final report

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Prepared by: George Waldthausen
MLA
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Meat and Livestock Australia Limited
Locked Bag 991
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Cargill SmartShape Stage 2 – Production Prototype

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The report relates to the following milestone:

2.2 Complete manufacture and Factory Acceptance test (FAT). Deliver SmartShape machine, including additional moulds, spare parts & final engineering drawings. Milestone reviewed and approved by MLA.	Completion by 1-Jul-2011	Fees, salaries, wages AUD12,000	Expenses AUD2,000

Rata Shuttleworth (Cargill) and George Waldthausen (MLA) inspected the Cargill SmartShape machine at Fix-All services, Hamilton on 9th June 2011.

Cube roll samples were delivered on the 8th June, and the machine had been completed on the 6th June, so very little or no testing had been done using the large cube rolls that Cargill will be processing.

General observations:

- The machine incorporated numerous improvements as compared to the existing prototype, especially in the areas of access, maintenance, OH&S and performance.
- GW checked the list of engineering changes agreed at the Dubbo meeting in 2010, and confirmed that these had been addressed in the new design.
- Owing to time limitations, the previously agreed packaging head was installed. Any different or improved packaging system would need to be included as future R&D.

A sample cube roll was tested, and the following engineering changes agreed.

Item	Status
Develop user manual	
Machine hour/cycle meter. Lifetime counts not able to be reset but visible (on separate screen). Separate cycle counter to be visible to user and able to be reset.	
Fix vacuum leak at higher pressures (add ridge)	
Protect air hose on base with knobs, also extend hose	
Add drain holes to base plate	
Make base plate easier to remove/clean	
Add drip tray below base plate	
Labels on switches/buttons	
Alignment mark on rubber and rim of mould holder	
Add exhaust fan in electrical cabinet	
Update auto sequences in program for larger cube rolls	
Update program to handle one size package only, switching from two equal sized heads	
Anti-microbial spray cycle	Cargill to do on site
Remove rubber boots on mast – food safety issue	

Arthur Pitt (FAS) agreed that the above could be completed by 24th June, with an approximate two week delivery to Cargill Wagga (i.e. by 8th July).

FAS would then commission the machine, and Roger Lim would carry out an OH&S audit before the unit was put into full production.

Viper packaging is currently developing packaging material (DC/GW reviewed this 15/6). The intent is to use 70cm perforated tubes (effective tube length 60cm after allowing for angled perforation). There will be pin prick size air holes to allow air to escape. Cargill intent to place the shaped product into a further vacuum sealed barrier bag.

Future development

Subject to the successful performance of the new machine, the following was noted as possible next steps.

- Cargill would probably require 5 cycle per minute throughput, but would prefer to do this via two or more machines.

- Cargill may order a second machine (base machine cost not included as part of the MLA project), but with an improved packaging system (design to be discussed). However MLA may cover the R&D cost of the new packaging system under the current PIP project.

- If the improved packaging system works, the first machine would then be upgraded.

Note that it is unlikely that multiple packaging sizes would be used at any one time i.e. any packaging system would handle only one size at a time.