ABSTRAK

Industri minuman ringan merupakan salah satu jenis industri yang memberikan kontribusi besar terhadap pertumbuhan ekonomi di Indonesia. Limbah cair industri minuman ringan bersumber dari berbagai proses produksi antara lain pencucian, *cooling, filling,* pengoperasian alat dan *reject* produk. Limbah industri minuman ringan memiliki kandungan COD, TSS dan warna yang tinggi. Karena itu perlu dilakukan pengolahan terhadap limbah yang dihasilkan. Dalam penelitian ini digunakan limbah industri minuman ringan dari PT. XYZ yang diolah dengan elektrokoagulasi dengan variasi jarak 10, 20 dan 30 mm, tegangan 12 dan 24 volt, penyusunan elektroda monopolar dan bipolar dan waktu kontak 30, 60, 90, dan 120 menit serta dilakukan pengolahan adsorpsi dengan variasi dosis adsorben 2, 4, 6, 8, dan 10 g/L. Hasil dari pengolahan elektrokoagulasi dan adsorpsi mampu menurunkan COD hingga 95,42 mg/L, TSS 33,33 mg/L dan warna bening dengan jarak 20 mm, tegangan 12 volt, penyusunan monopolar dan waktu kontak 120 menit dengan kombinasi dosis adsorben 10 g/L.

Kata Kunci: *Industri minuman ringan, COD, TSS, Warna, Elektrokoagulasi, Adsorpsi karbon aktif*

ABSTRACT

The beverage industry is one type of industry that contributes greatly to economic growth in Indonesia. The liquid waste of t the beverage industry is sourced from various production processes including leaching, cooling, filling, tool operation and rejecting products. Beverage industry waste has high COD, TSS and color content. Therefore it is necessary to process the waste generated. In this research the samples has taken from PT. XYZ is processed by electrocoagulation with variation distance of 10, 20 and 30 mm, voltage 12 and 24, preparation of monopolar and bipolar electrodes and contact time 30, 60, 90, and 120 minutes an adsorption treatment was performed with variation of dose of adsorbent 2, 4, 6, 8, and 10 g/L. The result of electrocoagulation and adsorption processing can decrease COD to 95,42 mg/L, TSS 33,33 mg/L and clear color with distance 20 mm, 12 voltage, monopolar arrangement and contact time 120 minutes with combination of adsorbent dose 10 g/L.

Keywords: *Beverage industry, COD, TSS, Color, Electrocoagulation, Adsorption of activated carbon*