**Abstract**

The present study describes the potential role of additional phosphorus (P) on alleviating cadmium (Cd)–induced toxicity in vetiver plants. The plant growth was significantly affected at 50  mg L−1 Cd treatment compared to the control, while it increased by 13% with addition of P in the medium when compared with Cd treatment. Accumulation of Cd content in plants showed positive correlation with Cd and Cd+P combination exposure, whereas it was slightly decreased at higher doses of Cd+P combination treatments in roots compared to the shoot exposed to Cd. A decreased level of photosynthetic pigments was noticed with increasing the Cd concentrations, but it was slightly enhanced with Cd and P combination treatments over Cd treatment. Both hydrogen peroxide (H2O2) and malondialhyde (MDA) contents were found to be increased with increasing Cd dose. The antioxidative enzymes such as superoxide dismutase (SOD), catalase (CAT), and peroxidase (POX) activities were found to be increased at lower doses of Cd