BAB V
KESIMPULAN DAN SARAN

5.1 Kesimpulan

Berdasarkan hasil penelitian yang telah dilakukan, dapat disimpulkan bahwa :

1. pH koagulasi terbaik untuk zat warna tunggal *congo* merah dan *tartrazine* serta zat warna biner pada pH 3 akibat muatan yang dikandung koloid dan koagulan saling berlawanan sehingga koloid menjadi tidak stabil dan terkoagulasi; peningkatan pH > 3 menurunkan %-*removal* dan volume *sludge*.
2. Nilai %-*removal* proses koagulasi zat warna tunggal *congo* merah cenderung meningkat seiring meningkatnya dosis koagulan hingga mencapai dosis 450 mg eq BSA/L; pada dosis yang lebih tinggi terjadi sedikit penurunan %-*removal* akibat terjadinya restabilisasi koloid. Untuk zat warna tunggal *tartrazine* dan zat warna biner; peningkatan %-*removal* zat warna terjadi seiring peningkatan dosis koagulan hingga mencapai 1150 mg eq BSA/L dan 1050 mg eq BSA/L. Penambahan dosis koagulan lebih lanjut tidak mengubah %–*removal* yang diperoleh. Koagulasi zat warna *congo* merah menghasilkan %-*removal* yang lebih baik pada dosis yang sama dengan *tartrazine* karena perbedaan berat molekul zat warna. Profil volume *sludge* seluruh zat warna meningkat seiring meningkatnya dosis koagulan.
3. %-*removal* zat warna tunggal *congo* merah dan *tartrazine* serta zat warna biner menurun seiring meningkatnya konsentrasi awal zat warna, mencapai kondisi terbaik pada 50 mg/L. Sebaliknya; volume *sludge* meningkat seiring meningkatnya konsentrasi awal karena pada dosis koagulan yang sama, protein tidak dapat mengkoagulasi seluruh partikel zat warna yang semakin meningkat sehingga masih terdapat zat warna yang tersisa.

5.2 Saran

Beberapa saran yang dapat diberikan untuk penelitian lebih lanjut adalah :

1. Perlu dilakukan penelitian lebih lanjut tentang koagulan alami yang dapat mengkoagulasi zat warna sintetik *tartrazine* yang lebih efektif sehingga dapat diperoleh %-*removal* yang relatif tinggi.
2. Rentang pH yang digunakan perlu diperkecil agar mendapatkan nilai pH terbaik yang lebih akurat.

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