DEVELOPMENT OF A STRATEGIC CLEANING PROCEDURE FOR EFFECTIVE WATER USAGE AT THE MEAT PROCESSING FACTORY, KEELLS FOOD PRODUCT PLC

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Wastewater generation at the Keells Food Product factory is above the capacity of the wastewater treatment plant. There are three main product processing lines; skin on sausage, skin less sausage and frozen meat product. All the production lines are mechanized and operated by fourteen different machineries. After any given production each and every machine is cleaned until no physical particles remaining in the machineries and flow area. After cleaning, microbial count should be below 10^2 CFU. The cleaning process produced a massive volume of wastewater due to the absence of a proper cleaning procedure. Thus, a study was conducted at the above factory with the objective to propose a strategic cleaning procedure (SCP) to reduce the amount of wastewater generation. The amount of water used for cleaning these 14 machineries at different processing lines was estimated by two procedures employing a regular labourer; (1) using the current procedure and (2) using a proposed SCP. The data were collected for each machine for seven consecutive production days for the each procedure. The water usage for cleaning using both procedures was compared by a paired T test. According to the results the regular labourer has used 484.5 ± 3.37 of water for cleaning one machine compared to 326.29 ± 3.62 from the proposed SCP which was a significant reduction of 33% due to the proposed SCP. Further, the water meters indicating the water input, water storage and water output were also tested for errors. It was observed that there were defects in water meters. Thus, the Keells Food Product PLC, Gonawila, Makandura has taken necessary steps to adapt the proposed SCP for cleaning the machineries at different processing lines and adjust the defects in water meters. Further, the findings were to be included in the water foot print plan expected to be developed for the factory.

Keywords: Cleaning machinery, Processed meat products, Waste water, Water usage