World Academy of Science, Engineering and Technology
International Journal of Agricultural and Biosystems Engineering
Vol:14, No:12, 2020

Influence of Magnetic Bio-Stimulation Effects on Pre-Sown Hybrid Sunflower Seeds Germination, Growth, and on the Percentage of Antioxidant Activities

Authors : Nighat Zia-ud-Den, Shazia Anwer Bukhari

Abstract : In the present study, sunflower seeds were exposed to magnetic bio-stimulation at different milli Tesla, and their effects were studied. The present study addressed to establish the effectiveness of magnetic bio-stimulation on seed germination, growth, and other dynamics of crop growth. The changes in physiological characters, i.e. the growth parameters of seedlings (biomass, root and shoot length, fresh and dry weight of root shoot leaf and fruit, leaf area, the height of plants, number of leaves, and number of fruits per plant) and antioxidant activities were measured. The parameters related to germination and growth were measured under controlled conditions while they changed significantly compared with that of the control. These changes suggested that magnetic seed stimulator enhanced the inner energy of seeds, which contributed to the acceleration of the growth and development of seedlings. Moreover, pretreatment with a magnetic field was found to be a positive impact on sunflower seeds germination, growth, and other biochemical parameters.

Keywords : sunflower seeds, physical priming method, biochemical parameters, antioxidant activities
Conference Title : ICAH 2020 : International Conference on Agriculture and Horticulture
Conference Location : Dubai, United Arab Emirates
Conference Dates : December 17-18, 2020