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BIOCHAR AS ALTERNATIVE TO ACTIVATED CHARS FOR PRIORITY MICRO-POLLUTANT WASTE WATER DEPURATION

Waste water depuration in Switzerland now addresses some priority pollutants that were formerly not considered in the Swiss standards. Wastewater treatment plants must now be able to eliminate 80% of pharmaceuticals and personal care products. Wastewater treatment plants tend to use activated chars to fulfil these requirements. The use of local sources of Biochars produced from wood wastes is an alternative to the importation of activated chars for waste water depuration. After characterizing the local sources of biochars for their reactivity towards the targeted pollutants, we performed (i) batch experiments comparing activated chars and Biochars for their ability to decrease the priority pollutant content of a solution, with respect to the new Swiss requirements and (ii) real treatment plant condition experiments with waste waters to assess the performance of biochars depuration properties under operational conditions. The compared properties of activated chars and local Biochars are discussed in the frame of (i) the surface properties of the different char sources, (ii) the conformity of the depuration to the new Swiss rules requirements, (iii) the issues that may raise in real waste water treatment plants conditions and (iv) the production of a sustainable sorbent for waste water treatment.