

Pengaruh Asam Salisilat terhadap Pertumbuhan dan Aktivitas Antioksidan Selada (*Lactuca sativa* L.) pada Cekaman Genangan = Effect of Salicylic Acid on Growth and Antioxidant Activity of Lettuce (*Lactuca sativa* L.) in Waterlogging Stress

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Abstrak

Cekaman genangan merupakan kondisi pori-pori tanah terisi oleh air sehingga menurunkan pasokan oksigen. Penurunan pasokan oksigen menghambat pertumbuhan akar sehingga menurunkan serapan unsur hara. Hasilnya, daun klorosis dan gugur serta pertambahan tinggi tanaman terhambat. Cekaman genangan juga menyebabkan akumulasi Reactive Oxygen Species (ROS) sehingga terjadi cekaman oksidatif pada tanaman. Asam salisilat secara eksogen merupakan solusi untuk meningkatkan pertumbuhan tanaman pada cekaman genangan melalui peningkatan aktivitas antioksidan. Tujuan penelitian adalah mengetahui pengaruh pemberian asam salisilat dengan konsentrasi 0,1 mM, 0,5 mM, dan 1 mM terhadap pertumbuhan dan aktivitas antioksidan selada (*Lactuca sativa* L.) yang mengalami cekaman genangan setinggi dua cm di atas permukaan media tanam selama tiga hari. Perlakuan asam salisilat diberikan dua hari sebelum cekaman genangan dengan Rancangan Acak Kelompok yang terdiri atas lima perlakuan dan lima ulangan. Pertumbuhan tanaman yang diukur antara lain tinggi tanaman dan jumlah daun. Aktivitas antioksidan diuji dengan metode 2,2-Diphenyl-1-picrylhydrazyl (DPPH). Hasil penelitian menunjukkan bahwa pemberian larutan asam salisilat 0,1 mM, 0,5 mM dan 1 mM belum memberikan pengaruh terhadap tinggi tanaman, jumlah daun dan aktivitas antioksidan selada pada cekaman genangan.

.....Waterlogging stress is a condition in which the soil pores are filled with water, thereby reducing the supply of oxygen. Decreased oxygen supply inhibits root growth thereby reducing nutrient uptake. As a result, chlorosis and fall leaves and stunted plant height increase. Waterlogging stress also causes the accumulation of Reactive Oxygen Species (ROS) resulting in oxidative stress in plants. Salicylic acid exogenously is a solution to increase plant growth in waterlogging stress by increasing antioxidant activity. The aim of the study was to determine the effect of salicylic acid application at concentrations of 0.1 mM, 0.5 mM, and 1 mM on the growth and antioxidant activity of lettuce (*Lactuca sativa* L.) which was subjected to waterlogging stress as high as two cm above the surface of the planting medium for three days. Salicylic acid treatment was given two days before waterlogging stress in a randomized block design consisting of five treatments and five replications. Plant growth measured includes plant height and number of leaves. Antioxidant activity was tested using the 2,2-Diphenyl-1-picrylhydrazyl (DPPH) method. The results showed that the administration of 0.1 mM, 0.5 mM and 1 mM salicylic acid solution had no effect on plant height, number of leaves and antioxidant activity of lettuce under waterlogging stress.