

Thesis Title	Conditioning and Dewatering of Dissolved Air Flotation Sludge from Tuna Cannery Effluent
Thesis Credits	12
Candidate	Mr. Pattamakorn Chanapai
Supervisors	Assist. Prof. Dr. Chalermraj Wantawin Assist. Prof. Supanee Lertriluck
Degree of Study	Master of Engineering
Department	Chemical Engineering
Academic Year	1998

### Abstract

This research was conducted to study physico-chemical conditioning of Dissolved Air Flotation, DAF, sludge from tuna cannery effluents. The sludge was taken from flotation of DAF pre-treatment system that utilizes alum as coagulant. In experimental procedures, two categories of conditioner, natural and chemical, were selected for tests. Several parameters such as FDV (Free Drainage Volume), TMDV (Three Minutes Discharge Volume), SRF (Specific Resistance of Filtration) and Percent of Suspended Solid in Filtrate were used to find out optimum dosage, mixing time and mixing speed, and in case of natural conditioners add up with heating effect.

The results show that, without conditioner dosing, heat effects to sludge quite apparently, and with dosing, mixing intensity contrastly varies to dosage. In case of condition with natural type, chicken blood is more effective than trash fishes. The optimum condition for chicken blood is 85°C heating, 5 minute mixing, and 10percent by weight dosing. And trash fishes dosage is effectiveness at 95°C. In another type, chemical conditioner, the most effective is cationic polyelectrolyte which shows

optimum condition at 0.025-0.05 percent by weight dosage and mix at  $Gt = 17,000$ - $25,000$ , by cost of chemical and energy are 0.35-0.69 and 0.02 Baht per kilograms of dry cake, respectively.

Keywords : Sludge Conditioning / Dewatering / Dissolved Air Flotation / Coagulation.