



Food-processes wastewaters treatment using food solid-waste materials as adsorbents or absorbents

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The wastewaters generated by olive-mills during the production of olive oil, wastewaters from a dairy and a cow-farm unit and wastewaters from a small food factory have been treated by means of selected materials, either by-products of the same units, or other solid waste, as absorbents or adsorbents in order to identify the capacity of those materials to remove organic load and toxicity from the aforementioned wastewaters. The potential of both the materials used as absorbents as well as the treated wastewaters to be further used either as fertilizers or for agricultural irrigation purposes are examined.

Dry olive leaves, sheep wool, rice husks, etc. were used either in a fixed-bed or in a stirred batch arrangement, employing different initial concentrations of the aforementioned wastewaters.

The efficiency of removal was assessed using spectrophotometric methods and allium test phytotoxicity measurements.

In this presentation the response of each material employed is shown as a function of absorbent/adsorbent quantity and kind, treatment time and wastewater kind and initial organic load. Preliminary results on the potential uses of the adsorbents/absorbents and the treated wastewaters are also shown.

Keywords: Olive-mill wastewaters, dairy farm wastewaters, olive leaves, zeolite, sheep wool