MICRO-MORPHOLOGICAL STUDIES OF TWO SHRUB SPECIES AGERATINA ADENOPHORA (R. M. KING & H. ROB) AND LANTANA CAMARA L. (SENSU LATO) AFFECTED BY AIR POLLUTION

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ABSTRACT

Air pollution has become a serious environmental concern which is a major problem of Kathmandu Valley. The plants growing along the roadsides of the Kathmandu are under stress. The dust depositions on the leaves of shrubs were adversely affected by air pollution. It was found that dust particles affect leaf biochemical parameters which have changes micro-morphological symptoms. The study deals visible changes in the micro-morphological structure like specific leaf area, size of stomata, the thickness of epidermis and cuticle of leaves of Ageratina adenophora and Lantana camara investigated under polluted and control site (relatively less polluted area) of Kathmandu valley. Results showed that the plant species growing in a polluted site exhibited the significant reduction in the size of stomata, a thickness of the epidermal layer, a thickness of cuticle and the specific leaf area but the density of stomata increases in the polluted site as compared to the control site. Reduction in various parameters of two shrub species studied at three sites clearly indicates the deleterious effect of air pollution on plant health. It is concluded that vehicular emission had a significant effect on micro-morphological changes.

KEYWORDS: Cuticle Thickness, Epidermal Thickness, Stomata Density, Specific Leaf Area, Roadside Pollution & Vehicular Emission

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