

Advancements in Environmental Biotechnology



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CHAPTER 1
SALICYLIC ACID: AN EFFECTIVE TOOL TO COMBAT MANCOZEB
TOXICITY IN PLANTS

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ABSTRACT

The use of fungicides is the continuous practice in agriculture to protect crops from various fungal diseases. Mancozeb (MZ(2-)), is a fungicide classified in the carbamate pesticide family, It is registered for use on a variety of horticulture and agricultural crops and seed treatment of cotton, potatoes, corn, safflower, sorghum, peanuts, tomatoes, flax, and various cereal grains. The fungicide mancozeb has a considerable deleterious impact on soil microflora, nitrification, ammonification, soil microbial biomass, carbon mineralization, and soil enzymes which may result in harmful effects on nutrient uptake and plant growth. Salicylic acid (SA) is an important signal molecule, regulating oxidative stress response in plants. It was found in many studies that exogenous application of salicylic acid could promote the degradation of pesticides and suppress the accumulation of pesticides in plant tissues. The present chapter covers the aspects of pesticidal response of plants and evaluates the contribution of Salicylic acid in mitigating pesticide-induced stress and increasing the tolerance of plants.

Keywords: Salicylic acid; Mancozeb; Pesticides; Stress