

## INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh ketersediaan oksigen yang berbeda terhadap pertumbuhan awal tanaman padi dan mengetahui pengaruh tingkat salinitas terhadap pertumbuhan awal tanaman padi. Penelitian ini dilaksanakan pada bulan April hingga Juni 2015 di rumah kaca, Fakultas Pertanian, Universitas Gadjah Mada, Yogyakarta. Rancangan percobaan yang digunakan adalah *Split plot* dengan perlakuan aerasi dua aras (aerasi dan tanpa aerasi) sebagai *main plot* dan tingkat salinitas empat aras (0 mM NaCl, 50 mM NaCl, 100 mM NaCl, dan 150 mM NaCl) sebagai *sub plot*. Hasil penelitian menunjukkan perlakuan tanpa aerasi menghambat pertambahan panjang plumulae, jumlah daun, panjang radikula, dan bobot kering plumulae dibandingkan perlakuan aerasi. Perlakuan 100 mM dan 150 mM NaCl menghambat indeks vigor, pertambahan panjang plumulae, dan pertambahan panjang radikula dibandingkan perlakuan kontrol. Kombinasi perlakuan tanpa aerasi dan salinitas 150 mM NaCl menghambat penurunan bobot segar dan bobot kering endosperm serta menghambat penambahan jumlah stomata daun, bobot segar dan bobot kering radikula dibandingkan perlakuan 0 mM NaCl.

Kata kunci: oksigen, padi, salinitas

### ***ABSTRACT***

This research was aimed to determine the effect of different oxygen availability on the early growth of rice seedling as well as the effect of salinity. The research had been conducted from April to June 2015 at the greenhouse of the Faculty of Agriculture, University Gadjah Mada, Yogyakarta. The Split plot design was used with two levels of aeration treatment (aeration and without aeration) as main plot and salinity level with four levels (0 mM NaCl, 50 mM NaCl, 100 mM NaCl, and 150 mM NaCl) as sub plot. The result of the research showed that in no aeration treatment length of plumulae, number of leaves, radicula length, and dry weight of plumulae were lower than those in the aeration treatment. The treatment of 100 mM and 150 mM NaCl decreased vigor index, length of plumulae, and length of the radicula compared to the control. Combination of no aeration treatment and 150 mM NaCl inhibited decrease of fresh weight and dry weight of endosperm and decreased number of stomata, fresh weight and dry weight of radicula compared to 0 mM NaCl treatment.

Key words: oxygen, rice, salinity