OCCURRENCE OF SELECTED DOMESTIC AND HOSPITAL EMERGING MICRO-POLLUTANTS ON A RURAL SURFACE WATER BASIN LINKED TO A GROUNDWATER KARST CATCHMENT: THE CASE STUDY OF THE QACHQOUCH SPRING-LEBANON.

INTRODUCTION

III-FIELD SITE

The Nahr El Kalb River is originating from springs in the highlands of Kesrouane area, in addition to interflow and runoff occurring highly reflective of waste water effluent in ephemeral streams and tributaries from farms and hospital effluents. A mixing model for monitoring the increase of pollutants from several origins and identifying the relative contribution of groundwater and surface water was validated using a robust statistical analysis of spring discharge, precipitation, and electrical conductivity. Multiple artificial tracer experiments showed that the spring is connected to the highly polluted River through surface or sink-flowing water during rain events.

IV-RESULTS AND HIGHLIGHTS

The conceptual analysis shows that the Qachqouch karstic system is divided into two parts, corresponding to the catchments of the Qachqouch and Ghazzah springs, respectively. The system transports the rainfall into long time lags (annual or more) like most of the Lebanese systems and an intense surface run-off as a consequence of the hard rock surface.

Acknowledgements

REFERENCES


A-OCCURRENCE OF SELECTED MPL ON THE SURFACE WATER CATHMENT: NAHR EL KALB: TRACKING AND PERSISTENCE OF CONTAMINATION

B-SPECIFIC MODE OF TRANSPORT AND SOURCE OF SELECTED MPS TO THE SPRING DURING RAIN EVENTS: TRANSIENT SPECIFIC VULNERABILITY

C-CONCEPTUALIZATION OF THE SYSTEM: TIME SERIES ANALYSIS AND LINEAR RESERVOIR MODEL

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Figure 7: Relationship between load of chlorides and time of the water samples from Ghazzah spring. The load of chloride increases linearly with time, indicating that the load is probably from the precipitation and the rainwater inflow.