

## Intisari

# KUALITAS AIR LIMBAH DAN BEBAN PENCEMARAN TAMBAK UDANG DI PANTAI IMORENGGO DESA KARANGSEWU KABUPATEN KULON PROGO

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Penelitian ini bertujuan untuk mengkaji kualitas air limbah dan mengetahui beban polutan dari tambak udang di Pantai Imorenggo. Penelitian ini dilakukan pada bulan Mei sampai Agustus 2015 di Pantai Imorenggo, Desa Karangsewu, Kabupaten Kulon Progo. Pengambilan sampel air diambil dari saluran efluen dua petak tambak dan pada saluran pembuangan akhir limbah dilakukan selama dua minggu sekali pada pukul 06.00 WIB dan 15.00 WIB. Parameter yang diukur adalah suhu, debit, TSS, salinitas, kekeruhan, pH, BOD<sub>5</sub>, NO<sub>3</sub>, NH<sub>3</sub>, PO<sub>4</sub><sup>-3</sup>, dan kepadatan *Peridinium* sp. Alat yang digunakan untuk pengukuran parameter yaitu pH meter, termometer, kertas saring, timbangan analitik, refraktometer, plankton net, mikroskop, *Sedgwick rafter*, dan spektrofotometer. Bahan yang digunakan yaitu air limbah, formalin, aquades, dan larutan buffer. Kualitas air limbah tambak udang di Pantai Imorenggo yaitu: Suhu air berkisar 26,8–29,1°C, TSS pada berkisar 0,76–2,65 mg/l, Kekeruhan berkisar 17,87–78,85 NTU, Salinitas berkisar 4,83–19,00 0/00, pH air berkisar 6,95–8,12, BOD<sub>5</sub> berkisar 37,58–229,74 mg/l, NO<sub>3</sub> berkisar 43,46–261,56 mg/l, NH<sub>3</sub> berkisar 0,17–6,74 mg/l, PO<sub>4</sub> berkisar 7,47–30 mg/l, dan Densitas *Peridinium* berkisar 0–92 individu/l. Beban pencemaran dari saluran pembuangan akhir tambak udang di Pantai Imorenggo yaitu : TSS sebesar 0,0069 ton/siklus, BOD<sub>5</sub> sebesar 0,6029 ton/siklus, NO<sub>3</sub> sebesar 0,7712 ton/siklus, NH<sub>3</sub> sebesar 0,0034 ton/siklus, dan PO<sub>4</sub> sebesar 0,0952 ton/siklus. Dari hasil penelitian didapatkan beberapa parameter kualitas air limbah yang melebihi baku mutu yaitu kekeruhan, BOD<sub>5</sub>, NH<sub>3</sub>, NO<sub>3</sub>, serta PO<sub>4</sub>.

Kata kunci : Beban pencemaran, Kualitas air, Limbah, Tambak udang

*Abstract*

WASTE WATER QUALITY AND POLLUTION LOAD OF SHRIMP POND IN  
IMORENGGO COAST KARANGSEWU VILLAGE  
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The aims of this study were to assess the quality of waste water and to determine the pollution load of shrimp ponds in Imorenggo Beach. This research was conducted from May to August 2015 in Imorenggo coast, Karangsewu village, Kulon Progo District. Wastewater sample were collected from effluent channel of two ponds and drain end, biweekly at 06.00 am and at 15.00 pm. The parameters were measured namely temperature, discharge, TSS, salinity, turbidity, pH, BOD<sub>5</sub>, NO<sub>3</sub>, NH<sub>3</sub>, PO<sub>4</sub><sup>-3</sup>, and density of *Peridinium* sp.. The equipment were used to measure these parameter are pH meter, thermometer, filter paper, analytical scale, refractometer, plankton net, microscope, Sedgwick rafter, and spectrofotometer. The materials were used in this study are wastewater, buffer solution, formalin, and aquades. Waste water quality of shrimp pond in Imorenggo Coast namely : temperature range was 26,8–29,1°C, TSS range was 0,76–2,65 mg/l, turbidity range was 17,87–78,85 NTU, Salinity range was 4,83–19,00 ‰, pH range was 6,95–8,12, BOD<sub>5</sub> rang was 37,58–229,74 mg/l, NO<sub>3</sub> range was 43,46–261,56 mg/l, NH<sub>3</sub> range was 0.17–6.74 mg/l, PO<sub>4</sub> range was 7.47–30 mg/l, dan Density of *Peridinium* range was 0–92 individu/l. Pollution load from drain end of shrimp pond namely: TSS was 0.0421 tons/cycle, BOD<sub>5</sub> was 3.5041 tons/cycle, NO<sub>3</sub> was 4.4302 tons/cycle, NH<sub>3</sub> was 0.0275 tons/cycle, and PO<sub>4</sub> was 0.6284 tons/cycle. The study results revealed that some water quality parameters of waste that exceeds the quality standard that is turbidity, BOD<sub>5</sub>, NH<sub>3</sub>, NO<sub>3</sub>, and PO<sub>4</sub>.

Keywords : Pollution load, Shrimp pond, Waste water, Water quality.