

Effect of ozonation on COD fractionation of wastewater from poultry processing industry

Abstract

The objectives of this study were to evaluate the effect of ozonation on the solubility and biodegradability of wastewater from poultry processing industry. In addition, the wastewater also characterized based on the COD fractionation. The wastewater sample used was collected from Advance Chicken Processing (M) Sdn. Bhd., Perlis, Malaysia. Ozonation process was carried out in a semi-batch glass reactor which has a 2 L volume. The COD fractionation of poultry wastewater indicated that non-biodegradable COD is predominant compare to other fractions. However, the wastewater is containing higher percentage biodegradable COD comprehensively. It is expected that ozonation treatment would transform both particulate and soluble non-biodegradable COD towards biodegradable constituent that easily remove by biodegradation. The removal of COD was significant at ozonation duration up to 5 min. However, COD removal efficiency was only increased slightly with the increased of the ozonation duration after 5 min. This may be due to the fact that ozonation for long time would possibly producing constituent that inhibit ozone dissociation.