

Chanatip Panchan 2013: Application of Cleaner Technology in Cooling System Process for Broiler Chicken Husbandry. Master of Science (Environmental Technology and Management), Major Field: Environmental Technology and Management, Department of Environmental Technology and Management. Thesis Advisor: Assistant Professor Jukkrit Mahujchariyawong, Ph.D. 95 pages.

This research aimed to apply cleaner technology to feeding process in broiler chicken husbandry. Cost reduction, energy saving and environmentally friendly management were investigated. The CT assessment showed that energy consumption was highest cost and cooling system is the highest energy consumption. The temperature control unit consisted two parts, cooling fans and cooling pads. One of CT options was to improve the air flow of cooling pads and to distribute cool air over all areas of the house. When the location of cooling fans was adjusted move near cooling pads, air flow through cooling pads was increased. The result showed that the inside temperature was decreased around 2 °C and cool air was distributed throughout the house. Therefore, the distribution of broiler in all areas became better. Cooling fan reduction conducted the lower energy consumption for 39.74 percent as the energy cost saving at 39.70 percent of cooling system energy. In the term of environmental friendly, the CT option reduced greenhouse gas emissions for 5.186.33 kgCO<sub>2</sub>eq. per year. The Temperature control will allow the better feed conversion rate and growth rate which cost-effectiveness production can be expected.

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