

Effect of heavy metal ion on the antioxidant properties of *Mentha spicata*

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Oxidative stress arises when there is a marked imbalance between the production and removal of reactive oxygen species (ROS) in favor of the prooxidant balance, leading to potential oxidative damage. ROSs was considered traditionally to be only a toxic by product of aerobic metabolism. Plants can't move away and are therefore continuously confronted with unfavorable environmental conditions (such as soil salinity, drought, heat, cold, floods and heavy metal contamination) Like all other organisms, plants have evolved different mechanisms to maintain physiological concentrations of essential metal ions and to minimize exposure to non-essential heavy metals. Some mechanisms are ubiquitous because they are also required for general metal homeostasis, and they minimize the damage caused by high concentrations of heavy metals in plants by detoxification, thereby conferring tolerance to heavy metal stress. Among heavy metals, cadmium (Cd) and Nickel is a non-essential and toxic metal, rapidly taken up by roots and accumulated in various plant tissues. In the present study, the effects of heavy metals generating antioxidative defense systems (i.e. total phenolics estimation, antioxidant activity assay etc) were studied on the leaves of *Mentha* plants grown in soil polluted with heavy metals (Co, Ni, Pb, As). The elevation of non enzymatic activity in leaves was the only more general reaction to metal exposure, which is seen by analyzing the effects of soil metal contamination on *Mentha spicata*.

Biography

Tara Pokhriyal has completed her M.Sc. Biochemistry at the age of 21 years from Lovely Professional University.

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