Pengaruh Vvriasi sumber nitrogen dan pemberian strain nostoc GIA13a terhadap pertumbuhan vegetatif tanaman bayam (amaranthus viridis l.) pada sistem hidroponik = The effect of nitrogen form variation and inoculation of nostoc strain GIA13a on vegetative growth of spinach (amaranthus viridis l.) using hydroponic system

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Abstrak

Penelitian dilakukan untuk mengetahui adanya pengaruh variasi bentuk sumber nitrogen serta pemberian strain Nostoc GIA13a terhadap pertumbuhan vegetatif tanaman bayam. Proses penanaman tanaman bayam dilakukan selama 24 hari menggunakan sistem hidroponik Nutrient Film Technique NFT yang telah dimodifikasi. Perlakuan yang diberikan, yaitu medium Hoagland dengan sumber nitrogen nitrat yang ditambah strain Nostoc GIA13a P1, sumber nitrogen nitrat P2, sumber nitrogen amonium dan nitrat P3, sumber nitrogen amonium P4 dan sumber nitrogen amonium yang diberikan strain Nostoc GIA13a P5. Pemberian strain Nostoc GIA13a dilakukan pada 0 Hari Setelah Tanam HST dan 14 HST masing-masing sebanyak 2 g. Hasil uji ANOVA ? = 0,05 menunjukkan bahwa perlakuan yang diberikan memengaruhi tinggi tanaman, panjang akar, kadar klorofil total, berat basah dan berat kering tanaman bayam pada 24 HST. Perlakuan P2 menghasilkan tinggi tanaman, panjang akar, berat basah dan berat kering yang tertinggi dibandingkan dengan semua perlakuan dan didukung dengan hasil uji LSD ? = 0,01. Sementara itu, berdasarkan parameter tinggi tanaman, panjang akar, berat basah dan berat kering menunjukkan bahwa penambahan strain Nostoc GIA13a pada P1 dan P5 menunjukkan adanya kompetisi penyerapan nutrien antara tanaman bayam dan Nostoc GIA13a. Hasil pengukuran kadar klorofil menunjukkan bahwa penambahan strain Nostoc GIA13a pada perlakuan P1 dapat meningkatkan kadar klorofil tanaman bayam didukung dengan uji LSD ? = 0,01.

.....The aim of the experiment was to determine the effect of nitrogen form variation and inoculation of Nostoc strain GIA13a on vegetative growth of spinach. The plants were grown in Nutrient Film Technique NFT hydroponic system for 24 days. The treatment which was given is the Hoagland nutrient solution with nitrogen source form sole nitrate with addition of Nostoc strain GIA13a P1, sole nitrate P2 , with both of nitrogen form ammonium and nitrate P3 , sole ammonium P4 and ammonium with the addition of Nostoc strain GIA13a P5 . Nostoc strain GIA13a was applicated as much as 2 g on the first day of cultivation in the hydroponic system and at 14 days after planting. The result of ANOVA test 0,05 showed that there was statistically difference between treatments on plant height, root length, chlorophyll content, wet weight and dry weight. Based on LSD test 0,01, P2 treatment showed the highest result in the following parameters, i.e. plant height, root length, wet weight and dry weight. The result from the application of Nostoc strain GIA13a to nutrient solution on P1 and P5 treatment showed that there was a competition for nutrient absorption between spinach and Nostoc strain GIA13a itself. Meanwhile, the result of chlorophyll content measurements showed that the inoculation of Nostoc strain GIA13a on P1 could increase chlorophyll content on spinach leaf, supported by LSD test 0,01.