

## Wastewater Treatment Using Sodom Apple Tree in Arid Regions

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**Abstract :** Collected by the sewerage network, the wastewater contains many polluting elements, coming from the population, commercial, industrial and agricultural activities. These waters are collected and discharged into the natural environment and pollute it. Hence the need to transport them before discharge to a treatment plant to undergo several treatment phases. The objective of this study is to highlight the purification performance of the "Sodom apple tree" which is a very common shrub in the region of Djanet and Illizi in Algeria. As material, we used small buckets filled with sand with a gravel substrate. We sowed seeds that we let grow a few weeks. The water supply is under a horizontal flow regime under-ground. The urban wastewater used is preceded by preliminary treatment. The water obtained after purification is collected using a tap in a container placed under the seal. The comparison between the inlet and the outlet waters showed that the presence of the Sodom apple tree contributes to reducing their pollutant parameters with significant rates: 81% for COD, 84%, for BOD , 95% for SM , 82% for  $\text{NO}^{-2}$  , and 85% for  $\text{NO}^{-3}$  and can be released into the environment without risk of pollution

**Keywords :** arid zone, pollution, purification, re-use, wastewater.

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