

## **ABSTRAK**

### **KINETIKA PELEPASAN FOSFOR PADA TANAH ULTISOL NATAR AKIBAT PERLAKUAN BESI KLORIDA ( $\text{FeCl}_3$ ), KONKRESI BESI, DAN BAHAN ORGANIK**

**Oleh:**

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Metode-metode penetapan fosfor (P) seperti P tersedia (Bray I) dan P Potensial (HCl 25%) berlangsung satu kali pengestrakan hal ini mengacu pada reaksi kesetimbangan, sedangkan proses tanaman mengambil P di koloid dilakukan terus-menerus tidak hanya satu kali. Selain uji kesetimbangan terdapat uji kinetika untuk mengetahui pelepasan P tersedia dari koloid tanah berdasarkan waktu yang sesuai tanaman menyerap P. Contoh tanah diambil dari lapisan bawah tanah di kebun percobaan FP Universitas Lampung di Kecamatan Natar, Lampung Selatan. Penelitian menggunakan 5 perlakuan yaitu; T = Tanah, TF = Tanah+ $\text{FeCl}_3$ , TK = Tanah+Konkresi Besi, TFO = Tanah+ $\text{FeCl}_3$ +Bahan Organik, dan TKO = Tanah+Konkresi Besi+Bahan Organik. Analisis laboratorium yang digunakan adalah analisis P tersedia (Bray I) dan P potensial (HCl 25%) pada saat kesetimbangan dan kinetika. Hasil penelitian menunjukkan hasil kumulatif ekstraksi P lebih banyak pada saat kinetika dibandingkan saat kesetimbangan. Perlakuan TKO memiliki kumulatif P tersedia dan konstanta kecepatan P tersedia yang terlepas dari koloid paling tinggi baik secara keseluruhan, laju cepat ( $k_1$ ), dan laju lambat ( $k_2$ ).

Kata kunci : Kinetika, Konkresi besi, P tersedia, P terekstrak, Bahan organik, Ion Fe

## **ABSTRACT**

### **KINETICS OF PHOSPHORUS RELEASE IN ULTISOL NATAR DUE TO TREATMENT IRON CHLORIDE ( $\text{FeCl}_3$ ), IRON CONCRETION, AND ORGANIC MATTER**

**By:**

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Phosphorus (P) determination methods such as available P (Bray I) and P Potential (HCl 25%) take place one time extraction, this refers to an equilibrium reaction whereas the process by which plants take up P in colloids is continuously carried out, not just once. In addition to the equilibrium test, there is a kinetic test to determine the rate of P release in soil colloids based on the appropriate time for plants to absorb P. The soil sample was taken from the sub soil of Experimental Garden of the FP University of Lampung in Natar District, South Lampung. The study used 5 treatments, namely: T = Soil, TF = Soil+ $\text{FeCl}_3$ , TK = Soil+Iron Concretions, TFO = Soil+ $\text{FeCl}_3$ +Organic Matter, and TKO = Soil+Iron Concretions+Organic Matter, the laboratory analysis used was analysis Available P (Bray I) and P potential (HCl 25%) at equilibrium and kinetics. The results showed that the cumulative yield of P extraction was higher at kinetics than at equilibrium. The TKO treatment had a cumulative available P and available P velocity constant regardless of the highest overall colloid, fast rate ( $k_1$ ), and slow rate ( $k_2$ ).

Keywords : Kinetics, Iron concretion, available P, P extracted, Organic matter, Fe ion