

## **Identification of Solid Losing Points and Quantification of Total Solid Loss in Coconut Milk Powder Production**

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Coconut milk powder is a water dispersible solid obtained by drying an aqueous extract of coconut (*Cocos nucifera*) kernel. It is a substitute to coconut milk which makes cooking convenient. A Sri Lankan coconut milk powder production plant equipped with spray drying technique is experiencing a solid loss problem during its production process. This case study was carried out to identify the solid losing points and to quantify solid loss during the process. Solid contents in raw materials, intermediates and final product were measured and solid loss from each step was calculated. Daily waste generation was recorded. Accuracy of tote bin scale set point and flow meters was investigated by checking the deviation between set point and actual quantity in several trials. The human errors in total solid analysis, rework bagging and plunging process were identified by monitoring working behavior of operators. Accuracy of total solid, fat and moisture analyzers was determined by analyzing previous calibration data. Sample weights were recorded during a month and sampling loss was estimated. Average total solid loss quantified through this study was 0.52%. In conclusion, waste generation, sampling loss and human errors were identified as the major causes for total solid loss. Standardizing the unloading process using flushing water in a predetermined constant temperature and pressure for a constant time, reducing waste generation and sustaining through attitude development, displaying posters, training on correct methods of rework bagging, plunging and total solid analyzing, standardizing the required sample quantity, defining the sampling points and using instrument calibration data tracking tools can be recommended to reduce solid loss in commercial scale coconut milk powder production processes.

*Keywords:* Coconut milk powder, Spray drying, Total solid loss