



EVALUATION OF MARINE POLLUTION OF THE ALGERIAN WEST COAST BY PLASTIC: MESO AND MACRO-PLASTICS

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METHODOLOGY

The present work restores our research on marine pollution by macro-plastics which relates to the estimation of the flow of macro-waste in the coasts of Chlef. The objective of the study is to contribute to knowledge on the existence and spatial distribution of plastic pollution on the coasts of Chlef. In order to determine and compare the distribution of this waste on the coast of the Wilaya, three sites were chosen, "Marina", "Mayniss", "El-Marssa." The field work is done by zones (three zones per each site) each zone imports 100m length (L) and (Z) width (depends on the beach width), we investigated the parts of the beaches the most affected by waste (Fig.1).

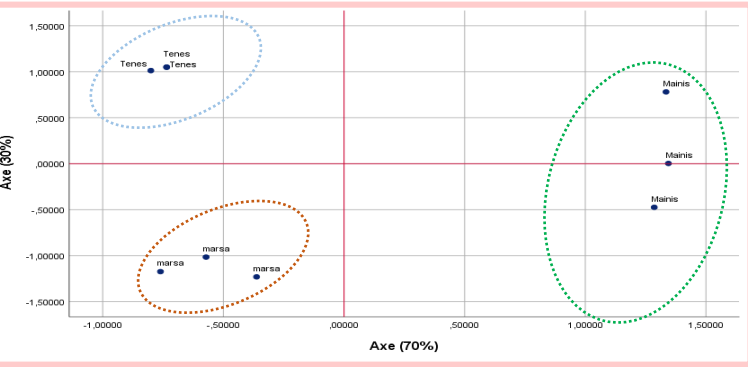


Figure.2 : Correspondence Analysis (PCA) Performed by SPSS

According to the waste composition The ACP analysis shows that we have three different groups. Each site represents a study area (Figure 2) and each area contains three samples. The first group is that of Tenes. It is very different from other sites by the presence of bags. The second group is the Mainis group, it pollutes less and is cratered by the presence of hospital debris, The third group represents the El Marsa area, it is a virgin area and is characterized by a low pollution potential unlike the other two. areas.(Fig.2)

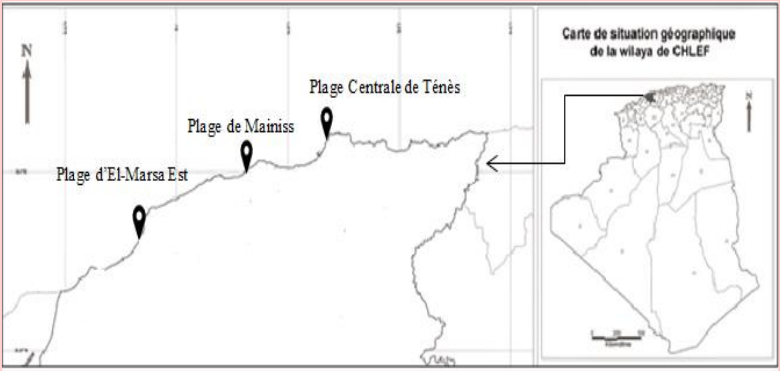


Figure. 1: Coastline map of Chlef (study area)

The difference in distribution may be due to the fact that tourist activity in summer is most often concentrated in the upper part of the beach (terrestrial source of waste)(Bravo, 2009), or the vertical transport of debris rejected by seawater, blown by the swell or wind (Henry, 2010). Therefore, these latter conditions of carriage are Wind and wave force (Henry, 2010).

CONCLUSION

The follow-up of pollution by macro-plastics carried out in the Chlef coast made it possible to evaluate an immense quantity of 3614 waste distributed between meso and macro-plastic. However, the merit of this study is to demonstrate the urgency of the pollution situation on the beaches of Chlef. This pollution could seriously impact biodiversity in the short term.

REFERENCES

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RESULTS AND DISCUSSION

Table.1 :statistical test result from MANOVA, ns: not significant*: significant (P < 0.05) **: very significant (P < 0.01)*** : highly significant (P < 0.001)

			MANOVA			
Between-subjects effects tests						
Source		Type III sum of squares	ddl	medium square	F	Significa tion
Site	Bags	154,361	2	77,181	7,961	0,02
	bottles	1082,641	2	541,320	8,147	0,02
	caps	561,358	2	280,679	17,235	0,00
	Food	44,487	2	22,243	1,380	0,32
	packaging					
	Hard plastic	28,488	2	14,244	2,080	0,21
	Net	1,111	2	0,556	1,465	0,30
	Hospital debris	55,055	2	27,528	16,387	0,00
	Ropes	5,746	2	2,873	3,906	0,08
	Straw	104,570	2	52,285	10,567	0,01
	Cup	25,354	2	12,677	1,441	0,31
	Other	24,630	2	12,315	3,659	0,09
	Bag fragments	90,433	2	45,217	15,280	0,00
	Hard plastic fragment	262,733	2	131,367	7,172	0,03
	Mus plastic fragments	19,512	2	9,756	3,909	0,08
	Fragment files	20,177	2	10,088	3,008	0,12
	Rope fragments	0,924	2	0,462	19,059	0,00
	Food packaging fragments	1,253	2	0,626	0,404	0,68

The MANOVA statistical test reported highly significant differences between sites (P < 0.001)*** for corks, hospital debris, and bag and rope fragments (Table 1). Very significant differences of the order of (P < 0.01)** were mentioned in Table 1 for bottles and caps, straws, plastic fragments and hard fragments. For the remnants of the elements, the MANOVA statistical test confirmed non-significant differences between the sites.