

Karakteristik Kimiawi Limbah Cair Industri *Nata de Coco*

ABSTRAK

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Kepedulian terhadap lingkungan semakin meningkat sehingga memperketat peraturan dalam rangka pencegahan polusi air. Hukum dan persyaratan yang semakin ketat menjadi penggerak utama dalam peningkatan perencanaan penanganan limbah. Pemahaman mengenai karakteristik dari air limbah adalah hal yang penting terkait dengan desain dan operasi, pengolahan, serta sarana pembuangan limbah. Dalam penelitian ini, dilakukan karakterisasi limbah cair dari industri *nata de coco* dari lima tahap proses: fermentasi, pengupasan, pencucian, pengepresan, dan akhir. Analisa parameter air limbah dilakukan seperti *Biochemical Oxygen Demand* (BOD), *Chemical Oxygen Demand* (COD), *Total Solids* (TS), *Total Suspended Solids* (TSS), dan pH. Hasil menunjukkan bahwa limbah cair *nata de coco* memiliki kisaran nilai BOD sebesar 219-7.750 mg/L, COD sebesar 2.320-9.810 mg/L, TS sebesar 773-8.660 mg/L dan TSS sebesar 747-980 mg/L dan pH sebesar 3,95-6,12. Pengaruh kapasitas buffer terhadap pengolahan limbah secara aerobik dan anaerobik juga dilakukan dengan nilai kapasitas buffer yang baik untuk proses aerobik sebesar 50 mmol H⁺/L dan anaerobik sebesar 30 mmol H⁺/L.

Kata kunci: limbah cair, *nata de coco*, karakteristik limbah, kapasitas buffer

Chemical Characteristics of *Nata de Coco* Industry Wastewater

ABSTRACT

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Environmental awareness is increasing therefore giving rise to more stringent regulations in terms of water pollution. The tightened laws and requirements are providentially acting like a driving force for the improvement of wastewater treatment plant. An understanding of the nature of wastewaters is essential in the design and operation, treatment, and disposal facilities. In this work, characteristics of wastewater generated from *nata de coco* industry was carried out from five process steps: fermentation, peeling, washing, pressing, and final. Wastewater parameters such as Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Solids (TS), Total Suspended Solids (TSS), and pH were analyzed. The result showed that *nata de coco* wastewater has range value of BOD from 219 to 7.750 mg/L, COD from 2.320 to 9.810 mg/L, TS from 773 to 8.660 mg/L and TSS from 747 to 980 mg/L also pH range from 3,95 to 6,12. The effect of buffering capacity towards aerobic and anaerobic wastewater treatment was also performed with buffering capacity value for aerobic process was 50 mmol H⁺/L and anaerobic process was 30 mmol H⁺/L.

Keywords: wastewater, *nata de coco*, wastewater characteristics, buffering capacity