

*A project initiative of the Victorian dairy industry proudly sponsored by the Gardiner Dairy Foundation in partnership with Monash University*

# Monash Industry Team Initiative (MITI) 2015-2016

## Process Optimisation to Enhance Plant Performance

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### Site Information

Tatura Milk Industries (TMI) has been manufacturing dairy products across a Global Market for over 100 years. They manufacture over 80,000 tonnes of dairy product per annum where over 70% is exported to Asian and European markets.

In 2012, TMI merged with Bega Cheese to expand its product line and market. It is now a wholly owned subsidiary of Bega Cheese. In the 2014-15 financial year, TMI made a post-tax net profit of \$1.097 million. This contributed to 8.84% of Bega Cheese's post-tax net profit of \$12,408 million.



### Cheese milk Standardisation Optimisation

- . Collected data at different states for both the inputs and the outputs of the BASK Standardiser to determine its current capacity
- . Suggested improvements to current processing through analysis of data and further research
- . Investigated other cheese milk standardisation options to potentially improve processing further

### CD2 25kg Powder Packing Giveaway

- . Collected data from the in-line industry approved scales to obtain a wide range of data for statistical analysis
- . Investigated potential reasons for variation like machine capability and product differences
- . Trialled machine settings to reduce giveaway and made recommendations to ensure sustainability of reduction efforts

### Optimising Milk Protein Concentrate Plant's Membranes

4 projects were successfully completed to help operators optimise the MPC plant:

- . A computerised model that predicted the MPC composition from the plant's inputs.
- . A database that monitored the health of the MPC plant's membranes.
- . Recommendations towards fixing a process issue which saw the MPC plant over-concentrate above desired Protein/Total Solids specifications at the start of a production run.
- . A detailed document of how the MPC plant functions for operators.

### Product Loss Review—Separator Plant

- . Reviewed out of date P&IDs from separator plant
- . Analysed losses associated with separator start up and product transfers
- . Proposed multiple recommendations to minimise losses upon start up and product transfer

### Chub Line Optimisation

- . Identified variables which affect cream cheese packing machine performance
- . Measured and quantified the effect each variable has on line performance
- . Proposed multiple recommendations to increase line performance and potentially reduce product giveaway

### Materials Movement in the Packing Area

- . Qualitative and quantitative analysis of pallet movements during line operation
- . Construction of predictive model for present and future state analysis
- . Consideration of improvements to current scheduling system
- . Assisted in conducting trial of the new system

