

INTISARI

Penelitian ini bertujuan untuk mengamati pengaruh tinggi genangan dan pemberian pirit terhadap kadar Fe tersedia, kemasaman tanah, P tersedia tanah serta keracunan dan serapan Fe pada pertumbuhan dan hasil tanaman padi di tanah masam Ultisol Sukosari, Karanganyar. Penelitian ini dilakukan di Rumah Kaca Laboratorium Kuningan dan Laboratorium Tanah Umum Departemen Tanah Fakultas Pertanian UGM dengan rancangan penelitian yaitu Rancangan Acak Lengkap (RAL) faktorial dan dilaksanakan pada bulan November 2017 sampai April 2018. Hasil penelitian menunjukkan peningkatan pH tanah secara nyata akibat penggenangan, namun tidak berpengaruh nyata terhadap kadar Fe tersedia, P tersedia dan pH tanah setelah panen. Kadar Fe tersedia tanah mengalami penurunan selama masa tanam yang diakibatkan terserapnya Fe oleh tanaman dan meningkatnya pH tanah. Keracunan Fe yang diakibatkan penggenangan dan pirit memberikan pengaruh nyata terhadap bobot segar dan bobot kering tajuk, jumlah malai, jumlah gabah isi dan jumlah gabah total, serta pada berat gabah isi dan berat gabah total. Kadar serapan Fe di akar lebih tinggi dari pada Fe di tajuk dan Fe bulir padi. Perlakuan penggenangan dan dosis pirit memberikan pengaruh nyata terhadap kadar Fe jaringan (ppm) di tajuk dan bulir, serta pada serapan Fe di tajuk.

Kata kunci: penggenangan, pirit, pH tanah, Fe tersedia, keracunan Fe

ABSTRACT

This study aims to observe the effect of inundation and application of pyrite on available Fe, available P, soil acidity, toxicity and absorption of Fe on growth and yield of rice plants in acid soils Ultisol Sukosari, Karanganyar. This research was conducted at Greenhouse Laboratory of Kuningan and General Soil Laboratory UGM using factorial completely randomized design on November 2017 until April 2018. The result showed an increase in soil pH significantly due to inundation, but no significant effect on available Fe, available P and soil pH after harvest. Available Fe content in soil decreases during planting period due to absorption of Fe by plants and increased soil pH. Fe-toxicity caused by inundation and pyrite has a significant effect on fresh weight and dry weight of shoot, number of panicles, total grain content and total grain quantity, as well as on weight of grain content and total weight grain. The absorption of Fe at the root is higher than Fe in shoot and Fe in grain. Inundation treatment and pyrite dose had a significant effect on Fe content of tissue (ppm) in shoot and grain, also the absorption of Fe in shoot.

Keyword: inundation, pyrite, soil acidity, available Fe, Fe toxicity