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OLIVE PITS AS ECO-FRIENDLY SORBENT FOR TREATMENT OF ZINC(II)-CONTAMINATED WATER

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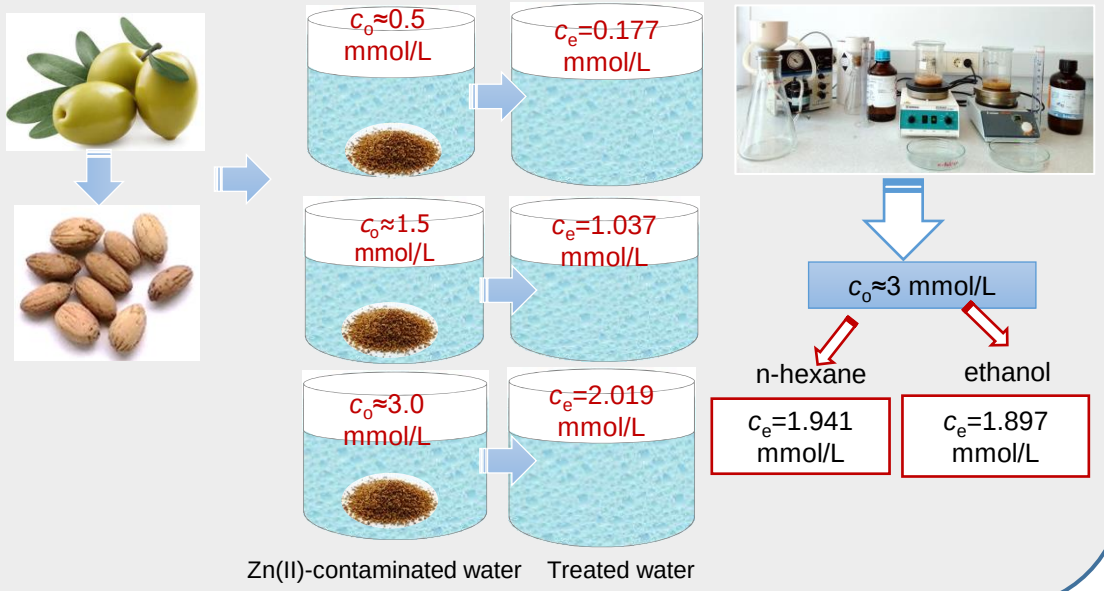
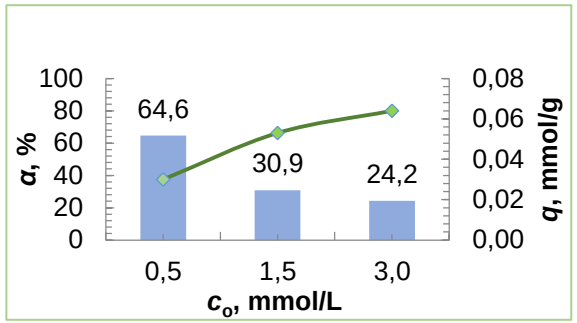
Introduction: With the aim of using green and sustainable easily available materials, this investigation is focused on the food processing by-products, particularly application of olive pits as low-cost sorbents in treatment of zinc(II)-contaminated water. This approach could be helpful in waste management, as well as good base for development of zero waste technology.

Experimental

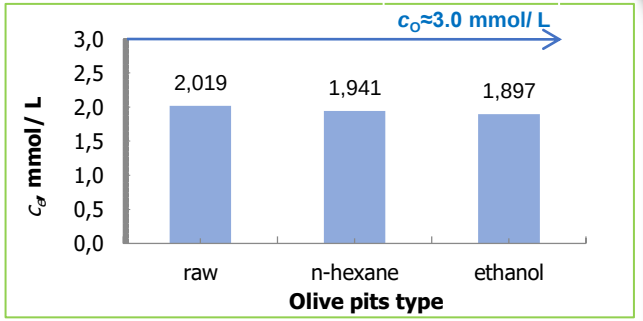


Results & discussion



The capacity of olive pits was in the range 0.030-0.064 mmol/g, with the removal efficiency 24.2-64.6%. The best removal efficiency was achieved for the lowest zinc concentration.

after extraction



Residual Zn(II) concentration after sorption on olive pits after extraction with n-hexane and ethanol further decreased, indicating their possible successful use in water treatment even after extraction of valuable bioactive compounds.

Conclusion: Olive pits as biosorbents with achieved efficiency up to 65% showed promising potential in zinc(II) removal from wastewater, especially at lower initial zinc concentration. Reuse of olive waste can reduce the costs of waste disposal and water treatment, satisfying principles of circular economy at the same time.

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