

BAB V

KESIMPULAN DAN SARAN

5.1. Kesimpulan

1. Desain dan simulasi pengolahan limbah minyak kelapa sawit dengan *SuperPro Designer* ini yang dilakukan dengan menggunakan unit *oil separation tank*, tangki netralisasi, *cooling tower*, *anaerobic digester*, *aerobic biooxidation*, dan *clarifier* menghasilkan waktu tinggal yang jauh lebih singkat serta hasil yang lebih efisien ketimbang pengolahan limbah kelapa sawit konvensional berbasis kolam.
2. Proses desain dimensi alat yang telah dilakukan berdasarkan data karakteristik limbah kelapa sawit uji dari PT. Perkebunan Nasional VIII, Pandeglang pada tahun 2005 telah memenuhi standar baku mutu seperti yang tercantum pada Permen LH No. 5 Tahun 2014.
3. Dimensi alat yang telah didesain masih dapat mengolah variasi kandungan COD, TSS, dan Minyak-Lemak hingga mencapai baku mutu bahkan jika kandungannya pada limbah mencapai 2 kali dari semula.
4. Dimensi alat yang telah didesain hanya dapat mengolah variasi kandungan BOD hingga mencapai baku mutu jika terjadi fluktuasi hanya mencapai 1.25 kali dari nilai semula, jika kadar BOD di atas nilai tersebut maka perbaikan dapat dilakukan dengan menambah waktu tinggal pada unit anaerobik dan aerobik dan/atau menambah pasokan oksigen ke unit aerobik.

5.2. Saran

1. Diperlukannya model desain dan simulasi secara khusus untuk penanganan biogas yang dihasilkan dari pengolahan limbah minyak kelapa sawit pada unit anaerobik dan aerobik karena memiliki jumlah serta potensi nilai jual yang besar.
2. Diperlukannya model desain dan simulasi secara khusus untuk penanganan *sludge* yang dihasilkan dari pengolahan limbah minyak kelapa sawit pada unit *clarifier* karena jumlahnya yang besar serta adanya potensi untuk dijual sebagai produk olahan tertentu.

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