

final report

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Resource Flock Sensory Evaluation and MSA Mark II Model Development

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Executive summary

The University of New England was contracted to complete consumer sensory tests for further MSA model development, in conjunction with INF and Resource flock genetic and genomic testing. A total of 896 lambs were utilised to collect loins, knuckles and topsides for grill samples. Of the 896, 200 lambs were utilised to collect racks, shoulders, legs and knuckles for roast samples, as well as loins, rumps, outsides, knuckles and topsides for grill samples. Consumer sensory data were collected from 6000 consumers, over 100 consumer sensory sessions, with results incorporated into the cuts based MSA grading model for sheepmeat.

Table of contents

В	ackground	4
Ρ	roject objectives	4
О	Outcomes	4
3.1	Product collection	.4
3.2	Sensory testing	.4
3.3	Professional development	.5
C	onclusions/recommendations	5
А	ppendix 1 – pH decline graph example	6
	8 P 3.1 3.2 3.3 C A	Background Project objectives Outcomes

1 Background

This project aims to conduct sensory testing of the INF and Resource flocks, based around the country (Kirby and Katanning). The Resource flocks are a representation of industry sires across all breeds with a first cross or merino ewe base.

All animals will have fixed effect genomics and performance tests, which will enable genetic linkages of sensory traits to productivity and profitability traits e.g. growth and eating quality.

This research will build the reference population of phenotypes; which is essential for eating quality prediction and genomic tools to work in industry for the prediction of eating quality.

2 Project objectives

This project was designed to conduct consumer sensory testing over two years. Sixty (60) sensory picks (individual sessions) were conducted by Tastepoint Pty Ltd and an additional 40 picks were completed by the University of New England (UNE) Meat Science team.

3 Outcomes

3.1 Product collection

The product for this work was collected at Thomas Foods International Tamworth abattoir (MSA# C394). On the day of slaughter the UNE Meat Science team collected pH decline data and tagged each carcase with an individual tag number. This tag number correlated back to the original eartag to ensure complete traceability.

A total of 896 lambs from the resource flock at Kirby were utilised to collect loins, knuckles and topsides for grill samples. Of the 896, 200 lambs were utilised to collect racks, shoulders, legs and knuckles for roast samples, as well as loins, rumps, outsides, knuckles and topsides for grill samples.

After collection all product was brought back to the UNE Meat Science Lab for cut up into individual consumer sensory samples, intramuscular fat analysis (near infrared spectroscopy; NIRSystems 6500), fresh colour analysis (Minolta), retail colour analysis (Hunter Lab) and Warner-Bratzler shear force measurements in the meat science lab at UNE.

Consumer sensory samples were frozen down after 5 days ageing and shipped to Tastepoint Pty Ltd or remained at UNE for sensory testing.

3.2 Sensory testing

Tastepoint Pty Ltd were contracted to complete 60 sensory picks; 25 roasts and 35 Grills between June 2018 and May 2019. All picks were completed in accordance with the MSA sensory protocols for sheepmeat.

Forty (40) picks (grills) were held at UNE for consumer sensory testing. All picks were completed in accordance with the MSA sensory protocols for sheepmeat.

3.3 Professional development

During this time, the UNE Meat Science department has maintained and grown a team of skilled and efficient employees. The UNE Meat Science team is capable of collecting product in a commercial environment, breaking down lamb primals and carcases to produce sensory samples, as well as picking, posting and conducting sensory testing for the Meat Standards Australia program. Fostering and developing these skills in our workforce, many of whom are students who will enter industry upon their graduation, is an extremely valuable addition to the work completed as part of this contract.

4 Conclusions/recommendations

Product was collected from 896 lambs from the 2017 drop. From these lambs 100 picks were collected to be eaten as roasts and grills. The data from the sensory testing has been an important inclusion into the cuts based MSA grading model for sheepmeat.

5 Appendix 1 – pH decline

The following pH decline displays 21 of the 195 lambs in kill 1 (05 June, 2018; NB only 21 hd shown to highlight the variability in pH declines.



Once all 196 lambs are averaged, the graph displays a linear decrease in pH and temperature over time.

