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Biofortification of Radish (*Raphanus sativus* L.) Microgreen with Nano Zinc Oxide

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ABSTRACT

Zinc is a vital trace element for human health since it is necessary for many physiological functions, such as metabolic pathways and gene control. One tactic to combat this nutritional problem is to eat foods that have been biofortified with zinc. ZnO nanoparticles may improve the phytochemical composition of microgreens and increase their nutritional value. Microgreens are immature seedlings that are picked shortly after their real leaves appear. In recent years, they have been a popular new culinary trend since they provide our meals with strong flavours, a variety of hues, and textures. Radish is grown and consumed all over the world and is considered part of the human diet. Microgreens are regarded as a viable target crop for mineral biofortification due to their favourable response to nutrient inputs. Therefore, this study aimed to examine the effects of nano zinc oxide at different application rates (0, 5, 10, 15 and 20 mg/L of ZnO) on the weight and quality of radish microgreens. Microgreens treated with 10 mg/L of nano ZnO showed the highest weight of 100 seedlings and length of seedlings (14.92 gm and 11.9 cm, respectively). The highest content of Zn was observed with 10 mg/L of nano ZnO, while the highest content of Fe was observed with 20 mg/L ZnO. In conclusion, Zn biofortification with nano zinc is effective in enriching radish microgreens with zinc and also enhances growth parameters.

Keywords: microgreens, growth parameters, zinc, nanoparticles, biofortification

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