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## Removal of chlorine from tap water in biochar packed columns

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The present study presents the findings of an experimental work, which investigated the use of different biochars for the removal of chlorine from tap water. Biochar was produced at 850oC from six agroindustrial wastes: malt spent rootlets, apricot, olive, locust, and grape kernel, and walnut shells were collected and pyrolyzed. The surface area, the pore volume, and the average pore size of each sorbent were determined using gas (N2) adsorption-desorption cycles and the Brunauer, Emmett, and Teller (BET) equation. The functional groups of raw and pyrolyzed materials were identified by attenuated total reflection spectroscopy. The residue from each material after pyrolysis is about 25% of its original mass, and is fully independent from the material origin. The lowest the percentage of the residue of each material, the highest the BET surface is. The chlorine removal for all materials tested ranged from 80 to 96%. The malt spent rootlets exhibited the highest efficiency for free and total chlorine removal.