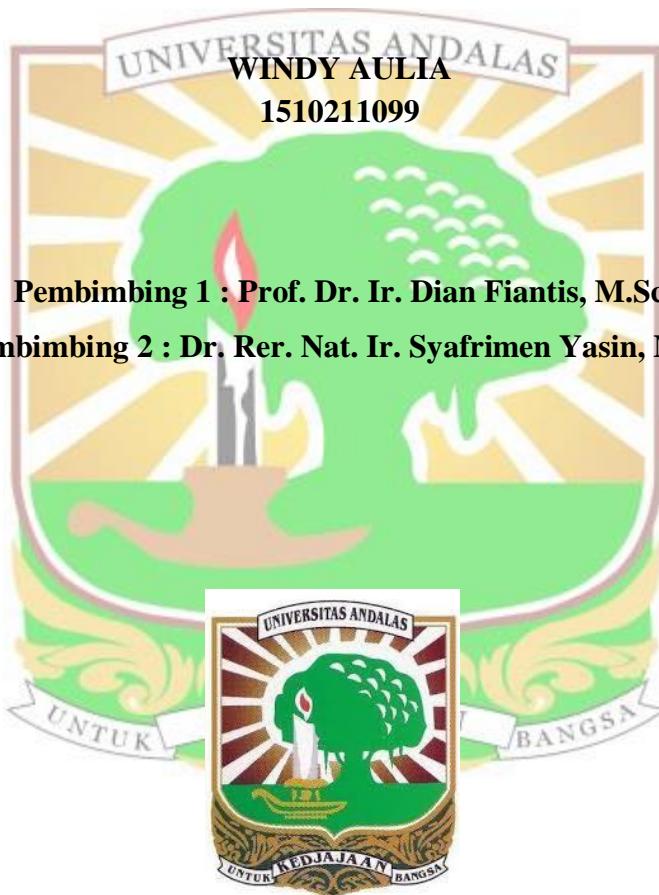


**FRAKSIONASI KARBON (C) DAN NITROGEN (N) PADA DAERAH
TERDAMPAK ERUPSI GUNUNG TINJAU (MANINJAU) SUMATERA
BARAT**

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Abstrak

Letusan Gunung Tinjau yang terjadi ±52.000 tahun lalu mengeluarkan material piroklastik yang tersebar hingga > 75 km dari pusat letusan. Material ini yang kemudian melapuk akan membentuk tanah vulkanis. Kandungan Karbon dan Nitrogen dalam tanah menentukan tingkat kesuburan tanah. Tujuan dari penelitian ini yaitu mengidentifikasi kandungan C dan N serta fraksi-fraksinya. Pengambilan sampel pada penelitian ini berdasarkan peta geologi Maninjau Lembar Padang dan diambil berdasarkan 4 arah mata angin (Timur Laut, Tenggata, Barat Daya dan Barat Laut) dengan metode *Random Forest Tree Sampling* (pengambilan sampel pohon hutan acak). Sebanyak 105 sampel tanah diambil pada kedalaman 0-20 cm dan analisis pH tanah, C-organik beserta fraksinya, N-total dan N-NH₄⁺. Hasil penelitian menunjukkan bahwa pH tanah berkisar antara 5,7-6,1, C-organik berkisar antara 2,83%-4,59%, C-labil berkisar antara 0,01%-0,04%, C-sangat labil berkisar antara 20-190, C-terikat mineral liat non kristalin 8-190, C-metal humus kompleks berkisar antara 163-114, C-total berkisar antara 8,81%-11,75%, C-rekalsitran berkisar antara 5,95%-7,37%, N-total 0,27%-0,44%, NH₄⁺ berkisar antara 0,0012%-0,0016% dan Rasio C/N 7,7-11,6. Kandungan C-rekalsitran menunjukkan persentase tertinggi yang mendominasi wilayah penelitian. Keberagaman fraksi karbon dan nitrogen ini dapat dijadikan acuan dalam pengolahan lahan untuk mempertahankan simpanan karbon organik tanah.

Kata kunci : Fraksionasi, karbon, Maninjau, nitrogen

FRACTIONATION OF CARBON (C) AND NITROGEN (N) IN THE AFFECTED AREA OF THE TINJAU MOUNTAIN (MANINJAU) WEST SUMATERA

Abstract

The eruption of Tinjau volcano which occurred \pm 52,000 years ago, released the famous pyroclastic materials blown away up to >75 km from the center of the eruption. This material then decomposes to form volcanic soil. Soils derived from volcanic ash well known to have a high carbon storage capacity. The purpose of this study was to identify the C and N content and their fractions. Sampling in this study was based on the geology of Maninjau Sheet Padang and were taken based on 4 cardinal directions (Northeast, Southeast, Southwest, and Northwest) with the Random Forest Tree Sampling method. A total of 105 soil samples were taken at a depth of 0-20 cm and analyzed for soil pH, organic-C, and its fractions, N-total and N-NH₄+. The results showed that soil pH ranged from 5.7-6.1, organic-C ranged from 2.83%-4.59%, C-labile ranged from 0.01% -0.04%, C-very unstable ranged from 20-190 ppm, C-bonded non crystalline clay minerals 8-190 ppm, C-metal humus complex ranged from 163-114 ppm, C-total ranged from 8.81%-11.75%, C-recalcitrant ranged between 5.95%-7.37%, N-total 0.27%-0.44%, NH₄+ ranging from 0.0012%-0.0016% and C/N ratio of 7.7-11.6. The content of C-recalcitrant showed the highest proportion, namely 68.86% which dominated the research area in the Northeastern part of Maninjau.

Keywords: *Maninjau, fractionation, carbon, nitrogen, volcanic soils*