

Abstract:

In order to investigate the effect of iron nanoparticles on morphological characteristics and chemical composition of sunflower plant, a completely randomized design with 5 treatments and 3 replications experiment in the educational and research greenhouse of the Zabol university (Aj) (Chah-Nimeh) in crop year 2017-2018 was conducted. The fertilizer treatments included (control, nanoparticles made from alfalfa (*Medicago sativa*), nanoparticles made from basil (*Ocimum basilicum*), nanoparticles made from cinnamon (*interfaccia grafica*), nanoparticles made from Lepidium (*Lepidium draba*), nanoparticles made from eucalyptus (eucalyptus globulus)). For this project, iron fertilizers were used in two levels (soil use: 0.3, 0.405 mg / kg soil, and soluble application: 0.25, 0.50 gr/liter, with control). Based on the results, biosynthetic iron nanoparticles play a significant role in growth indices root fresh weight, fresh and dry weight of the shoot, the content of chlorophylls b and total, the enzyme ascorbate, the element concentration Phosphorus, iron as well as the absorption of nutrients iron, potassium of sunflower plant, as they had a significant effect at 5% level on all studied parameters. Also, there is statistically significant effect on the shortest root length, root diameter, plant height, content of chlorophyll a, enzymes catalase and guaiacol and concentration potassium and adsorption phosphorus at 1% level. And dual cross-correlation has significant effect (levels- iron resources) on chlorophyll a at level 5% and for plant diameter at 1% level. The simple effects of iron sources on the content of carotenoid and PMSI at 1% level and on the absorption of the element manganese at 5% level have a statistically significant effect. Regarding the consumption methods , it should also be noted that both soil and spray application methods have a positive effect on root and shoot growth indices, leaf chlorophyll content and aerial organ enzymes, and the nutrients concentration in the root and air organs of Sunflower plant.

Key words: Characteristics, Iron Nanoparticles, Made a Living, Morphological, Sunflower Plant.



University of Zabol
Graduate School
Faculty of Soil and Water
Department of Soil Science

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Title

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Supervisors

Dr. A. Gholamalizadeh Ahangar

Advisors

M. Ghorbani

T. Hadadi

By

M. Poudineh karami

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