



# ANALYSIS OF THE FLORISTIC DIVERSITY OF THE REGION OF BÉNI-SAF

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## Abstract

The present study concerns a flora located in North-West Algeria, it was devoted to the analysis of the effect of the main ecological and anthropogenic factors on plant communities.

The flora to study is in character herbaceous and or more or less shrubby where we have noticed the high proportion of Mediterranean species, it is represented essentially by the family of Asteraceae. On the statistical plan, we have tried to explain some relationships that link plant groups to environmental factors, especially climatic and edaphic factors where floristic analysis by the AFC numerical method presents a remarkable floristic richness explained by the rate of inertia which remains average nearby the disturbances which they underwent.

**Key words:** inventory, flora, halophytes, ecological factors, Beni-saf, Tlemcen.

## Introduction

The diversity of landscapes that is the result of the mosaic created by interacting ecosystems can be described according to the surface of the various ecosystems and the distance between them (Dajoz, 2000), indeed Gounot (1969) was also interested in the structure of the vegetal carpet and declared in particular “first of all the vegetable carpet has often, if not always, an aspect in mosaics, the homogeneity of the vegetal carpet can only exist if the mosaic is respectively, that is to say, results from a more or less regular arrangement of its different parts. However, disturbances play a major role in the heterogeneity of spatial and temporal structure as well as in the dynamics of natural communities; they are agents of natural selection in the evolution of adaptive strategies (Sousa, 1984).

Located in a transition region from a climactic point of view and difficult supporting summer drought, The natural vegetation of the Mediterranean countries is fragile and it has not withstood the millennial degradations of man (Huelz, 1970). The reason that led us to carry out floristic inventories in stations located in the north-west of Algeria to know the state and the floristic wealth of this region.

For this study, our choice focuses on the holophytic plants that can be led to other species (of matorral among

others) whose objective is to put and also describe the plant species. Among the studies carried out on halophytes we will particularly remember the work of the authors: Aboura *et al.*, (2006) Benabadji (1995); Merzouk *et al.* (2010); Sari Ali (2004 et 2012); Benabdelmoumene (2011-2018) ; Mezouar (2016).

## Methodology

We used the method transect surveys in plots (100m<sup>2</sup>) choosing sites as typical as possible by noting environmental conditions (Gounot, 1969), Since linear analysis does not give an exhaustive inventory of the floristic composition of a plant group, but it nevertheless makes it possible to determine the main dominant species in these anthropized environments for the most part and often very numerous short-cycle therapeutic species with their respective specific contributions (Cesar, 1990).

The method we used was to inventory the herbaceous and woody subjects, to calculate the fraction of biological types, morphological and biogeographic types and families will also be provided, which corresponds to the Rankiaer botanical characterization (1904).

Which remains in our opinion the most used, it is clear of a simple application and its great ecological value for dry-season climates is recognized by many authors (Emberger, 1971), this classification is based on the position of the buds of renewal during the adverse season.

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**Table 1:** Species inventoried in the Béni-Saf station

Taxas	Morpho- liogical types	Bio- logical types	Biogeographic types	In Arabic	Families
(1)	(2)	(3)	(4)	(5)	(6)
<i>Adonis annua</i>	HA	TH	EURAS	CHOULLETAN	Renonculacées
<i>Aegilops triuncialis</i>	HA	TH	MED-IRANO-TOUR	SBOULTELFAR	Poacées
<i>Anagallis arvensis</i>	HA	TH	SUB-COSMOP	LIZIREG	Primulacées
<i>Artemisia herba-alba</i>	HV	CH	CANARIES -L'EGYPTEASIE.OCC	CHIHA, ISFI, ZEZZARE	Astéracées
<i>Asparagus acutifolius</i>	HV	GE	MED	/	Liliacées
<i>Asphodelus microcarpus</i>	HV	GE	CANAR MED	BEROUAGUE	Liliacées
<i>Asteriscus maritimus</i>	HA	CH	CANAR EUR MERID-N A	KERKABA	Astéracées
<i>Asteriscus pygmaeus</i>	HA	CH	SAH-SIND	NESRINE	Astéracées
<i>Atractylis gummifera</i>	HV	CH	MED	HEDDAD	Astéracées
<i>Atriplex halimus</i>	HV	CH	COSM	ARAMASS	Chénopodiacées
<i>Avena bromoides</i>	HA	TH	MED	/	Poacées
<i>Avena sterilis</i>	HA	TH	MACAR-MED-IRANO-TOUR	KHORTAM	Poacées
<i>Bromus madritensis</i>	HA	TH	EUR-MED	NESLI	Poacées
<i>Calendula arvensis</i>	HA	TH	SUB-MED	/	Astéracées
<i>Calendula suffruticosa</i>	HV	HE	ESP-NA	MOURIRA	Astéracées
<i>Calycotome intermedia</i>	IV	CH	W-MED	GUENDOUL	Fabacées
<i>Carthamus caeruleus</i>	HV	HE	MED	GERGAA	Astéracées
<i>Centaurea involucrata</i>	HA	TH	END, ALG, MAR	SOGUIA	Astéracées
<i>Centaurea pullata</i>	HA	TH	MED	SEGUIA	Astéracées
<i>Chrysanthemum coronarium</i>	HA	CH	MED	MOURARA	Astéracées
<i>Cistus albidus</i>	IV	CH	MED	ATAI	Cistacées
<i>Convolvulus althaeoides</i>	HA	TH	MACAR-MED	LOUIA	Convolvulacées
<i>Cytisus triflorus</i>	HV	CH	W-MED	GIKIO	Fabacées
<i>Dactylis glomerata</i>	HV	HE	PALEO-TEMP	DOUKNA	Poacées
<i>Daucus carota</i>	HA	TH	MED	SENAYRAI	Apiacées
<i>Echinops spinosus</i>	HV	HE	S-MED-SAH	KACHIR	Astéracées
<i>Echium vulgare</i>	HA	HE	MED	TAIHLOU	Borraginacées
<i>Erodium moschatum</i>	HA	TH	MED	EBRA ERRAAI	Géraniacées
<i>Eryngium maritimum</i>	HV	CH	EURO-MED	LAHIET EL MAZA	Apiacées
<i>Galactites tomentosa</i>	HA	TH	CIRCUMMED	CHOUQ ELAMIR	Astéracées
<i>Hertia cheirifolia</i>	HV	CH	END-ALG-TUN	KHERCHOUN	Astéracées
<i>Hordeum murinum</i>	HA	TH	CIRCUMBOR	/	Poacées
<i>Lavandula dentata</i>	IV	CH	W-MED	DJAIDA	Lamiacées
<i>Lavandula multifida</i>	HV	CH	MED	KEMMOUNE	Lamiacées
				EJEMEL	
<i>Lavatera maritima</i>	HV	CH	W-MED	KERMELAMER	Malvacées
<i>Lygeum spartum</i>	HV	GE	W-MED	SENNAQ	Poacées
<i>Malva sylvestris</i>	HA	TH	EURAS	KHOBBIZ	Malvacées
<i>Nigella damascena</i>	HA	TH	MED	NOUAREL MEQUITTFA	Renonculacées
<i>Olea europea</i>	IV	PH	MED	ZBOUDJ	Oliacées
<i>Pallenis spinosa</i>	HV	CH	EURO-MED	NOUGD	Astéracées
<i>Papaver rhoeas</i>	HA	TH	PALEO-TEMP	BEN NAAMEN	Papavéracées
<i>Paronychia argentea</i>	HA	TH	MED	KHIATA	Caryophyllacées

Table 1 continued .....

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(1)	(2)	(3)	(4)	(5)	(6)
<i>Pinus maritimus</i>	IV	PH	W-MED	TAIDA	Pinacées
<i>Plantago lagopus</i>	HA	TH	MED	DHENAI	Plantaginacées
<i>Plantago ovata</i>	HA	TH	MED	ALOURA	Plantaginacées
<i>Polypogon monspeliensis</i>	HA	TH	PALEO-SUBTROP	SARELFAR	Poacées
<i>Raphanus raphanistrum</i>	HA	TH	MED	/	Brassicacées
<i>Reichardia tingitana</i>	HA	TH	MED	RERHIM	Astéracées
<i>Santolina rosmarinifolia</i>	IV	PH	IBERO-MAUR	QEÏCOUN	Astéracées
<i>Senecio vulgaris</i>	HA	CH	SUB-COSMP	ACHEBA SALEMA	Astéracées
<i>Sinapis arvensis</i>	HA	TH	PALEO-TEMP	AOUERDENE	Brassicacées
<i>Tamarix gallica</i>	IV	PH	N, TROP	TARFA	Tamaricacées
<i>Tetragonolobus purpureus</i>	HA	TH	MED	GUERNICH	Fabacées
<i>Thapsia garganica</i>	HV	CH	MED	DERIAS	Apiacées
<i>Trifolium angustifolium</i>	HA	TH	MED	OUNDJA	Fabacées
<i>Urginea maritima</i>	HV	GE	CAN-MED	BASSILA	Liliacées
<i>Urospermum dalechampii</i>	HV	CH	CIRCUMMED	BELEHEN	Astéracées
<i>Withania frutescens</i>	IV	PH	IBERO-MAR	BENOUR	Solanacées

HA: Annual Herbaceous, HV: Perennial Herbaceous, LV: Woody Perennial, Ph: Phanérophytes, Ch: Chamaephytes  
 Th: Thérophytes, Ge: Géophytes, He: Hémicryptophytes

families are on the one hand Liliaceae (5%), Brassicaceae (4%), Lamiaceae (4%) while Chenopodiaceae, which are indicative of saline soils, presents a percentage of (3%), which explains the decrease in diversity by the strong regeneration capacity of Poaceae compared to other families (Fischer and Wipf, 2002).

Axis1:

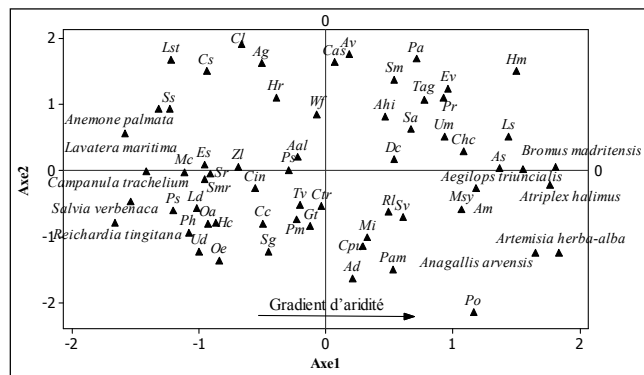


Fig. 5 : Plan factoriel 1,2 des espèces

The species follow a gradient of aridity, on the positive side are steppe species (*Lygeum spartum*), and for the negative side, the soil is less rich in organic matter where are installing the species to matorral.

Axis 2:

The species follow an anthropogenic gradient, where the positive side of the axis is assigned to lawn species *Carthamus caeruleus*, *Echinops spinosus*, *Daucus carota* as opposed to the negative side which is individualized by species of soils poor in organic matter.

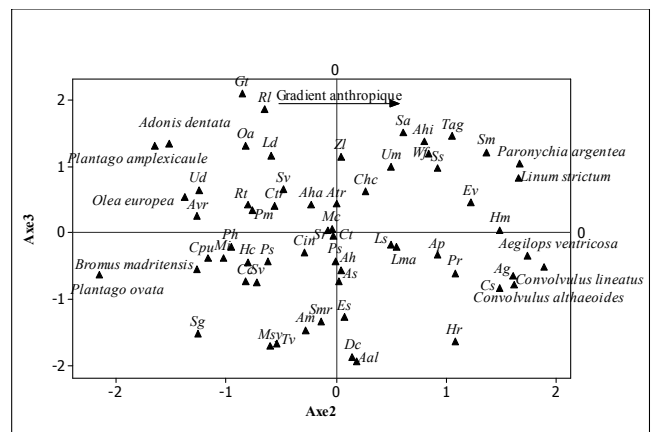


Fig. 6 : Plan factoriel 2,3 des espèces

Conclusion

Plant communities are herbaceous character and more or less shrubby where we see the dominance of poaceae (*Lygeum spartum*) and of the Camaephytes (*Artemisia herba alba*).

In total, spectrum characteristic of the association can be synthesized as a combination of Therophytes and Chamaephytes.

The results that emerge from the methods of floristic analysis highlight a strong variety of floristic composition this variability is closely related to the heterogeneity of vegetation and fluctuations in ecological factors.

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