



Intisari

Agihan vertikal fraksi-fraksi P-anorganik serta hubungannya dengan sifat-sifat tanah diamati pada 3 tanah sawah yang berasal dari bahan induk aluvium dan andesitik di Kebumen, Jawa Tengah. Penelitian ini dilakukan dari bulan Juni 2015 sampai Mei 2016. Tujuan dari penelitian ini adalah mengetahui pengaruh perbedaan bahan induk terhadap bentuk dan sebaran vertikal fraksi-fraksi P anorganik di tanah sawah, serta pengaruhnya terhadap sifat kimia tanah sawah di Kebumen. Metode fraksinasi yang digunakan adalah metode fraksinasi oleh Kuo (1996). Hasil menunjukkan bahwa jumlah P potensial tanah berturut-turut dari lapisan 0-15 cm, 16-30 cm, 31-45 cm, dan 46-60 cm di Puring adalah 331,13 ppm; 51,10 ppm; 47,91 ppm; dan 105,46 ppm di Ayah adalah 407,107 ppm; 280,32 ppm; 260,50 ppm; dan 238,97 ppm di Buayan adalah 515,42 ppm; 279,70 ppm, 314,98 ppm, dan 316,04 ppm. Tanah sawah di Puring mengandung pada *topsoil* (0-15 cm) dan *subsoil* (16-60 cm) berturut-turut P-anorganik rata-rata sebesar 84,01 ppm dan 47,97-99,18 ppm; P tersedia 5,04 ppm serta 1,34-3,23 ppm; di Buayan memiliki P anorganik sebesar 253,18 ppm dan 220,34-230,85 ppm; P tersedia sebesar 14,09 ppm dan 2,71-4,54 ppm, sedangkan di Ayah memiliki P anorganik sebesar 213,90 ppm dan 135,13-187,07 ppm; P tersedia 30,31 ppm dan 18,02-21,17. Agihan fraksi P-anorganik yaitu pada lapisan olah Puring yang paling banyak berturut-turut bentuk $\text{Rs-P} > \text{Ca-P} > \text{Fe-P} > \text{Al-P} > \text{Sal-P}$, sedangkan lapisan dibawahnya berturut-turut $\text{Ca-P} > \text{Al-P} > \text{Rs-P} > \text{Fe-P} > \text{Sal-P}$. Pada lapisan olah Ayah berturut-turut $\text{Rs-P} > \text{Fe-P} > \text{Al-P} > \text{Ca-P} > \text{Sal-P}$, dan lapisan dibawahnya $\text{Fe-P} > \text{Al-P} > \text{Ca-P} > \text{Rs-P} > \text{Sal-P}$. Sedangkan pada lapisan olah dan tanah asli di Buayan fraksi yang mendominasi adalah $\text{Fe-P} > \text{Al-P} > \text{Ca-P} > \text{Rs-P} > \text{Sal-P}$.

Kata kunci: Fraksi P anorganik, tanah sawah, bahan induk, aluvium, andesitik.



Abstract

The vertical distribution of inorganic P fractions and their relationships with soil properties was studied in three paddy soils with alluvium and andesitic as parent material. The soils were selected from paddy soils of Kebumen, Jawa Tengah. The research was conducted from June 2015 until May 2016. The aim of this study was to know the effect of parent material to the forms and vertical distribution of inorganic P fractions in paddy soil, and its influence on the chemical properties of paddy soils. The method that was used in P fractionation was P fractionation according to Kuo (1996). Results showed that P potential in layer 0-15 cm; 16-30 cm; 31-45 cm and 46-60 cm in Puring were 331.13 ppm; 51.10 ppm; 47.91 ppm; and 105; 46 ppm; Ayah were 407,107 ppm; 280.32 ppm; 260.50 ppm; and 238.97 ppm; Buayan were 515.42 ppm; 279.70 ppm, 314.98 ppm and 316.04 ppm. The paddy soils in Puring contain lower in inorganic P with the average of 84.01 ppm in topsoil and 47.97-99.18 ppm at subsoil (16- 60 cm) and available P were 5.04 ppm and 1.34-3.23 ppm; Buayan were 253.18 ppm and 220.34-230.85 ppm; available P were 14.09 ppm and 2.71 to 4,54 ppm; while Ayah were 213.90 ppm and 135.13-187.07 ppm; available P were 30,31 ppm and 18.02-21.17 ppm. The vertical distribution of inorganic P forms were in topsoil of Puring dominated with $Rs-P > Ca-P > Fe-P > Al-P > Sal-P$, subsoils with $Ca-P > Al-P > Rs-P > Fe-P > Sal-P$; Ayah dominated with $Rs-P > Fe-P > Al-P > Ca-P > Sal-P$ in topsoil and subsoil with $Fe-P > Al-P > Ca-P > Rs-P > Sal-P$; while both topsoil and subsoil inorganic P forms in Buayan dominated by $Fe-P > Al-P > Ca-P > Rs-P > Sal-P$.

Keywords: Inorganic phosphorus fractions, paddy soil, parent material, alluvium, andesitic.