



RESEARCH PAPER

Effect of different sources of zinc on the activities of plant and soil enzymes

B. Aparna*, R. Gladis, Gowripriya and U. A. Aswathy

Department of Soil Science and Agricultural Chemistry, College of Agriculture (KAU), Vellayani (Kerala) India
(Email: aparna.b@kau.in)

Abstract : The present investigation was conducted to study the effect of zinc fertilization on major biometric characteristics, yield and post-harvest soil nutrient status. The experiment was carried out at college of Agriculture, Vellayani during 2017 - 2019. The experiment was laid out in Randomized Block Design with eight treatments and three replications. The treatments were Absolute control (T_1), N, P, K as per POP- 75:45:25 kg ha⁻¹ (T_2), N, P, K+ Soil application of Zn as ZnSO₄- 10 kg ha⁻¹ (T_3), N, P, K+ Foliar application of Zn as 0.5 per cent ZnSO₄ (T_4), N, P, K+ Zn as Zn EDTA-18 kg ha⁻¹ (T_5), N, P, K+ Zn solubilizer -5 per cent (T_6), N, P, K+ Zn Humate- 44 kg ha⁻¹ (T_7), N, P, K+ K solubilizer 5 per cent (T_8). From the study, it was observed that the treatment T_7 with the application of N, P, K+ Zn Humate (44 kg ha⁻¹) recorded the highest for enzymes such as carbonic anhydrase, peroxidase and catalase viz., 910 EU g⁻¹, 48.17 activity min⁻¹ g⁻¹ and 27.06x10³ units ml⁻¹, respectively. An incubation study was carried out to assess the trend os activity of the enzymes and the results revealed peroxidase and carbonic anhydrase showed an increasing trend in activity while peroxidase registered a decreasing trend. Treatment T_4 with the application of Soil + Zn as 1.5 ppm ZnSO₄ registered the highest value for peroxidase (11.98 activity min⁻¹ g⁻¹) and carbonic anhydrase activity (385 EU g⁻¹) in the incubation study.

Key Words : Peroxidase, Carbonic anhydrase, Catalase, Zinc solubilizer

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