Air Pollution Effects in Some Plant Leaves
Morphological and Anatomical Characteristics within Baghdad City, Iraq

Abstract - The present study examined the air pollutants effects in seven plant species leaves, Olea europea L., Zizphus spina-christi L. Desf., Conocarpus lancifolius Engl., Albizia lebbeck L. Benth., Eucalyptus camaldulensis Dehnh., Clerodendron inermis L. Graeth and Dodonaea viscosa Jacq., distribute within Baghdad city. The leaves sample were collected from May (2016) to April (2017) in five regions within Baghdad city, which are Karrada, Sadr City, Shoula and Mansur, as well as Baghdad tourist island as a control region. The Sulfur dioxide (SO₂), Nitrogen dioxide (NO₂), Carbone monoxide (CO), Volatile organic compounds (VOCs) and Suspended particulate matter (PM) were measured in all study regions. The present study results showed an increase in concentration of all air pollutants in the four study regions compared to Baghdad tourist island, (SO₂) average was (0.56) ppm, while (NO₂) average was (0.80) ppm, (CO) average was (27.69) ppm, (VOCs) average was (5.99) ppm, while (PM) average was (480.80) μg /m³. The morphological and anatomical characteristics include length, width, area, number of stomata; the number of epidermis cells, and stomatal index were measured in plant leaves. E. camaldulensis leaves were recorded highest length rate (11.03) cm, while highest width rate (5.51) cm and leaf area rate (49.63) cm² were recorded in A. lebbeck leaves. The highest number of stomata and epidermal cells were also recorded in A. lebbeck leaves (101.25 and 738.85) in respectively. But highest stomatal index value was recorded in D. viscasa leaves (14.21).

Keywords - Air pollution, Plant leaves, Morphological characteristics, Anatomical characteristics.

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