Thesis Title	Waste Minimization of Cold Storage Factory
	Case Study: Freezing Fish Factory
Thesis Credits	6
Candidate	Miss Nitchanan Nimnu
Supervisors	Asst. Prof. Dr. Suntud Sirianuntapiboon
	Assoc. Prof. Dr. Sirnintornthep Towprayoon
Degree of Study	Master of Science
Department	Environmental Technology
Academic Year	1998

Abstract

The aims of this research were concerned in the waste minimization of fish processing factories. In generally, food industries used high volume of water in the processing activity because of hygiene effect. However, almost of the factories were located near the river or sea. Some factories, did not have wastewater treatment plant, would discharge wastewater directly into the environment (sea or river). This kinds of wastewater, contained high concentration of organic matters, would effect to the quality of water in river or sea. And also, environmental management system (ISO 14000) was established in the food processing industries, especially importing products, for minimization of the waste

In the freezing fish factories, the water consumption were approximately 8.9 m^3 per ton of raw materials. And about 63-80% of water consumption was wastewater. It meaned that approximately 6.9 m^3 of wastewater was produced per ton of raw materials. Wastewater of the factory was mainly produced from defrost, processing, washing and domestic use. Wastewater from washing proposes was 32% of total wastewater. The wastewater from cutting had highest in BOD_5 (2,347 mg/l). The solid waste, was produced about 55% of raw material, was head bone, intestine and so on. From aboved results, we could say that the waste minimization principle could be used such as high pressure cleaning system and use of automatically closing valve and reuse of defrost and cooling water. By aboved management, the consumption of raw water could be reduced. For example, by using

the high pressure cleaning system and use of automatically closing valve, the raw water consumption was reduced about 50%. And by using the reuse of defrost waste and cooling water, the raw water consumption was reduced 50% and 98%, respectively.

The methods of wastewater treatment to the combination between anaerobic filter and activated sludge. The BOD_5 removal efficiency were 77.32% and 95.76% in anaerobic filter process and activate sludge process respectively. The final effluent was found in compliance with the industrial wastewater effluent standard and reusable

Keywords : wastewater reduction / freezing fish industries / reuse and recycle / waste minimization