

# The reaction of woody plants to growing conditions in the man-made environment

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## Abstract

© 2018 IAEME Publication. Copper containing enzymes, polyphenol oxidase and ascorbate oxidase, contribute to plants adaptation to technogenic environmental conditions. The purpose of the present study was to evaluate the influence of pollution level in combination with habitat specifics on the activity of polyphenol oxidase and ascorbate oxidase in leaves of woody plants. The authors identified common response of polyphenol oxidase activity in native species and specific response in introduced species to interrelation between pollution level (category or stand type related) and micro conditions of plants habitat. The rate of polyphenol oxidase activity in the leaves of introduced species was higher than in native species. Increased rate of polyphenol oxidase activity is the cells response to increase of demand in gases, caused by high content of dust particles and other pollutants that prevent normal gas exchange in leaves. Ascorbate oxidase activity response to the complex of factors, related to plants stand type and habitat micro conditions, in introduced species of woody plants was common, unlike in the studied native species. The studied copper containing enzymes have different functions in the processes of plants adaptation response to technogenic stress.

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## Keywords

Anthropogenic growing conditions, Ascorbate oxidase activity, Polyphenol oxidase activity, Woody plants

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