

# MONASH INDUSTRY TEAM INITIATIVE (MITI)

## Controlling Sediment in Farm Milk

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### Introduction

#### Background

Burra Foods is a globally renowned Gippsland based dairy manufacturer that specialises in creating high quality dairy products for global markets. Founded by the Crothers Brothers over 30 years ago, it has created products including natural cheese, fresh milk concentrates, food preparations, specialty milk powders, nutritional milk powders, and fresh dairy ingredients.

#### Project Scope

- Audit, assess and identify the best practice for sediment control on farm
- Determination of the steps required to achieve best practice
- Formulate method in order to better predict the potential sediment rates in farm milk

#### Milk Sediment Control

##### What is Sediment?

Sediment is the unwanted material that gets into the milk. This includes udder hair, sand, mud and bedding/grass/hay etc. that can get through on farm systems and into the milk. In order to comply with a wide range of standards, from internal product quality to national food safety to international export standards, sediment must be removed before the final product is ready.

### Project Outcomes

#### Best Practice Guide (A4 sheet)

Through the visiting of a range of Gippsland dairy farms, we were able to identify and isolate the primary and secondary factors that caused high or low concentrations of sediment in farm milk. These identified factors were collated into an A4 best practice sheet, which would then be distributed to farmers. This allows the farmers to monitor and compare their practice to the identified best practice.



Farm Data																																
	Wash (0 or 1)	Staff (Integer value)	Soil Moisture (%)	2 day Soil Moisture (%)	Feed Pad (0 or 1)	Number of Cows (Integer)	Number of Filters (Integer)	Fiber Width (mm)	Fiber Length (mm)	Paddock fed (0 or 1)																						
Effect (%)	78.0735473	0	3.062322462	2.632107573	0	250	1	150	750	0																						
Numerical Rank value	1.213041942																															
Predicted Sediment Rank	A																															
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#### Predictive model

Using the identified factors that affected sediment rate in milk, we were able to construct a predictive model for sediment rate in milk based on provided details from farms. By combining past sediment data, identified factors and newly tested sediment data, a preliminary predictive model was able to be produced which enables Burra Foods to identify the potential rate of sediment in every milk collection.

#### Future Recommendations

- Update the predictive model to allow for more effective data collection
- Further sediment testing to better calibrate the model
- Investigate potential engineering solutions at a factory level

#### Acknowledgements

We would like to thank Burra Foods for hosting us and guiding us during this project. We would also like to thank the MITI program and the Gardiner Foundation for their support in making this experience possible.

