

GROWTH STUDIES OF SOME TREE SPECIES GROWING IN URBAN ATMOSPHERE

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ABSTRACT : In order to determine the differences in response of tropical evergreen and deciduous trees towards urban air pollution three different tree species viz. Ashok (*Polyalthia longifolia*) Linn (Family Caesalpiniaceae), Mango. (*Mangifera indica*) Linn (Anacardiaceae) and Shisham (*Dalbergia sissoo*) Linn (Family Papilionaceae) growing in different packets of Jaunpur city were studied. The trees are exposed to ambient urban air dominated by automobile and vehicular exhausts. A reference site was also selected as control away from the city area in the same locality. The biomass, growth at breast height (G.B.H), growth rate, canopy cover, number of leaves per twig with chlorophyll content were estimated. Trees were also tested for their biochemical parameters like ascorbic acid (AA), soluble sugars (SS), glutathione (G.S.H.) and starch (St.) contents. Phloem exudates were also collected and soluble sugars are estimated to monitor translocation of photosynthates. The difference between one tree species growing at polluted site than that of control one were significant at ($P < 0.05$). The data indicate a decline in leaf chlorophyll content, biomass, canopy cover, number of leaves per twig in affected plants. Higher accumulation of starch were observed in deciduous species. The G.B.H., growth rate, amount of photosynthate, rate of dry matter accumulation (i.e. productivity) is reduced significantly in all the tree species at affected sites. The leaves show premature defoliation in affected plants. The evergreens showed higher translocation of photosynthates and continuous growth was observed.

Key Words : Handy air sampler, G.B.H, canopy, photosynthetic pigments, carbohydrate.