

## Role of Proline as Osmolyte in Plants

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### INTRODUCTION

Plants are normally grown on the soil media. They get their nutrients and water from soil. Soil is composed of many compounds. But human activities also have a strong impact on the soil ingredients. As now-a-days, due to strong industrialization and modernization there is mixing up of pollutants in the soil which have a negative role in plants root absorption. Plants take water and nutrients from soil but soil is full of contaminants. So, these toxic chemicals enter into the plants but there is a process of Osmoregulation. This process has the responsibility to cope with toxic chemicals but it also regulates all the materials which exit or enter from or into the cell. So, plants has a specific Osmolyte called Proline. Which is encoded by the genes. These genes are present on the chromosomes but any change in these genes may lead to absence of this chemical. Proline plays a strong role in the cell, it hinders the toxic chemicals to enter into the cell. Proline is normally found in all plants. This specific nature of Proline against heavy metals toxicity makes the proline very distinctive. There is a series of bio-chemical reactions which includes oxidation and reduction processes in which different ions are released by the cells of plants which perform a strong role in the chemistry of cell physiology. Proline has also another role in Osmoregulation. It regulates the entrance of water as well as food. Proline has different enzymes which bind to the heavy metals likewise mercury, there are co-enzymes anti CO-M3 and CO-M4 which completely stops the entrance of heavy metals. So, we conclude here that by spraying the proline we can also increase the level of Osmolyte in plants to cope with heavy metals toxicity in plants.

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