

## ABSTRACT

The management of air pollution and automobile exhaust the major problem in the current era. The contribution of automobile exhaust is one of the main sources of urban air pollution. The automobile exhaust is not only impacting human health but also the vegetation. Environmental pollution effect the genomorphic and biochemical characteristics of roadside vegetation. Mimusops elengi L. is one of the most planted trees in the Lahore city for its huge canopy cover, especially near the roadside. The present study is the molecular assessment of automobile exhaust on Mimusops elengi L. planted along the roadside of Lahore city. The comparative biochemical analysis to determine the air pollution tolerance index by applying different parameters such as the pH of leaves, total chlorophyll contents, ascorbic acid contents, and relative water contents. Genomic DNA extracted by modified CTAB method. PCR amplification for GRF-5 gene and sequence analysis to detect the mutation by chromatogram. The molecular analysis to check the alteration in DNA through comet assay. The result showed that the high APTI value (9.601) was on Mall road after Canal road (7.835). The normal value of APTI (5.69) was seen at the control site (Changa Manga forest). The molecular analysis showed GRF-5 gene expression in the control site, the genotoxicity analysis through comet assay showed DNA damage in experimental sites. Automobile exhaust has great potential not only in the alteration of biochemical parameters but also in genomorphic characteristics. The plantation of pollution-tolerant plants on the roadside has great importance to execute the reduction of air pollution.