



Floristic Diversity in Dahra Region Northwest of Chlef (Western Algeria)

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Abstract: The study was undertaken in the Dahra region northwest of Chlef West Algeria in 2019 to invent natural vegetation and characterized it in syntaxomic, biological, morphological and chorological terms .by Zuricho Montpellierine method .The method include all the plant species encountered and make the list of species on a square of 100 m² (minimum area). The floristic inventory indicated more than 138 taxa, divided into 54 families belongs to the Mediterranean biogeographic type with a percentage of 38.7%. There is a therophytization marked by a general invasion of annual species (39%).

Keywords: Diversity, Vegetation, Dahra, Chlef West Algeria

Mediterranean forests constitute a fragile natural environment that is deeply disturbed by multiple uses. The aggressions to which they have been subjected, however, varied considerably in frequency and intensity over the ages according to human demography, which has determined phases of progression or regression in their surface area. In Algeria, the forest is particularly important because it is an essential element of the ecological and socio-economic balance of rural regions in particular and of the country in general. The forest and pre-forest ecosystems of the study area are currently undergoing major changes. One of the main questions raised is to understand how and to what extent plant biodiversity contributes to the stability of the ecosystem and its functions. The efforts made to study the flora are very important in order to know the main biological traits of the plants and their biogeographical distribution (Hedidi et al 2019). The knowledge, classification, characterization and conservation of different taxa is a global scientific priority for biodiversity assessment and management (Belhacini 2015).

The study is based on the phytoecological, biological, morphological and biogeographical aspects of the plant cover with a vegetation inventory carried out in the station, based on stratified sampling.

MATERIAL AND METHODS

Geographical location: The study area is located in the extreme north-west, 70 km from the central headquarters of the wilaya Chlef, bordered to the west by the commune of

Ouled Boughaleme (wilaya of Mostaganem), to the east by the commune of Taougrite , in the north by the Mediterranean Sea and the commune of Marsa and to the south the commune of Sidi M'hammed Ben Ali or Renou (Wilaya of Relizane). It is located on a large part of the Dahra mountains, contains natural properties that are the same characteristics of the high plains like Algiers and Oran (36, 2574 -0.8508). The wilaya of Chlef have a Mediterranean climate, relatively cold in winter and hot in summer where the dry period extends over 6 to 8 months. The coldest month is January and the driest July when temperatures exceed 45°C.

Methodological approach: Within the Dahra region, surveys were done in a subjective way, taking care to respect the criterion of structural, floristic and ecological homogeneity. For our case the floristic surveys were carried out in plots of 100 m², containing almost all the species present. The botanical determination of species is done directly in the field, when the recognition of a species is not possible in the field, a sample is kept in a herbarium and identification was done using several references (Quezel and Santa 1962 -1963, Dobignard, and Chatelain 2010-2013, Sterry 2006).

RESULTS AND DISCUSSION

Systematic composition: The Dahra forest, the flora represented by 138 plant species, grouped into 54 families and 115 genera. The distribution of families in the study area is heterogeneous, the best represented families on the generic and specific level are: Asteraceae (19 species),

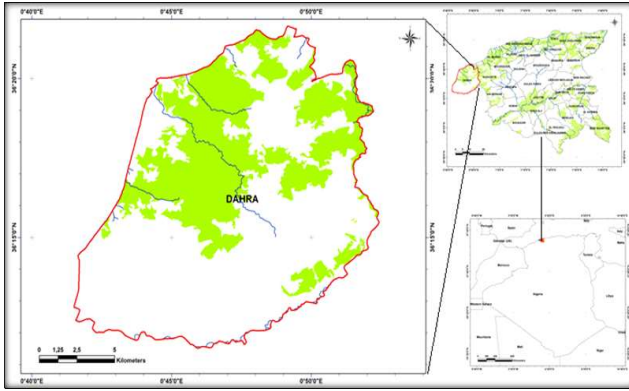


Fig. 1. Geographical location of the study area

Lamiaceae (14 species), Fabaceae (11 species) and Poaceae (06).

Biological characteristics: The biological distribution established shows a predominance of therophytes (39%), which is strictly linked to seasonal rainfall. These ephemerals seem to be influenced by the northern or southern exposure and by the more intense grazing. The latter determines a more modest increase in the southern slopes than in the northern slopes (Belhacini et al 2017). In the case of Chamaephytes 20%, this distribution is in line with Ghalem and Hassani (2020), Chamaephytes to be better adapted to low temperatures and aridity, their proportion increases as soon as there is degradation of forest environments because this biological type seems to be better adapted than phanerophytes to summer drought. The hemicryptophytes is 18%. Ghezlaoui and Benabadji (2017) observed that the abundance of hemicryptophytes in the Maghreb countries is to the abundance of organic matter and soil moisture. Geophytes (12%), are certainly less diversified in degraded environments due to monospecific tendency (overgrazing,

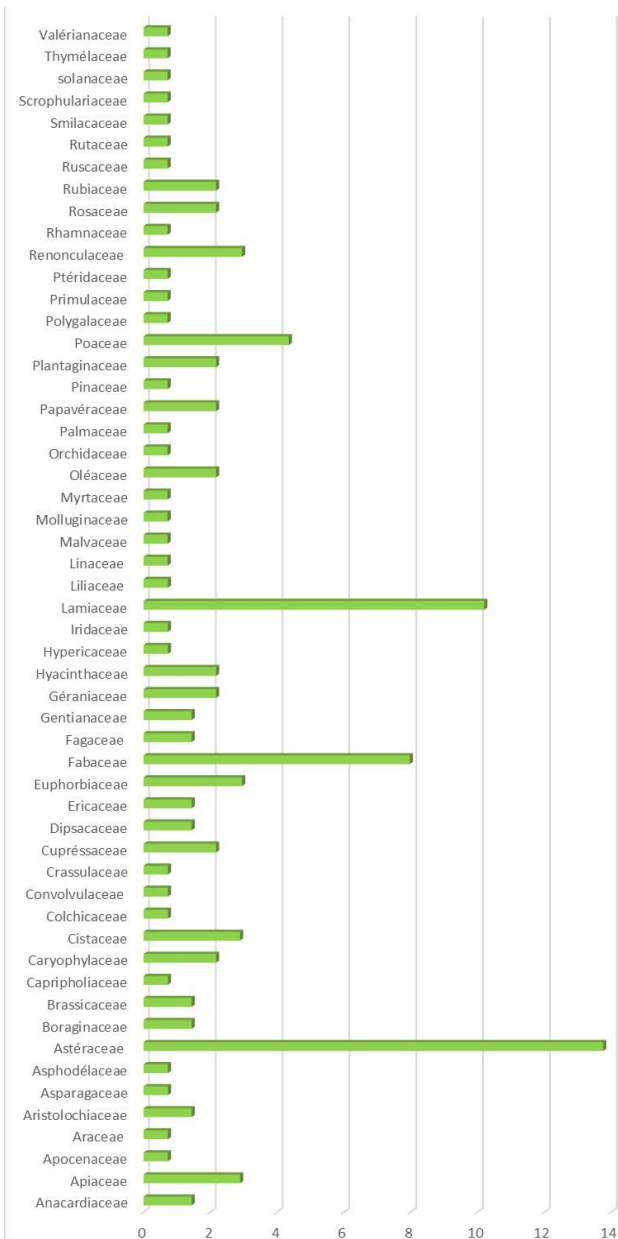


Fig. 2. Family composition in the study area

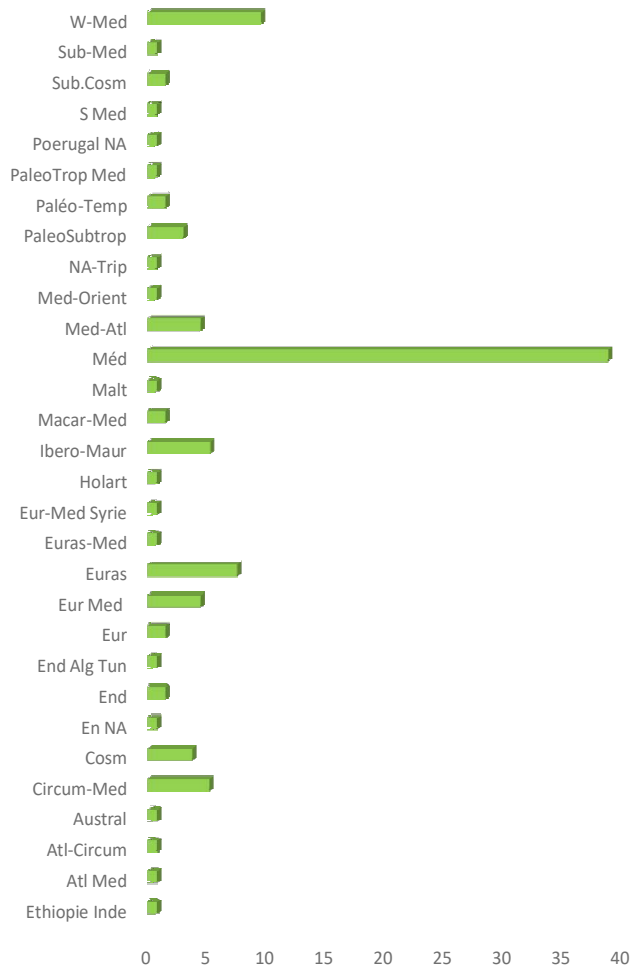


Fig. 3. Biogeography types in the study area

repeated fires). The phanerophytes with 11% of this biological type are represented essentially by *Quercus ilex*, *Q. coccifera*, *Arbutus unedo*, which reflect the changes in the state of the environment under the action of ecological and especially anthropozoic factors. The vegetation of the study area follows the following pattern: TH > CH > HE > GE > PH.

Morphological characterizations: From a morphological point of view, the plant formations in the study area are marked by heterogeneity between woody and herbaceous species, and between perennials and annuals. In the study area, herbaceous plants, either annuals or perennials, largely dominate with 72%, and woody perennials coming in second place with 28%. This result is similar to that of most research carried out on Algerian flora and vegetation.

Biogeographical characteristics: Among the species present in the Dahra region, several have a Mediterranean range with a percentage of 38.7%. This result is in agreement with the whole flora of Algeria by other researchers (Chenchouni 2012, Belhacini and Bouazza 2015).

The West-Mediterranean is with 13 species (9.5%) and the Eurasian with 10 species (7.44%) followed by the Ibero-Maur and Circum-Mediterranean elements (07) European-Mediterranean and Med-Atl (06), Cosm (05), PaleoSubtrop (04), Endemic EurMacar-MedPalaeo-TempSub and Cosm (02) and rest represents a low participation with only one species.

CONCLUSION

The forest of Dahra, part of the extreme west in Chlef, was chosen as a model for a contribution to the study of plant diversity and constitutes a natural environment disturbed by multiple uses which has determined phases of regression of their surface. The flora of the study area comprises 54 families, 115 genera and 138 plant species. The vegetation dynamics in the study area is considered rather favourable to therophytes and champhytes, where the Dahra region is marked by a high percentage of therophytes (39%), which are the most dominant. There is heterogeneity between woody and herbaceous species and between perennials and annuals.

The distribution of species shows a dominance of

Mediterranean type species in the study area with a percentage of 38.7%, followed by the western Mediterranean type with a percentage of 9.5% and the Eurasian element in third place with 7.44%. The impact of man on the environment is becoming more and more intense, and this has led to the disruption, sometimes irreversible, of ecological balances. The causes are obvious: overgrazing, cultivation, urbanization and eradication of woody plants, so the use or even overexploitation has largely contributed to the degradation of the vegetation cover in the study area. The emergency measures aimed at protecting and conserving this heritage will enable the irreversible degradation of these formations and thus ensure their sustainability.

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