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WEPEC(F)ATE: a students research project design to determine the fate of pollutants of emerging concern (PECs) in wetlands of the Eastern Guadalquivir Basin (S Spain)

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Pesticides and pharmaceuticals are commonly described as pollutants of emerging concern (PECs) in different matrices such as surface waters, soil and sediments and living organisms. Wetlands in areas facing high pressures of agricultural practices are crucial systems where PECs can be accumulated and transferred between different matrices. Wetlands have a high ability to degrade PECs and decontaminate waters. Some PECs are frequently identified at significant levels at the wetlands of Eastern Guadalquivir Basin. These studies provided a view of several significant pollutants. WEPEC(F)ATE is a research project design carried out by a group of students of the degree in Chemistry of the University of Jaén aiming to determine the fate of the significant PECs in the matrices of wetlands from the Eastern Guadalquivir Basin. The evaluation of risk of PECs in these environments requires to improve the knowledge of the processes of adsorption/desorption, degradation, and transfer of PECs among waters, sediments and living organisms. WEPEC(F)ATE will take into account features of crops, PECs physicochemical characteristics, environmental conditions, and water-sediment-organisms interactions. The results of this project will improve our understanding on the prevailing processes controlling the natural attenuation of PECs and will provide insights to decide how to select less persistent PECs. This investigation is crucial to decrease anthropic pollutants introduced through aquatic environments and evaluate regulatory requirements. The results will help to implement ecological agricultural practices in protected areas with low conservation status of water and sediments.