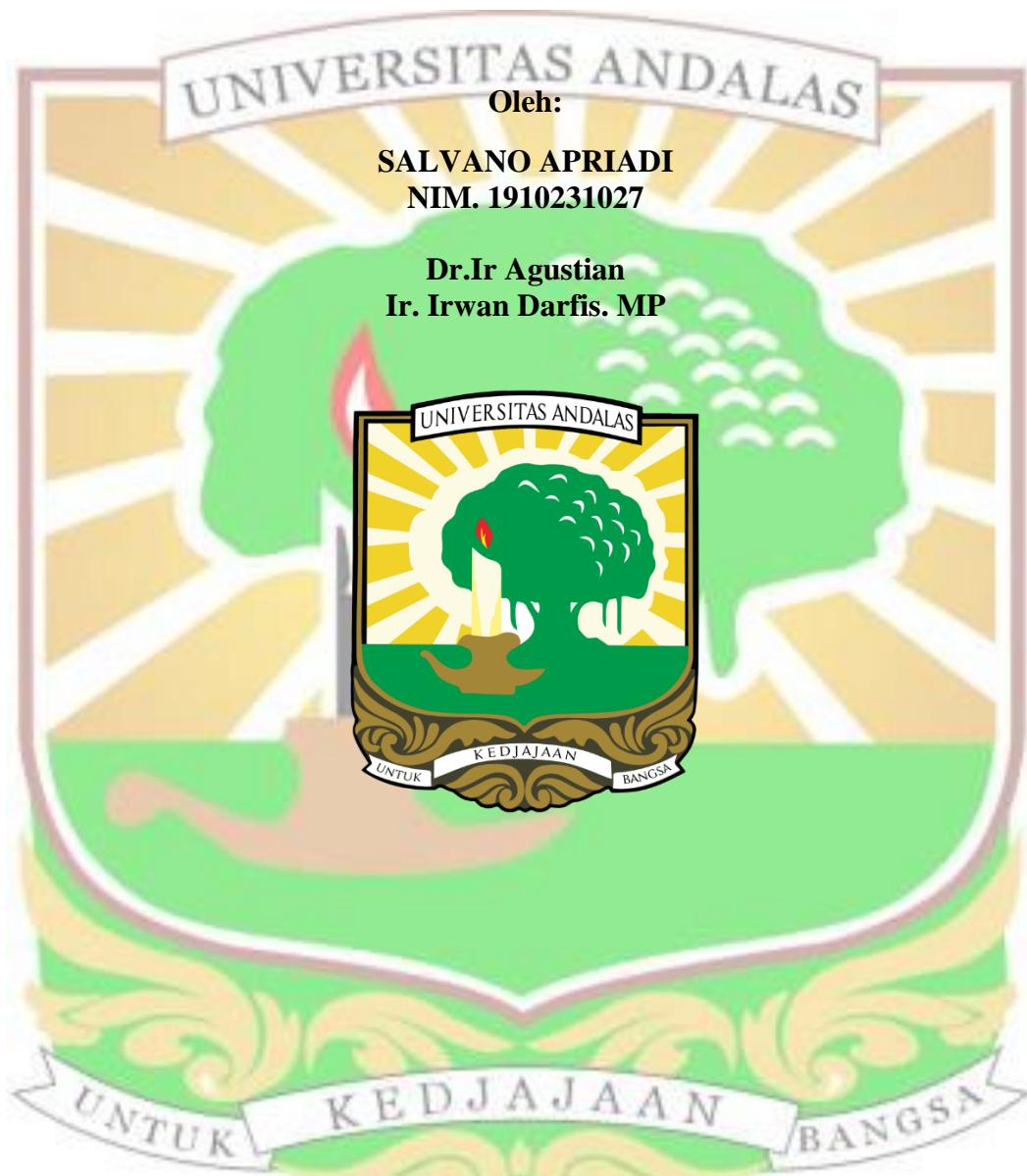


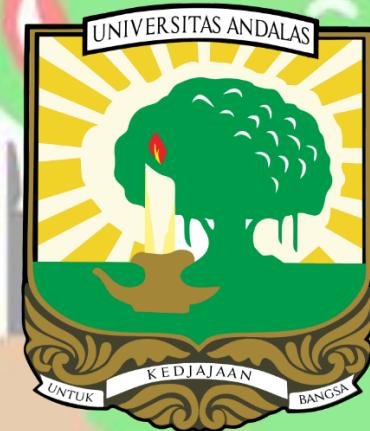
**AKTIVITAS FOSFATASE TANAH PADA BEBERAPA  
KELOMPOK UMUR TANAMAN MANGGIS (*Garcinia  
mangostana* L) DI KAMPUNG TEMATIK KELURAHAN  
LIMAU MANIS KECAMATAN PAUH PADANG**



Oleh:

**SALVANO APRIADI  
NIM. 1910231027**

**Dr.Ir Agustian  
Ir. Irwan Darfis. MP**



**FAKULTAS PERTANIAN  
UNIVERSITAS ANDALAS  
PADANG  
2024**

# **AKTIVITAS FOSFATASE TANAH PADA BEBERAPA KELOMPOK UMUR TANAMAN MANGGIS (*Garcinia mangostana* L) DI KAMPUNG TEMATIK KELURAHAN LIMAU MANIS KECAMATAN PAUH PADANG**

## **Abstrak**

Fosfatase merupakan enzim tanah yang berpartisipasi dalam proses mineralisasi P organik. Aktivitas fosfatase dapat menjadi indikator ketersediaan P. Tujuan dari penelitian ini adalah untuk mengetahui aktivitas fosfatase pada beberapa kelompok umur tanaman manggis yang berbeda di Kampung Tematik Manggis Kelurahan Limau Manis, Kecamatan Pauh, Padang. penelitian berada pada perkebunan manggis masyarakat di Kampung Manggis Talao, Kelurahan Limau Manis, Kecamatan Pauh, Kota Padang. Metode penelitian yang digunakan adalah metode survei dengan penentuan titik sampel secara purposive sampling berdasarkan umur tanaman manggis (5 tahun dan 10 tahun). Tahapan penelitian yaitu: (1) persiapan (2) survei pendahuluan (3) survei utama (4) analisis tanah di laboratorium, dan (5) pengolahan data. umur 10 tahun 0-20cm memiliki pH 5,37. C-organik 1,20. P-Tersedia 12,9. Respirasi 51,64. C-Biomassa 6,19. Aktivitas Fosfatase asam 3,55. Fosfatase basa 315. 20-40 cm memiliki pH 5,26. C-organik 0,76. P-Tersedia 6,37. Respirasi 53,00. C-Biomassa 5,41. Aktivitas Fosfatase asam 1,19. Fosfatase basa 4,62. umur 5 tahun 0-20cm memiliki pH 5,25. C-organik 1,04. P-Tersedia 12,31. Respirasi 50,11. C-Biomassa 5,75. Aktivitas Fosfatase asam 2,32. Fosfatase basa 1,13. 20-40 cm memiliki pH 5,05. C-organik 0,47. P-Tersedia 6,01. Respirasi 53,05. C-Biomassa 5,75. Aktivitas Fosfatase asam 2,46. Fosfatase basa 3,99. Aktivitas enzim fosfatase asam rata-rata lebih tinggi pada kedalaman tanah 0-20 cm dibanding 20-40 cm yaitu berkisar antara 2,32-3,55  $\mu$ mol pNP/g tanah/jam sedangkan aktivitas fosfatase basa rata-rata lebih tinggi pada kedalaman tanah 20-40 cm berkisar antara 3,99- 4,62  $\mu$ mol pNP/g tanah/jam. penambahan bahan organik, pH akan meningkatkan aktivitas enzim di dalam tanah sehingga dapat meningkatkan kesuburan tanah pada perkebunan manggis.

**Kata Kunci :** Enzim fosfatase, Kampung Tematik, Manggis, Umur Tanaman

# **SOIL PHOSPHATASE ACTIVITY IN SEVERAL AGE GROUPS OF MANGOSTEEN (*Garcinia mangostana L*) PLANT IN THE THEMATIC VILLAGE LIMAU MANIS DISTRICT PAUH PADANG CITY**

## **Abstract**

Phosphatase is a soil enzyme that participates in the organic P mineralization process. Phosphatase activity can be an indicator of P availability. The aim of this research is to determine phosphatase activity in several different age groups of mangosteen plants in the Mangosteen Thematic Village, Limau Manis Subdistrict, Pauh District, Padang. The research was conducted on community mangosteen plantations in Manggis Talao Village, Subdistrict Limau Manis, Pauh District, Padang City. The research method used was a survey method by determining sample points using purposive sampling based on the age of the mangosteen plant (5 years and 10 years). The research stages are: (1) preparation (2) preliminary survey (3) main survey (4) soil analysis in the laboratory, and (5) data processing. Age 10 years 0-20cm has a pH of 5.37. C-organic 1.20. P-Available 12.9. Respiration 51.64. C-Biomass 6.19. Acid Phosphatase Activity 3.55. Alkaline phosphatase 315. 20-40 cm has a pH of 5.26. C-organic 0.76. P-Available 6.37. Respiration 53.00. C-Biomass 5.41. Acid Phosphatase Activity 1.19. Alkaline phosphatase 4.62. 5 years old 0-20cm has a pH of 5.25. C-organic1.04. P-Available 12.31. Respiration 50.11. C-Biomass 5.75. Acid Phosphatase Activity 2.32. Alkaline phosphatase 1.13. 20-40 cm has a pH of 5.05. C-organic 0.47. P-Available 6.01. Respiration 53.05. C-Biomass 5.75. Acid Phosphatase Activity 2.46. Alkaline phosphatase 3.99. The average activity of the acid phosphatase enzyme is higher at a soil depth of 0-20 cm compared to 20-40 cm, namely ranging from 2.32-3.55  $\mu$ mol pNP/g soil/hour while the average alkaline phosphatase activity is higher at soil depth 20-40 cm ranges from 3.99- 4.62  $\mu$ mol pNP/g soil/hour. organic, pH will increase enzyme activity in the soil so that it can increase soil fertility in mangosteen plantations.

**Keywords:** Mangosteen, Phosphatase enzyme, Plant Age, Thematic Village