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KEY WORD : CATTLE MANURE MANAGEMENT PATTERN / DAIRY FARM

SUMET METTASART : THE STUDY ON APPROPRIATE CATTLE MANURE MANAGEMENT PATTERN FOR SMALL SCALE DAIRY FARM : A CASE STUDY OF KAMPAENGSEAN DAIRY COOPERATIVE LTD. FARM. THESIS ADVISOR : SURA PATTANAKIAT; M.Sc. USANEE UYASATIAN; M.Eng.76 p. ISBN 974-589-412-5

Dairy cattle manure from small scale farms in Kampaengsean Dairy Cooperative does not receive proper treatment. There is a trend of increasing quantity of manure related to growing dairy population. More manure causes a greater number of insects which become disease carriers to dairy cattle and cause environmental impact.

This study is designed to identify the appropriate cattle manure management pattern for small scale dairy farms and also to analyse the economic viability of the suggested pattern. The farm selected for the experiment had 13 standing dairy cattle which excreted 210 kilograms of manure per day. About 160 kilograms (76%) of manure were flushed to a digestion chamber to produce methane and 50 kilograms (24%) were taken for dewatering and drying in a tray dryer for 3 hours. The source of energy to make hot air to evaporate moisture in the manure was methane from the digestion chamber. The end product at 3 hours was 30 kilograms of cattle manure which had an average moisture content of 54.59 %, which could be sold as fertilizer.

The result shows that the proportion 76:24 of cattle manure to produce biogas and to be put in dryer is an appropriate cattle manure management pattern. The investment is feasible considering both direct and indirect benefits.