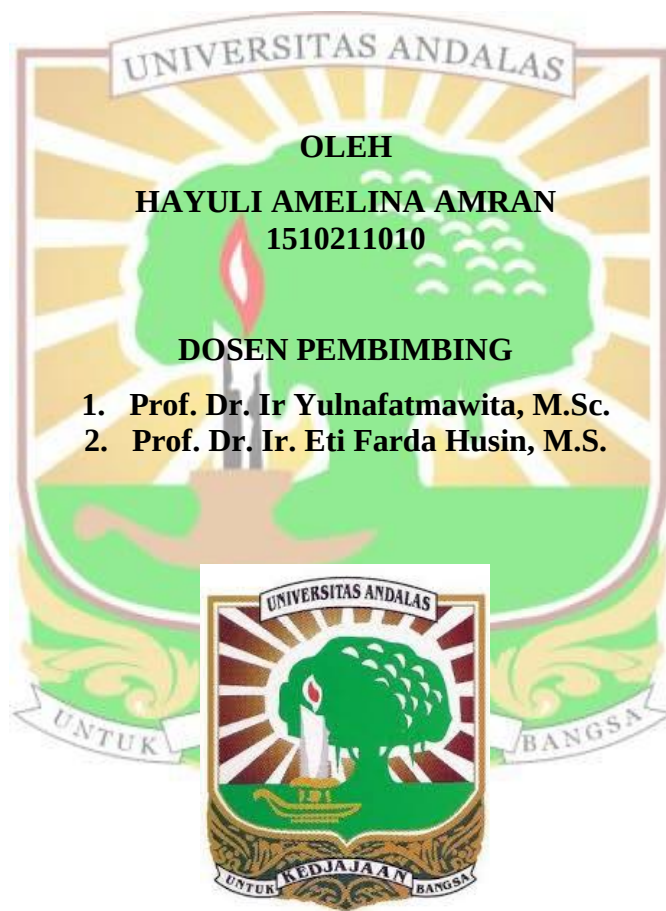


**ANALISIS INDEKS KUALITAS FISIKA TANAH PADA
PERKEBUNAN KELAPA SAWIT (*Elaeis guineensis* Jacq.)
RAKYAT DI NAGARI GUNUNG SELASIH KECAMATAN
PULAU PUNJUNG DHARMASRAYA**

SKRIPSI



**FAKULTAS PERTANIAN
UNIVERSITAS ANDALAS
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2020**

ANALISIS INDEKS KUALITAS FISIKA TANAH PADA PERKEBUNAN KELAPA SAWIT (*Elaeis guineensis* Jacq.) RAKYAT DI NAGARI GUNUNG SELASIH KECAMATAN PULAU PUNJUNG DHARMASRAYA

ABSTRAK

Penelitian ini bertujuan untuk mengetahui indeks kualitas tanah dan indikator yang paling mempengaruhi kualitas tanah dari aspek fisika tanah pada perkebunan kelapa sawit dari beberapa tingkat umur tanaman dan hutan sebagai pembanding. Penelitian ini dilaksanakan dari bulan Juli sampai Desember 2019 berlokasi di Perkebunan Kelapa Sawit (*Elaeis guineensis* Jacq.) rakyat di Nagari Gunung Selasih, Kecamatan Pulau Punjung, Kabupaten Dharmasraya. Penelitian ini dilakukan dengan metode survei dan skoring, dengan pengambilan sampel dilakukan secara *purposive sampling* pada perkebunan kelapa sawit berdasarkan umur tanam (3, 9, 15, dan 19 tahun) dan hutan pada kedalaman 0 – 20 cm dan 20 – 40 cm dengan dua ulangan. Analisis sampel tanah dilakukan di Laboratorium Jurusan Tanah, Fakultas Pertanian, Universitas Andalas dan Laboratorium Balai Penelitian Tanah, Bogor. Parameter yang dianalisis sebagai indikator yaitu tekstur tanah, bahan organik, berat volume, total ruang pori, pori air tersedia, permeabilitas, indeks stabilitas agregat, infiltrasi, dan ketahanan penetrasi tanah. Hasil analisis laboratorium dilanjutkan dengan analisis *Principal Component Analysis* (PCA), menggunakan perangkat lunak Minitab-19. Berdasarkan hasil penelitian, didapatkan hasil kualitas fisika tanah pada perkebunan kelapa sawit cenderung meningkat dari sangat rendah ke rendah dengan peningkatan umur tanaman dari ≤ 9 tahun ke >9 tahun. Nilai indeks kualitas tanah kelapa sawit lebih rendah dari indeks kualitas tanah hutan. Indikator kualitas fisika tanah yang paling berpengaruh adalah bahan organik dan total ruang pori tanah.

Kata kunci: kelapa sawit, indeks kualitas tanah, principal component analysis (PCA), sifat fisika tanah

**ANALYSIS OF SOIL PHYSICAL QUALITY INDEX UNDER
LOCAL SOCIETY PALM OIL (*Elaeis guineensis* Jacq.)
PLANTATION IN NAGARI GUNUNG SELASIH
DHARMASRAYA REGENCY**

ABSTRACT

This study was aimed to determine the soil physical quality index and the most influential indicators of the soil physical properties under oil palm plantations at various age levels of crops. Then, sampel was also taken under forests as a comparison. This research was done from July to December 2019 located in the oil palm plantation (*Elaeis guineensis* Jacq.) in Nagari Gunung Selasih, Pulau Punjung District, Dharmasraya Regency. This research was conducted by survey and scoring methods. Soil samples were taken by purposive sampling based on the age of planting crops (3, 9, 15, and 19 years old) and the forest from two soil depth (0 – 20 cm and 20 – 40 cm) with two replications. Soil sample analysis was done at Soil Laboratory, Faculty of Agriculture, Andalas University and Laboratory of Soil Research Institute, Bogor. Parameters analyzed were soil texture, organic matter, bulk density, total porosity, available water pore, permeability, aggregate stability index, infiltration, and strengthening of soil penetration. The results from the laboratory analysis were scored by *Principal Component Analysis* (PCA), using Minitab–19 software. Based on the data resulted, the quality index of soil physical properties under oil palm plantations increased from very low (at crops ≤ 9 years old) to low (at crops > 9 years old). Value of soil quality index under palm oil plantation was lower than that under forest. The most important indicators for soil physical quality under oil palm plantation were soil organic matter and total porosity.

Keywords: palm oil plantation, soil quality index, principal component analysis (PCA), soil physical properties

