

## عنوان مقاله:

Optimization of nitrogen and phosphorus removal from meat processing wastewaters using microalgal biofilms

## محل انتشار:

مجله مدیریت و مهندسی بهداشت محیط, دوره 5, شماره 2 (سال: 1397)

تعداد صفحات اصل مقاله: 6

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## خلاصه مقاله:

The conventional activated sludge processes are not able to completely treat the nitrogen and phosphorus compounds of meat processing wastewaters. Microalgal biofilm, which has the advantages of easiness and inexpensiveness, can be applied as a post-treatment method. Methods: The optimal levels of micronutrients and N/P ratio were aimed in the cultivation of *Scenedesmus quadricauda* as a biofilm formed on the two types of commercially available bed packing. For this purpose, the Factorial design was run to maximize the removal of ammonium, nitrate and phosphate concentration in the synthetic meat processing wastewater. Results: Experimental data showed better results for the removal of biofilm formed on the sponge filter. In addition, a maximum removal efficiency of 55.6%, 47% and 48% was respectively achieved for ammonium, nitrate and phosphate at optimal N/P ratio of 10.5 and volumetric percentage of 50% of micronutrients. Conclusion: The results demonstrated that microalgal biofilm of *Scenedesmus* is able to remove the nutritional components of meat processing wastewaters. The process is needed to be optimized for the effective treatment.

## کلمات کلیدی:

Meat, Biofilms, Microalgae, Wastewater, *Scenedesmus*

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