

The effect of different Phosphate fertilizer on qualitative and quantitative traits of strawberry under inoculation with solubilizing phosphate microorganisms

maryam mahdavi gorabi*,

Abstract Use of bio-fertilizers decreased damages of chemical fertilizers to environment. As Phosphor is one of the most important and necessary element which plants need for their growth and productivity, microorganism has been indentified as an alternative to chemical fertilizer to increase soil fertility and crop production in sustainable agriculture. In order to study of the effect of different Phosphate fertilizer on qualitative and quantitative of strawberry under inoculation with solubilizing phosphate microorganisms, a factorial experiment based on randomized complete blocks design (RCBD) carried out by using two factors including phosphate fertilizer and tree levels of (P_0 : non-application of phosphate, P_1 : 29 mg/kg of phosphate, P_2 : 56 mg/kg of phosphate) and solubilizing phosphate microorganisms in six levels of (B_0 : control, B_1 : strain bacteria R-4, B_2 : strain bacteria R-48, B_3 : strain bacteria R-108, B_4 : strain bacteria R-156 and B_5 : mycorrhizal fungi), including 18 treatments, 3 replication. In this study's some morphological traits (number of fruit, weight of fruit, number of leaf, root's length, root's, fresh and dry weight) and physiological traits (TSS, vitamin C , total chlorophyll of leaf, fruit and leaf phosphate) were evaluated. Results showed that the effect of phosphate fertilizer have significant difference all of the trait except the length root's and TSS and moreover effect of solubilizing phosphate microorganisms have significant difference all of the trait except the dry weight. In comparison whit other treatment B_2P_4 (56 mg/kg phosphate strain bacteria R-156) and P_2B_5 (56 mg/kg phosphate mycorrhizal fungi) were the best treatment. So use of solubilizing phosphate microorganisms with appropriate concentration of nutrient uptake in substrates can be replace of

chemicals fertilizer for plant strawberry. Key words: strawberry, phosphor, bacteria solubilizing phosphate, mycorrhizal fungi

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