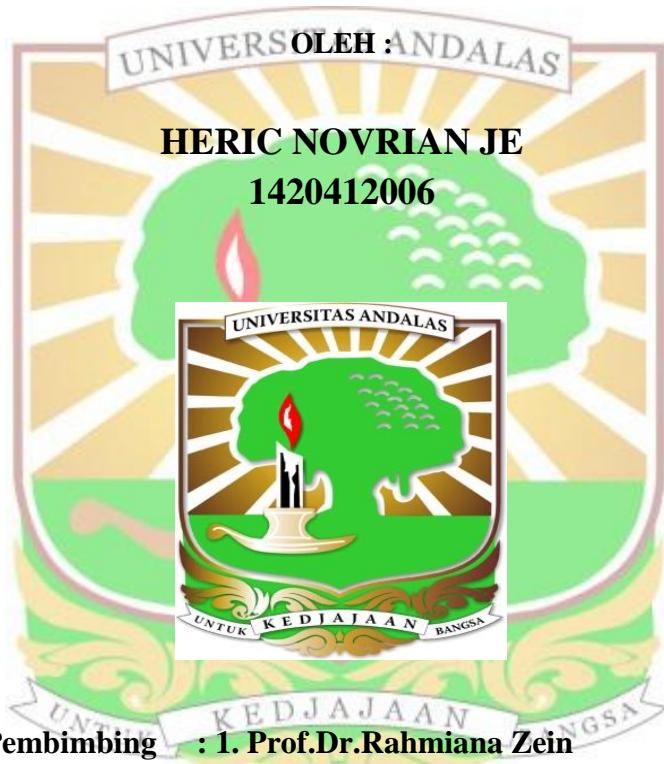


**PENGOLAHAN LIMBAH CAIR INDUSTRI TAHU DENGAN METODA
LAPISAN MULTI MEDIA (LMM) YANG DICAMPUR JERAMI PADI**

TESIS



**PROGRAM PASCASARJANA
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ABSTRAK

Lapisan Multi Media (LMM) merupakan suatu metoda pengolahan limbah cair dengan menggunakan tanah, zeolite dan arang. Sistem LMM terbuat dari box Akrilik (50x15x50)cm berisikan campuran tanah vulkanik, arang, jerami padi dan serbuk besi (7,5 :1 :1 :0,5) yang dibuat seperti blok batu bata dan untuk lapisan permeable layers (PL) digunakan zeolit 3-5 mm. Sampel diambil dari limbah cair industri tahu yang berada di Kota Payakumbuh, Sumatera Barat. Penelitian ini mempelajari pengaruh variasi laju alir 15,30,60,120 dan 240 mL/menit (aerasi dan non aerasi), sehingga diperoleh efisiensi laju alir 15 mL/menit yang paling baik dalam menurunkan nilai TSS, BOD, COD, Nitrat, dan pospat berturut-turut sebesar 99,47%; 94,65%; 99,41%; 100%; 100% dan pH meningkat dari 4,18 menjadi 6,79 pada kondisi aerasi. Sementara untuk kondisi nonaerasi 96,69%; 35,70%; 57,97%; 100%; 100% dan pH meningkat dari 4,18 menjadi 4,62. Hasil penelitian menunjukkan bahwa metoda LMM dapat digunakan untuk mengolah limbah cair industri tahu.

Kata kunci: Lapisan Multi Media, Limbah cair industri tahu, zeolite, jerami padi

ABSTRACT

The Multi Soil Layering (MSL) system is a method for treatment of tofu waste water industry. MSL was installed using a box acrylic with dimensions are 50 cm (width) × 15 cm (length) × 50 cm (height), consist from a mixture of volcanic soil, charcoal, rice straw and iron powder with (7,5:1:1:0,5) was made like a brick pattern and Permeable Layers (PL) of zeolite with diameter 3-5 mm. Samples were taken from the wastewater of tofu industry in Payakumbuh, West Sumatera. The treatment process was studied on effect flow rate were 15, 30, 60, 120 and 240 mL/min, aerobic and anaerobic system. The result was found the removal of TSS, BOD, COD, Nitrate, phosphate and pH in tofu waste water are maximum on flow rate 15 mL/min at aerobic system were 99.47%, 94.65%, 99.41%, 100%, 100% and pH was changed from 4.18 to 6.79, while for anaerobic system were 96.69%, 35.70%, 57.97%, 100%, 100% respectively and pH was changed from 4.18 to 4.62. In generally, MSL system could be used for treatment of tofu waste water industry.

Keywords : Multi Soil Layering (MSL), rice straw, Zeolite, Wastewater tofu Industry.