

ABSTRACT

The present research work was carried out to investigate the impact of automobile exhausts on road side plantations of Lahore city. Seven roads were selected according to their traffic load (busyness) and successive surveys were conducted in the road sites to work out plant inventory. In total thirty six plant species were recorded and on the basis of their height thirty one categorized as tree species and five as shrub species. Out of these thirty six plant species, two trees, i.e. *Ficus religiosa* L. and *Alstonia scholaris* (L.) R.Br. and a shrub, *Bougainvillea spectabilis* Willd. were selected as bioindicators species on the basis of their common occurrence and as easily accessible.

Five samples of each tree while three of a shrub species were collected to analyze their morphological, anatomical, physiological and biochemical aspects. *A. scholaris* (L.) R.Br. was found to be the best survivalist as compared to *F. religiosa* L. as road avenue tree, along the roads suffering with the drastic air pollution stress. *B. spectabilis* Willd. was observed enjoying the best time of the life like *A. scholaris* (L.) A general trend of higher values of all the parameters viz: leaf length, leaf width, petiole length, leaf area index, amount of dust, fresh weight, dry weight, % moisture contents, photosynthetic rate, transpiration rate, stomatal conductance, stomatal index and % clogging capacity were recorded in plant samples of all the three plant species as compared to control samples except in case of the amount of dust (g) in which *versa* condition was noticed.

This indicated a negative impact of automobile exhausts on the health of the plant species, ultimately reducing each aspect of the plants. The ability of the leaves of these plants to retain the higher load of fuel smoke dust on them was expected to be involved in reducing the air pollution. Although this smoke dust load is no good to plants themselves and moreover if inhaled by humans, can cause respiratory disorders.