



## **Alkali treated malt spent rootlets for the removal of U(VI) from acidic aqueous solutions**

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Anthropogenic activities such as the production of nuclear energy and mining have resulted in the release of substantial amount of uranium in the environment globally. Uranium has found its way in natural waters and poses a threat for human health due to its toxicity. The present study utilizes a low-cost, environmental friendly biosorbent, Malt spent Rootlets (MSR), for the removal of uranium from acidic aqueous solutions. Malt Spent Rootlets are a by-product of brewing industry and are readily available to be used as biosorbents. MSR were used raw and after alkali treatment for the removal of U(VI) from aqueous solutions. Alkali treatment resulted in a significant increase in sorption capacity, which is probably due to the removal of lignin from the material and the exposure of surface active groups for U(VI) binding that were not available before. The effect of pH, contact time and uranium initial concentration were studied and a comparison is drawn between untreated and delignified MSR.