

Article

Lichens as bioindicators of air pollution: Results from North Africa region

Abdallah Boumakhleb¹, Mohamed Toumi², Fathi Abdellatif Belhouadjeb^{3,4}, Abdelhamid Hassani⁵, Amar Khadoumi⁵

¹Department of Biological Sciences, Ecole Normale Supérieure de Kouba BP: 92, Algiers, 16050, Algeria

²Department of Nature and Life Sciences, Faculty of Science, University of Algiers 1, Didouche Mourad Street 16000, Algiers, Algeria

³National Institute of Agricultural Research (INRA, Algiers) BP: 200, 16200, Algeria

⁴Research Center of Agropastoralisme. Djelfa 17000, Algeria

⁵High Commissariat for the Development of the Steppe, Emir Abdelkader rd. Djelfa 17000, Algeria

E-mail: boumakhleb1@gmail.com

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Abstract

The atmospheric pollution is an international phenomenon which threatens the human life around the world. Contrary to North America and Europe, which have observatories of the atmospheric pollution, some other regions such as Africa are dispossess of this kind of institutions, things that pushed the scientists in the environment and air quality to use other methods which are simple and inexpensive, the most used is the biomonitoring and particularly with lichens. The aim of this study is to assess the air pollution using lichens as bioindicators and to create the air quality map using an interpolation method that based on the values of air quality index (AQI) in North Africa. The study was carried out in 63 sites distributed into three zones. The results show that 65.08% of sites have a medium rate of pollution, 26.98% of sites have a low rate, and only 7.94% present a high rate of pollution. The statistical analyses show that, the abiotic factors (the altitude values and the dominant wind) are positively correlated with the air quality values. The air quality map obtained allows us to detect the areas with a high level of atmospheric pollution in the region. We hope through this work to encourage the governmental agencies to become more involved with lichenological studies.

Keywords air quality; bio-monitors; lichens; interpolation; North Africa.

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1 Introduction

Human made atmospheric pollution has been a peril since the headway of science and innovation. Worldwide industrialization and human lifestyles has put an effect on environment matter of genuine concern, particularly today that the outcomes of human intervention are as of now obvious. Despite the way that environment is

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