

## **Air Pollution Effect on Physiological, Anatomical and Morphological Characteristics of Two Plant Species *Malva Parviflora* and *Hordeum Glaucum* in Steel Factory Area in Ahvaz**

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### **Abstarct**

In this research, the effect of air pollution on proline concentration, soluble sugar, anatomical and morphological features was studied in two plant species *Malva parviflora* and *Hordeum glaucum* in 2009. The area of the stand steel factory of Khuzestan was considered as the polluted site and Shush region was considered as the control site, and sampling was carried out from the two sites, accidentally. Proline concentration and soluble sugar quantities were determined and compared using the spectrophotometric method. Twenty-seven and 21 morphological characters were measured in *Malva parviflora* and *Hordeum glaucum*, respectively. In addition, anatomical characters were compared in leaflets of the species grown in polluted and unpolluted sites. Finally, air pollution tolerance indices (APTI) were calculated. Results showed that air pollution causes increase in the amount of proline and soluble sugar in two species grown in polluted area in comparison with the control. Anatomical changes were observed in epidermal cells and collenchyma tissue. These changes showed increase in the tolerance of plant. These kinds of changes in *Malva parviflora* were more than those of *Hordeum glaucum*. Morphological results showed that changes in *Malva parviflora* were more than those of *Hordeum glaucum*. *Malva parviflora* was adapted to the polluted condition better than *Hordeum glaucum* and formed a new group. The results of ATPI confirm that the tolerance index of *Malva parviflora* is more than that of *Hordeum glaucum*.

**Keywords:** *Malva parviflora*, *Hordeum glaucum*, Air pollution, Anatomical-morphological features, Soluble suga