

عنوان مقاله:

Characterization of olive mill wastewater in three climatic zones in the North of Jordan

محل انتشار:

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خلاصه مقاله:

Purpose Olive mill wastewater (OMW) is annually generated in large amounts in Jordan without any treatment creating major environmental and public health issues. The objective of this study is to determine changes in OMW characteristics under three climatic zones in the North of Jordan during two harvest seasons. **Method** OMW samples were obtained from 10 olive mills, representing three climatic zones (arid, semi-arid, and semi-arid to sub-humid) during November 2017 and November 2018. Physicochemical characterization and multivariate analysis were performed. **Results** OMW is characterized by acidic conditions ($\text{pH} < 5.0$), high electrical conductivity (EC) ($> 7 \text{ dS/m}$), and high total phenols (2700 mg/L) and organic loads (chemical oxygen demand [COD] 41340 mg/L). OMW in the sub-humid climate contained higher total phenols, COD, EC, Ca, and K than other climates. Principal component analysis (PCA) showed that total phenols had high loadings in favour with Ca, and TSS in arid, total nitrogen in the semi-arid, and COD in the sub-humid climates. **Conclusion** OMW properties were markedly affected by the climate. PCA showed that climate mainly affected the organic loading of extracted components. Overall, treatment of OMW is highly recommended before any use.

کلمات کلیدی:

Olive mill wastewater (OMW), OMW characterization, climate, principal component analysis

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