

Intisari

Penelitian ini bertujuan untuk mengetahui pengaruh Fe-komposit alginat-zeolit-Fe terhadap ketersediaan Fe pada tanah dan serapan Fe pada beberapa fase pertumbuhan tanaman padi pada Vertisol Moyudan. Penelitian dilaksanakan dari Mei 2015 sampai October 2015. Kandungan Fe tersedia tanah dianalisis menggunakan metode DTPA dengan pH 7,3 dan Kandungan total Fe jaringan dianalisis menggunakan metode destruksi kering dengan larutan kimia asam klorida dan asam nitrat, dengan pembacaan secara kuantitatif menggunakan AAS (*Atomic Absorption Spectroscopy*). Berdasarkan analisis, terdapat pelepasan Fe(III) dari komposit alginat-zeolit-Fe pada parameter pengujian Fe tersedia pada tanah, Fe terlarut (fase inkubasi) dan Fe tersedia pada tanaman padi. Hasil penelitian menunjukkan Fe tersedia tanah di perlakuan PFE6 200 ppm Fe-komposit paling tinggi yaitu sebesar 170,20 ppm, sedangkan Kandungan kadar total Fe dan serapan Fe jaringan Tertinggi pada perlakuan PFE6 yakni 226,36 ppm dan 5821 µg/pot, dengan kadar pemberian Fe-komposit 200 ppm. Terkait hasil analisis dan pengamatan untuk parameter kimia dan tanaman lainnya terdapat nilai nyata pada perlakuan seperti pH, DHL serta pada faktor agronomis lainnya seperti bobot segar, bobot kering, tinggi padi, jumlah anakan dan jumlah daun. Sedangkan memberikan nilai sangat nyata pada parameter seperti potensial redoks, Fe tertukar tanah, Fe terlarut dan Fe tersedia. Begitu pula pada kadar total Fe jaringan padi, serapan Fe pada jaringan padi, dan luas daun.

Kata kunci : Fe-komposit , Fe tersedia tanah, kadar Fe total jaringan, serapan Fe padi

Abstarct

This experiment was aimed to determine the effect of Fe-composite alginate-zeolite-Fe affecting the availability of iron in the soil and uptake of iron on several growth stages in Vertisol Moyudan Yogyakarta. This research was conducted since May 2015 until October 2015. The content of available Fe in soil were analyzed by using a DTPA method with pH 7,3. And a total Fe in plant tissue was analyzed by using dry ashing method with chloride acid and nitric acid and with quantitatively analyzed by AAS (*Atomic Absorption Spectroscopy*). Based on analyzing was there a released of iron(III) from the alginate-zeolite-Fe composite in some parameters such as available of iron in the soil, dissolution of iron (incubation phase), and available of iron in the plant tissue paddy soil. The results showed that soil with the highest available Fe found in treatment PFE6 was 170.20 ppm. And The highest result of total Fe content in plant tissues and Fe uptake of paddy soil in PFE6 (200 ppm Fe-composite) were 226.36 ppm and 5821 µg/pot. However, there were significant results in the relationship in other parameters of soil chemical analysis and agronomical parameters were for fresh weight of plant, dry weight of plant, plant height, amount of tillering and amount of leaf plant. And for the most significant results in the parameters of redox potential, exchangeable of iron, dissolution of iron, and available of iron in the soil. They are define for the parameters of total content plant tissues, iron uptake of paddy and leaf area.

Keywords: composite of iron, available Fe in soil, Fe total tissue, Fe uptake of paddy soil