



# final report

Project code: P.PSH.0407  
Prepared by: Rata Shuttleworth  
Cargill  
Date submitted: February 2011

PUBLISHED BY  
Meat & Livestock Australia Limited  
Locked Bag 991  
NORTH SYDNEY NSW 2059

## **Development of Microwave Roast Beef Product**

### **Milestone 5 report**

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government to support the research and development detailed in this publication.

This publication is published by Meat & Livestock Australia Limited ABN 39 081 678 364 (MLA). Care is taken to ensure the accuracy of the information contained in this publication. However MLA cannot accept responsibility for the accuracy or completeness of the information or opinions contained in the publication. You should make your own enquiries before making decisions concerning your interests. Reproduction in whole or in part of this publication is prohibited without prior written consent of MLA.

---

## Contents

	Page
1 Milestone.....	3
2 Project objectives .....	3
3 Success in achieving milestone .....	3
3.1 Microwave cooking trials.....	3
3.2 Scale Up Trials and Logistics.....	3
3.3 Bagging Systems.....	4
3.4 Shelf Life Trials.....	4
3.5 Handling instructions .....	4
3.6 Processing HACCP audit and development.....	5
4 Business Strategy for Product .....	5
5 Recommendations.....	5

## 1 Milestone

Further Research and Development into innovative packaging for microwave application

## 2 Project objectives

Report that outlines final packaging to be used as well as the business strategy for the product

## 3 Success in achieving milestone

### 3.1 Microwave cooking trials

---

With the use of Dylora's self venting microwave bag extensive trials have been undertaken by David Carew to validate that the finished roasting piece (0.575 Kg) takes approx 16 minutes to cook when the microwave is on 50% power.

Follow up validation thru internal cooking trials have been undertaken since March 2011 which have confirmed the 16 minute cook time.

It must also be noted that the roast product needs to be rested for approx 4 minutes after cooking. The doneness level of the cooked roast after 16 minutes cooking and 4 minutes resting has been medium to well done

*Microwave Tray research*

To date all trials that has been undertaken with a 40mm Black Cryovac Simple Steps tray.

During the cooking trials that have been undertaken since March 2011 there has been no negative impact on tray strength post cooking.

### 3.2 Scale Up Trials and Logistics

---

Scales up trials have been undertaken on Microwave Beef product at both the Wagga plant and at Earlee Products. Based trial results to date we do not expect any significant impacts on productivity as we already process significant volumes of injected product at the Wagga processing facility.

The best case scenario on volume for this product lines would be 4200 retail units per week OR 3MT. We have extra production capacity to process this product at our Wagga plant

The necessary equipment to process this product lines exists with the Wagga plants asset footprint for further processing.

Based on the 21 day shelf life, logistics and distribution to domestic customers do not present and problems\issues

### **3.3 Bagging Systems**

---

Granted that we need to place a microwaveable bag over the tray we have investigated options on bagging systems.

To date based on small production volume the most cost effective method is manual bagging of finished product in trays. On the basis that we significantly increased production volume on this product we would investigate automated bagging equipment.

The placement of the butter plug under the roasting piece has significantly increased cycle time during the bagging and vacuum sealing process.

### **3.4 Shelf Life Trials**

---

In the initials stages of the product development the max shelf life that could be attained was 14 days. Target customers requirements for this product were 21 days shelf life.

In March 2010 Earlee products made changes in the original injection mix and this has resulted in independent laboratory shelf life validation of 21 days.

We have also undertaken further sensory testing on product samples up to 21 days. These have included odour of raw product, visual appearance of product and palatability of cooked product. No abnormalities have been observed during these trials.

### **3.5 Handling instructions**

---

Handling instructions of product have been outlined on outer sleeve packaging and will also be outlined on microwaveable bag to ensure safe handling of the product post cooking.

The handing instructions have been used during microwave cooking trials. To date the handing instructions have been effective in the safe handling of the product post cooking.

### **3.6 Processing HACCP audit and development**

---

We currently manufacture injected beef products in our further processing rooms at the Wagga processing facility. HAACP plans and audits systems are already in place to ensure the food safe manufacture of the microwave beef product.

In summary, the packaging that we will be used for product manufacture will be as follow:

1. Dylora Microwaveable Bag ( L 310mm x W 230mm)
2. Cardboard outer sleeve ( L 255mm x W 155mm)
3. 40mm Black Simples Steps Microwaveable Tray

## **4 Business Strategy for Product**

The business strategy for this product will be to successfully launch product with a market leader in domestic retail.

Granted that we have a long term business partnership with Woolworths Limited we have decided to launch this product line with this business.

The target launch volumes for this product would be 4200 retail units. This would be a national launch product into Woolworths 700 stores

The finished product has been presented to Woolworths Limited in May 2011. They are very keen to progress this to a product launch but require external consumer sensory to be undertaken.

## **5 Recommendations**

As outlined in the above report we now have a finished product ready to manufacture and launch with Woolworths Limited.

We already possess the further processing asset footprint and capabilities to manufacture the target 4200 retail units per week.

We would request that we make a variation to the Project Agreement to jointly fund external consumer sensory trials so we can get the product to market.

The actual operating expenses for milestone 5 have been approx \$5000 whereas the operating costs per the project agreement was \$55'000. The recommendation would be to use these funds not used in milestone 5 towards external consumer sensory trials