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M.Sc. (ENVIRONMENTAL SANITATION)

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DRINK FACTORY WASTEWATER

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FROM SOFT DRINK FACTORY. THESIS ADVISORS : DUANGRAT INTORN, M.Sc.
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Spirulina was cultivated in wastewater from a soft drink factory. It was found that in the 3rd pond *Spirulina* gave the best growth with 900 mg/l dry weight cell and had the maximum removal capacity of 82.55%. The 3rd pond was chosen for further experiment. In order to find the optimum condition for growth and removal efficiency, the concentration of Zarrouk medium was varied. The results showed that at the condition of NaHCO₃, NaNO₃ and K₂HPO₄ 25% of Zarrouk medium, the yield of *Spirulina* was equal to that of using the normal Zarrouk medium and allowing *Spirulina* to grow for two weeks. The efficiency of TP removal and nitrate were 86.65% and 83.94% respectively.

At the optimum condition of NaHCO₃, NaNO₃ and K₂HPO₄ 25% of Zarrouk medium, the removal efficiency in the hydraulic retention time (HRT) were checked. It was found that in the first week the reducing of BOD, NO₃⁻-N, TP, and SS were 85.00%, 74.12%, 79.28% and 75.92%, respectively and increased to 91.97%, 90.48%, 95.48% and 91.67%, respectively in the second week. The removal efficiency were increased in the second week, which has a very suitable growth condition, as shown by the maximum growth.