

## ABSTRAK

### Perbandingan Antara Pengaruh Penambahan Zeolit dan Kaporit Terhadap Penurunan Kadar Beberapa Parameter Limbah Cair Industri Tahu

Limbah cair yang berasal dari proses pembuatan tahu apabila tidak dikelola dengan baik dan hanya langsung dibuang ke perairan akan sangat mengganggu lingkungan di sekitarnya. Hal ini dapat dibuktikan dengan terciumnya bau busuk di sekitar lokasi industri tahu. Limbah cair industri tahu yang terdapat di suatu daerah di wilayah Bandung Timur dibuang ke saluran perairan dan selokan tanpa pengolahan terlebih dahulu. Penelitian ini bertujuan untuk mengetahui kadar bahan-bahan pencemar yang terdapat di dalam limbah cair industri tahu yaitu dengan menganalisis kadar beberapa parameter organik pada limbah cair industri tahu tersebut diantaranya: pH, COD (*Chemical Oxygen Demand*), BOD (*Biochemical Oxygen Demand*), TSS (*Total Suspended Solid*) dan Amoniak. Kemudian dilakukan pengolahan terhadap limbah cair industri tahu yang memiliki kadar pH, COD, BOD, TSS dan Amoniak yang melebihi batas maksimum dengan metode koagulasi. Berdasarkan hasil uji sampel awal diketahui nilai COD, BOD dan pH yang melebihi baku mutu standar limbah cair industri. Berdasarkan hasil tersebut maka dilakukan pengolahan dalam skala laboratorium dengan penambahan koagulan zeolit dan kaporit untuk menurunkan beberapa konsentrasi zat organik diantaranya COD dan BOD serta untuk meningkatkan nilai pH. Metode yang digunakan adalah metode koagulasi yaitu pengolahan secara kimia dengan penambahan koagulan zeolit dan kaporit masing-masing dengan konsentrasi 25, 50, 75 dan 100 g/L. Dari koagulan tersebut dicari yang lebih efektif. Dari hasil penelitian diketahui bahwa zeolit dengan konsentrasi 100 g/L memberikan penurunan terbesar terhadap kadar COD dan BOD yaitu sebesar 72,27 % dan 76,32 %. Sementara kaporit dengan konsentrasi 100 g/L memberikan penurunan kadar COD dan BOD sebesar 66,10 % dan 63,24 %, dimana zeolit lebih besar menurunkan kadar COD dan BOD dibandingkan dengan kaporit. Dan yang lebih efektif untuk menaikkan nilai pH adalah kaporit dengan konsentrasi 25 g/L pada nilai pH 6,56.

Kata kunci: zeolit, kaporit, COD, BOD, pH.

## ABSTRACT

### Comparison Between Effect of Zeolite and Chlorine Additions for Decreasing the Levels of Some Parameters on the Liquid Waste of the Tofu Industries

Liquid waste that came from the process of the tofu industries if not managed well and only immediately was thrown to waters will be annoying the around environment. That is could be proven with smell the stink around the location of the tofu industries. The liquid waste of the tofu industries that was met in an area of East Bandung was exiled to the waters channel and the ditch without processing before. This research purpose to knowing the level of pollutant that was gotten on the liquid waste of the tofu industries that is with analyzed the levels of several parameters on the liquid waste of the tofu industries this among: pH, COD (*Chemical Oxygen Demand*), BOD (*Biochemical Oxygen Demand*), TSS (*Total Suspended Solid*) and Ammonia. Afterwards was carried out of by the processing towards the liquid waste of the tofu industries that belong the level of pH, COD, BOD, TSS and ammonia that exceeded the maximum limit with the coagulation method. Was based result of the sample test of early then was known by COD value, BOD and pH that exceeded standard quality the liquid waste of industries. Was based on these results then was carried out by the processing in the scale of the laboratories with additions the coagulant of zeolite and chlorine to decrease several concentration of the organic substance among the COD and BOD along with to increasing the level of pH. The method were used is the coagulation method that is the processing in a manner chemistry with additions the coagulant of zeolite and chlorine each with the concentration 25, 50, 75 and 100 g/L. From this coagulant was looked for that was most effective. From result of the research evidently was known the zeolite with the concentration 100 g/L is the biggest to decrease the levels of COD and BOD that is 72,27 % and 76,32 %. While the chlorine with concentration 100 g/L decrease the levels of COD and BOD that is 66,10 % and 63,24 %, where the zeolite is the bigger to decrease the level of COD and BOD compared with chlorine. And the most effective to increase the level of pH is chlorine with the concentration 25 g/L at the pH value is 6,56 .

Keywords: zeolite, chlorine, COD, BOD, pH.