

MONASH INDUSTRY TEAM INITIATIVE (MITI)

YIELD LOSS MONITORING

Emma Selwood (BChemEng/ BPharmSci) | Isabella Li (BChemEng/ BPharmSci)

INTRODUCTION

BACKGROUND

Burra Foods is an Australian dairy ingredient manufacturer that has been in business for over thirty years. Initially started by the Crothers brothers, Grant and William, it is now a globally renowned company selling the highest quality products. The plant is based in South East Victoria, Korumburra and is also where this project was carried out.

YIELD LOSS QUANTIFICATION AND MONITORING

Burra Foods' wastewater treatment plant routinely receives volumes and milk solids which stress its design capability. This project will improve understanding of routine milk solids losses to wastewater and, through application of a waste minimisation hierarchy, will identify reduction opportunities. A reduction in milk solids losses will provide twin financial benefits of yield improvements and wastewater treatment plant cost reductions.

Although the scope was initially detailed prior to the commencing of the project, there was also room for additional tasks to be taken on.

PROJECT SYNOPSIS

This project aimed at gaining improved understanding of the volume and milk solid losses. Primary aims included the quantification and reduction of milk yield losses in routine operations, inclusive of start-up, shutdown and during operation.

METHODOLOGY

- Project planning and research
- Documenting observations and comparing findings
- Identifying and analysing areas of high loss potential
- Determining trends and analysing reasons causing the trends

PROJECT EXPERIENCE AND LEARNINGS

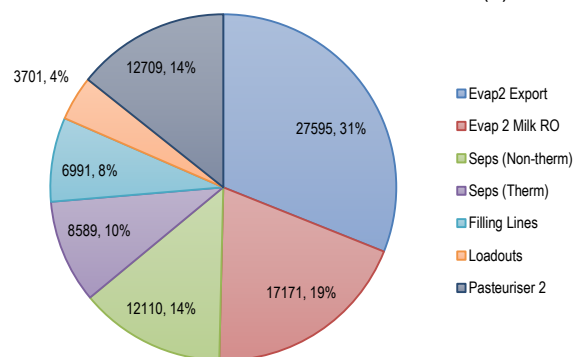
- Exposure to working culture in a dairy manufacturing plant
- Effective communication with operators, engineers, managers, maintenance staff and electricians.
- Developing real world solutions to a potential problem in the dairy industry.
- How to efficiently work as a team based on individual strength and weaknesses and skills
- Deviation from ideal solutions to real-world manufacturing processes.



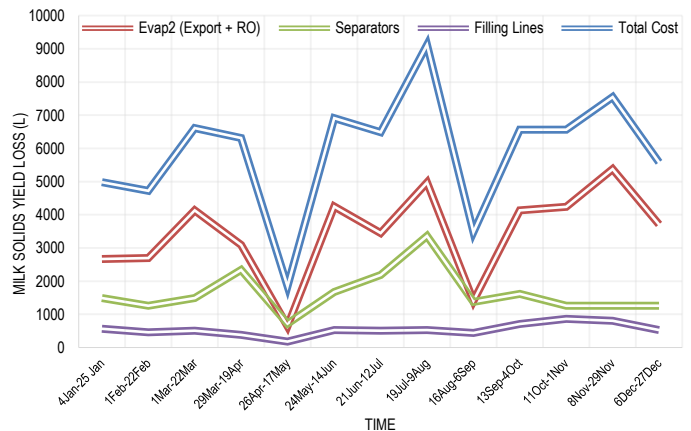
FINDINGS

- Identified filling line shutdown flush being operator dependent, based on 'eyeballing' consistency into rework tank, and manually diverted to the drain
- Quantified monetary value for events occurring at start-up and shutdown and extended to a per annum basis.
- Discrepancies between manual sample data and monitoring data, potentially due to calibration error in Lactoscope and instrumentation.

2019 YIELD LOSS DISTRIBUTION (L)



ESTIMATED YIELD LOSS VOLUME OVER 2019



FUTURE SCOPE/RECOMMENDATIONS

- Determine expected solids loss for various combinations of individual sub-processes and consequently establish baseline for both normal and abnormal readings at the monitoring system.
- Potential installation of automated system at filling line for more standardised consistency before being diverted down the drain.
- Standardise operator behaviour for Line 1 and 2 shutdown flush procedure

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