

**DETERMINATION OF THE EFFICIENCY OF
CRAB SHELL POWDER FOR THE
TREATMENT OF FISH WASTEWATER**

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ABSTRACT

Water pollution by industrial wastewater is one of the major problems in the world. Wastewater which are releasing from Seafood processing industries cause high Chemical Oxygen Demand (COD) and the eutrophication in receiving water bodies. Present study focused on find out the efficiency of different types of crab shell powders *viz*; raw crab shell powder, heat treated crab shell powder, chitin and chitosan as a low cost and eco-friendly wastewater treatment method for the reduction of COD in fish wastewater. Also best powder dosage, best pH value and combined effect of heat treated crab shell powder and chitosan which has given highest COD reduction for the fish wastewater have been determined. In the first experiment, contact time, pH, powder type and wastewater amount were kept in constant to determine the most effective powder dosage for each powder type. In the second experiment, contact time, powder dosage, powder type and wastewater amount were kept constant to determine most effective pH value for each powder type. In the third experiment, contact time, powder dosage, combined powder types, wastewater amount and pH value were kept constant to study most effective combined powder ratio of heat treated powder and chitosan. In each experiment COD, pH, temperature, total dissolved solid and turbidity changes were measured. Heat treated powder was selected as the best and cost effective powder type, 0.5 gl^{-1} powder dosage was selected as the most effective powder dosage, pH 5 was the most effective pH value and 1:3 ratio chitosan: heat treated powder was the best combined ratio for the reduction of COD in fish wastewater.

Key words:

Chemical Oxygen Demand, Chitin, Chitosan, Eutrophication, Turbidity