

Floristic composition of the halophilic and salt-resistant plant population in Hammam-Bouhrara (Oran-Algeria)

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ABSTRACT

This phyto-ecological study is on halophilic and salt-resistant vegetation of Oran region. The semi-arid and sometimes arid climate has been defined and confirmed from a bioclimatic point of view. The pedological approach used shows a soil with sandy to silty-sandy texture, favoring regression of the vegetation and a halophilic vegetation set up. In this study, we analyze the floristic composition of the northern region of Hammam Bouhrara using multiple floristic surveys conducted at three stations along the Tafna wadi. Dominated by Mediterranean and Saharo-Sindian elements, the relatively poor flora (88 species in total) is biologically characterized by a clear dominance of therophytes (>33%) and chamaephytes (>19%) to the detriment of phanerophytes.

Keywords: Phyto-Ecology; Salt-Resistant Vegetation; Halophilic Vegetation; Botanical Characterization; Bioclimate; Hammam Bouhrara; Oran (Algeria)

1. INTRODUCTION

The Maghreb has one of the most remarkable floras of the Mediterranean basin. This may explain its climatic, geographic and geological diversity. Algeria in general and Oran in particular, is an area characterized by significant plant diversity.

For a long time, the flora and landscape of this region have been coveted and reshaped by the cultivation and grazing. The area is located solely in a semi-arid and arid bioclimate, with a temperate winter; the area is also subject to problems related to continentality in western Algeria.

The vegetation of the Oranian saline soils has been

studied by Simonneau [1], Dubuis and Simonneau [2,3] and Quézel and Simonneau [4], and its distribution relates to the soil salinity. The dominant plants are annual or perennial Salsolacea, forming either pure populations or associations, comparable to those described in the south of France [5].

In the Hammam-Bouhrara region, vast areas of both Tafna wadi shores, unsuitable for cultivation, are covered with halophytes. These soils, saturated with Na⁺ ions, are classified among Solonchak soils [6]. Their appearance is due to the phreatic water which deposits its salts on the surface during evaporation [2,7].

Knowledge of the natural vegetation, as a reflection of environmental conditions, should allow a diagnosis of the first face plant in these ecosystems.

The works in the region remain somewhat fragmented. We intend contribute floristic surveys that may be useful. The interpretation of the Oran halophilic populations is possible and effective in light of pre-forest formations derived from, because of the strong anthropic pressure exerted in the region. The area was also affected by drought from 1970 to 2000.

Through the various works done on this region [8,9], we have tried to identify the halophytes phytoecology aspects in the Northwest of Algeria (North of Hammam-Bouhrara). Can these aspects give us some suggestions for improving the disrupted flora capital? Do halophilic populations expand exclusively on the North banks of Tafna wadi? In an attempt to answer to these questions, we will deal in this paper successively through:

- Description of the physical environment;
- Bioclimatic and edaphologic characters;
- Floristic analysis.

2. SITES AND METHODS

2.1. Location and Choice of Sites of Study (Figure 1)

The study area is located in western Algeria and be-