

## ABSTRACT

The urban forestation is important in combating the atmospheric pollution and noise pollution. It is important to decide that what plants are better in developing the urban green belts that could be proved highly advantageous for air pollution abatement. The present study emphasis on two criteria viz. Carbon sequestration potential and Air Pollution Tolerance Index (APTI). These may be considered as good tools, that deals with the mitigation potential of plants in accordance with their atmospheric Carbon and air pollution tolerance. The research carried out in populous city Lahore, the second largest city of Pakistan. Six busiest roads sites, 38 tree species from 20 plant families considered for Carbon (C) sequestration. Five most abundant trees were sought out among these families for determination of APTI. Results of the study revealed that canal road possessed highest capacity of C sequestration of about 6360.89 tons and accounting 1045.21 tons by *Mimosops elengi* L. most potential tree species for the C mitigation. Allama main boulevard was determined as lowest contributing for C sequestration just around 154.01 tons. The tree species *Mimosops elengi*, *Syzygium cumini*, *Mangifera indica*, *Alstonia scholaris*, *Eucalyptus citriodora* were found to be most abundant in Lahore as compared to other tree species and accounted for highest carbon stock. *M. elengi*  $40.13 \pm 1.40$  and *S. cumini*  $27.84 \pm 2.19$  have highest value of APTI and *E. citriodora* (1238 tons), *M. elengi* (950 tons) and *A. scholaris* (875 tons) are highest in term of Carbon stock and Carbon sequestration potential when compared with different road side plants. Canal Road was the most densely vegetated among all studied Roads of the city. The trees having APTI >17 and more Carbon sequestration potential can be used for green belt development of the Lahore. The study of combined affect Carbon sequestration potential and Air Pollution Tolerance Index (APTI) is very crucial for selecting most appropriate trees for urban plantation in and around the vicinity of Lahore.