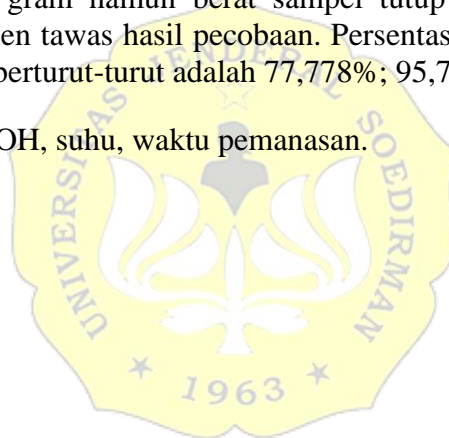


ABSTRAK

Limbah cair Rumah Potong Ayam (RPA) adalah limbah cair hasil dari kegiatan pemotongan ayam yang memiliki nilai *Biochemical Oxygen Demand* (BOD), *Chemical Oxygen Demand* (COD), dan *Total Suspended Solids* (TSS) yang tinggi. Perlu adanya pengolahan limbah cair RPA sebelum dibuang ke perairan supaya tidak mengancam ekosistem perairan dan berdampak buruk pada penduduk sekitar. Penelitian mengenai penurunan nilai BOD, COD, dan TSS limbah cair RPA dengan koagulasi menggunakan koagulan tawas dari tutup botol aluminium telah dilakukan. Penelitian ini bertujuan untuk mengetahui konsentrasi KOH, H₂SO₄, suhu pemanasan, waktu pemanasan, dan berat sampel tutup botol aluminium untuk menghasilkan tawas paling banyak, serta mengetahui persentase penurunan nilai BOD, COD, dan TSS limbah cair rumah potong ayam (RPA) setelah dilakukan proses koagulasi dengan koagulan tawas dari tutup botol aluminium. Penelitian ini menunjukkan bahwa variasi KOH 25%, H₂SO₄ 7M, suhu pemanasan 85°C, dan waktu pemanasan 15 menit menghasilkan tawas dari tutup botol aluminium paling banyak dan pada sampel tutup botol aluminium sebanyak 4 gram menghasilkan tawas sebesar 52,511 gram namun berat sampel tutup botol aluminium tidak mempengaruhi rendemen tawas hasil percobaan. Persentase penurunan nilai BOD, COD, dan TSS secara berturut-turut adalah 77,778%; 95,758%; dan 93,467%.

Kata kunci: H₂SO₄, KOH, suhu, waktu pemanasan.



ABSTRACT

RPA liquid waste is the liquid waste resulting from chicken slaughtering activities, which have high Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), and Total Suspended Solids (TSS) values. Before being released into the environment, the liquid waste from RPA must be treated to prevent harm to local's health and threats to aquatic ecosystems. The research has been done on reducing the BOD, COD, and TSS values of liquid waste from RPA by coagulation using an alum coagulant made from aluminum bottle caps. The purpose of this study was to determine the KOH, H₂SO₄ concentrations, heating temperature, heating time, and sample weight of aluminum bottle caps that produced the greatest amount of alum, as well as the percentage reduction in BOD, COD, and TSS values of chicken slaughterhouse liquid waste following the process of coagulation with alum coagulant made from aluminum bottle caps. This research demonstrated that the utilization 25% KOH, 7M H₂SO₄, and a heating temperature of 85 °C for 15 minutes produced the most alum from aluminum bottle caps and 4 grams of aluminum bottle caps sample produced 52.511 grams of alum, but the weight of the aluminum bottle caps sample did not affect the alum yield in the experimental results. The percentage reduction in BOD, COD, and TSS values were 77.778%; 95.758%; and 93.467% respectively.

Keywords: heating time, H₂SO₄, KOH, temperature.

