University of Zabol
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College of Basic Sciences
Department of Biology
Thesis for master's degree In study of plant physiology

Title

Effect of Cr-Co-Ni ferrite nanoparticles on some growth and physiological Parameters of *Ocimum basilicum L.*

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Abstract

Nanoparticles are primary particles that are less than 100 nanometers in size. In today's world, nanotechnology as the most advanced technology of the present age has been able to penetrate into all sectors and angles of human, animal, plant, environmental and industrial life and with its innovation, affect their current and future status. Put yourself. This study was performed to investigate the effects of nickel-chromium-cobalt ferrite nanoparticles in different concentrations (100 ppm, 200 ppm, 500 ppm) on growth and physiological indices of basil.For this purpose, after the synthesis of the compounds, the melting point, IR spectrum and NMR spectrum were taken from the compounds. The effect of these compounds in different concentrations on germination, growth and physiological parameters of basil including phenol and total flavonoids was investigated. The results showed that for all tested traits in all three combinations of chromium, cobalt and nickel ferrite in all concentrations, a significant increase was observed compared to the control.In general, it can be stated that the greatest effect on stem dry weight was related to the concentration of 100 ppm of compounds, the highest amount of root length was related to the concentration of 100 ppm chromium, the highest value of stem length was related to the concentration of 100 ppm nickel, the highest amount of phenol was related to chromite ferrite at 100 ppm The highest amount of flavonoids is related to the concentration of 200 ppm of cobalt ferrite compound, the highest effect on the antioxidant activity is related to the concentration of 100 ppm of nickel ferrite compound. Therefore, it can be said that these differences in terms of the studied traits can be due to differences in compounds and their concentrations, so it can be said that depending on the concentration of different compounds showed different effects, hence the optimization of concentration and type of compound. It is important.

Keywords: Nano Ferrites, nikel- Chrome- Cobalt, Growth, Physiological parameters, *Ocimum basilicumL.*