



CO-ORDINATED SAMPLING PROJECT 16 - Meat Products

Conducted April to May 2015 with Local Government's across Western Australia



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Local Health Authorities Analytical Committee

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Executive Summary

This Coordinated Sampling Project focused on meat products. The Local Health Authorities Analytical Committee (LHAAC) and Local Government Authorities (LGA's) worked in concert to execute this project. It is essential that Western Australian citizens have access to meat products with accurate nutrition information panels, that adhere to the standards set for meat content and preservative content as described in the Food Standards Code (FSC).

The purpose of this project was to assess meat products in Western Australia for nutrition information panel accuracy with a +/-20% standard applied by LHAAC and against the standards set by Food Standards Australia and New Zealand (FSANZ) (2015) for meat and preservative content for sausage and mince products. This was achieved through Environmental Health Officers at LGA's throughout Western Australia submitting meat samples for analysis to LHAAC appointed analysts (Agrifood or ChemCentre).

169 samples were submitted for analysis by LGA's throughout Western Australia. Of these 169 samples, 59 had nutrition information panels that were available for comparison with analysed nutrient contents. 348 nutrient items were assessed and 20.1% of these tests were found to be inconsistent. When assessing the samples for inconsistency on a per sample basis 88.1% were found to contain at least one inconsistency. Sausage meat was found to contain a high degree of consistency with 96.7% compliance with the standard for meat content, and 98.9% compliance with the standard for permitted preservative levels. Minced meats also had a high degree of compliance to the standard for permitted preservative levels with 97.1% found to be compliant.

This CSP demonstrates a high degree of compliance for Western Australian meat products particularly with the nutrition information panel accuracy, meat content standards and preservative level standards. Western Australian consumers can be re-assured that meat products throughout Western Australia adhere to the standards laid out in the Food Standards Code.

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List of abbreviations

Coordinated Sampling Project (CSP)

Food Standards Australia and New Zealand (FSANZ)

Food Standards Code (FSC)

Local Government Authorities (LGA)

Local Health Authorities Analytical Committee (LHAAC)

Background

Australians have historically consumed a steady quantity of meat, with the variety of meat changing considerably over the past 40 years with current trends away from beef and lamb and towards poultry and pork products (Australian Bureau of Agricultural and Resource Economics and Sciences, 2014).

Australian barbequed meats have been a long standing tradition throughout Australia, and are as iconic as pavlova or meat pies (Australian Government, 2015). The recommended number of serves of lean meat and poultry, fish, eggs, nuts and seeds, and legumes/beans is 3 for men and 2.5 for women, where one serve of red meat is 65g of beef, lamb, chicken or pork (National Health and Medical Research Council [NHMRC], 2013). In 2011-12 Australians consumed on average 2.5 serves of meat per day including discretionary and processed meats (Australian Bureau of Statistics [ABS], 2016). In addition to this the Australian Dietary Guidelines recommend no more than 455g of red meat each week (NHMRC, 2013), which Australians exceeded by 24% in 2011-12 consuming an average of 565g (ABS, 2016). The Australian recommendations are in line with current World Cancer Research Fund guidelines which suggests limiting the intake of red meat to less than 500g per week with little or none of this intake from processed meat (World Cancer Research Fund. American Institute for Cancer Research [WCRF/AICR], 2007).

The reason this guideline was introduced was due to the weight of epidemiological evidence supporting a relationship between red and processed meat intake and colon cancer, diabetes and heart disease (WCRF/AICR, 2017). Whilst further research is needed to elucidate this link and its mechanisms it is essential that Western Australians have access to food that is clearly and accurately labelled and meets the standards for preservative and meat content set out in the Food Standards Code in order to have the ability to make informed decisions on their purchases of meat products.

Introduction

LHAAC works in collaboration with LGA's to aid in the upkeep of the FSC throughout Western Australia. One of the ways this is achieved is through CSP's. LHAAC chooses the focus for CSP's based on routine surveillance, response to public trends and evidence of non-compliance. This CSP examined Meat Products. The nutrition information panels (NIP) (where provided) were compared with a nutrient analysis of the product as well as assessment of preservatives and meat content in relation to the current FSC. These results will be compared to the previous CSP on Sausage and Meat Products in late 2010.

Methodology

A number of meat products including burgers, rissoles, mince and sausages were sampled from both independent butchers/ meat outlets and supermarket chains (see appendix A for the specifics of allocated samples to each LGA). Metropolitan LGA's were advised to sample from major supermarket chains first and some independent butchers. If a supermarket did not have the product listed to collect then a substitute product may have been chosen or an additional item from an independent butcher. Non-Metro LGA's who did not have a supermarket were requested to collect samples from independents only. If a LGA was not asked to collect samples from a specific outlet, but wished to participate then they were requested to submit samples of sausage, mince, burgers or rissoles from their independent butchers. For LGA's who wished to collect from outlets outside their allocated samples then it was suggested that no more than 3 additional samples were collected.

Samples were then submitted to either Agrifood or ChemCentre with a minimum size stated of 250g. Samples were to be chilled immediately upon collection and supplied chilled to the analyst, ideally in a press sealed bag. Samples were then assessed for nutritional information against any available NIP's for compliance within +/- 20% of the stated value. Furthermore, preservative content and meat content were quantitated for assessment against the FSC chapters 2.2.1 and Schedule 15.

Results

At the end of the sampling period 169 samples had been submitted for analysis to either Agrifood or ChemCentre. All samples were analysed for nutritional information, however only 59 had an available NIP for assessment by comparison. Of the 348 tests applied to these 59 samples, 20.1% (70) were found to be inconsistent (as seen in Figure 1 below).

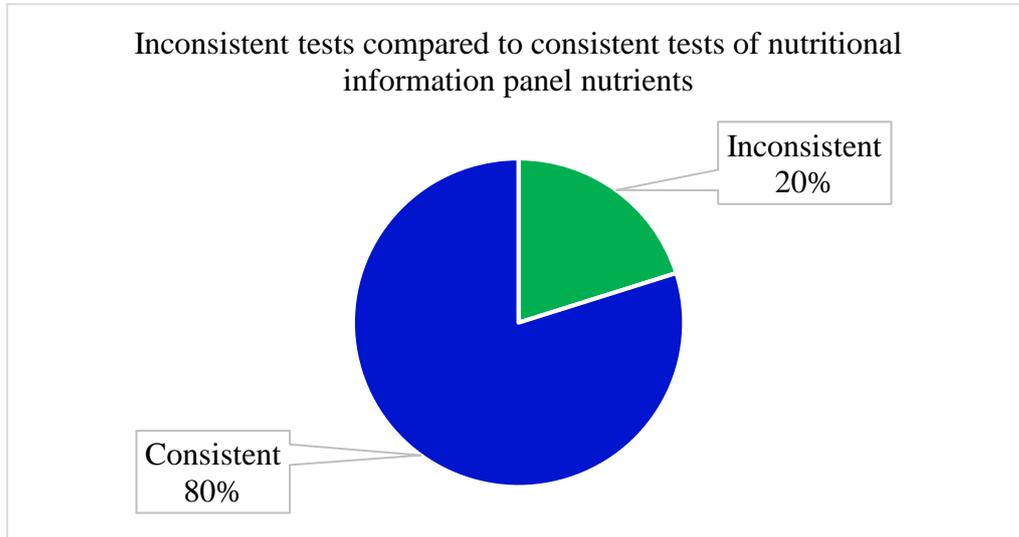


Figure 1: Inconsistent tests compared to consistent tests of NIP nutrients

However, 88.1% (52) of the 59 samples were found to contain at least one nutrient that exceeded the +/-20% limit set by LHAAC (see Figure 2 below).

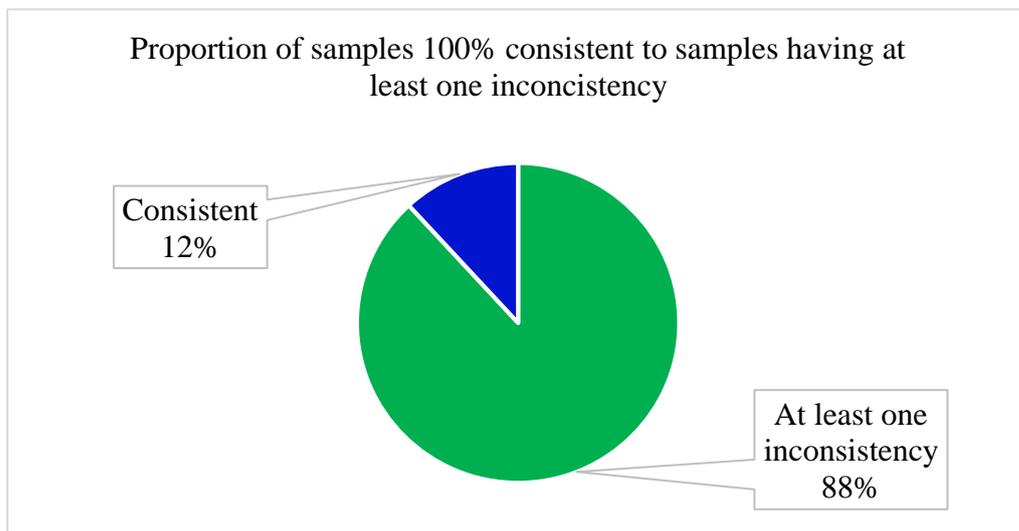


Figure 2: Proportion of samples 100% consistent compared to sample having at least one inconsistency

This result indicates a high degree of consistency across NIP's per test applied and a low degree of consistency per sample. When assessed per nutrient category we observed near uniform compliance with the +/-20% limitation set by LHAAC.

As seen in Figure 3 below energy, protein, fat, saturated fat and sodium all sit within the +/-20% limitation of deviance from the value stated on the NIP. Carbohydrate values however appear to deviate significantly with analysed values appearing higher than those stated on the NIP's.

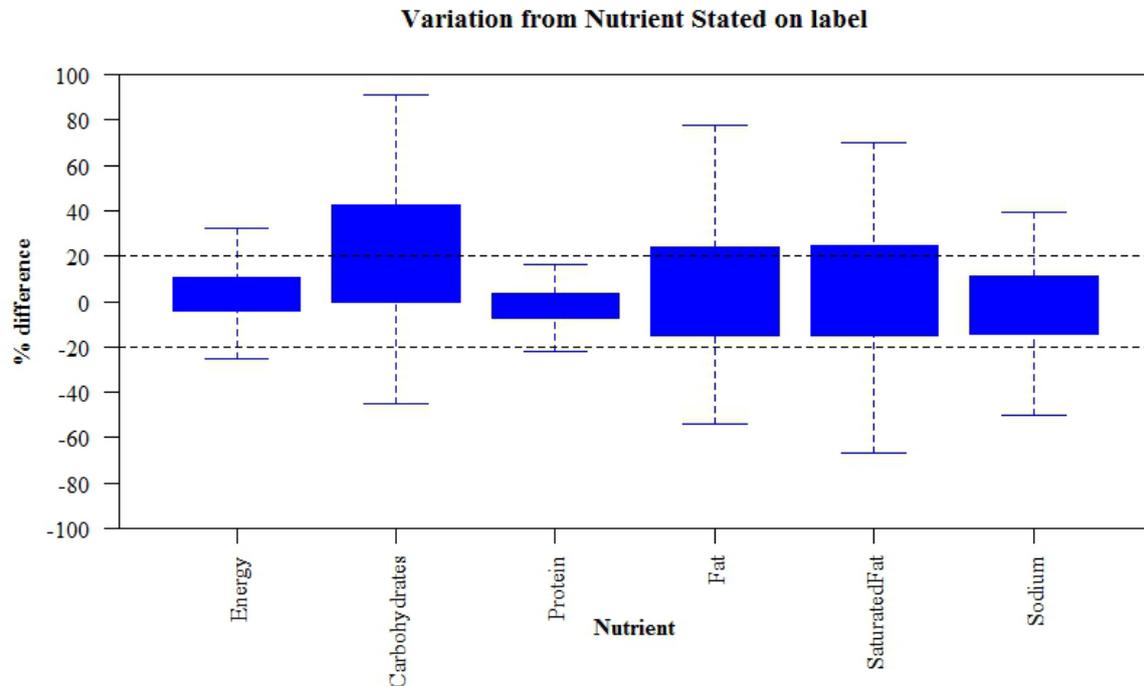


Figure 3: Variation of each nutrient from the value stated on the label. The boxes represent the interquartile range of the data and the tails represent the maximum and minimum values excluding outliers.

Sausages

According to the Food Standards Code Chapter 2.2.1 (FSANZ, 2015), the required proportion of fat to fat free meat content is 500g/kg for sausage meat. 92 sausages were submitted for assessment against this standard and 96.7% (89) of samples were found to be compliant with this standard.

Sausage meats are allowed to contain up to 500mg/kg of sulphur dioxide, sodium sulphite and potassium sulphite. 92 sausage samples were assessed for the presence of sulphur dioxide and 98.9% (91) samples were found to be compliant.

Mince/ Burgers

Minced meat products and rissoles/burgers are not specifically defined in the Food Standards Code. Standard 2.2.1 states that for the labelling of minced meat, a maximum proportion of fat in g/100g is needed if a claim is made in relation to the fat content of the product. The average level of fat free meat to fat was 20.4%.

Furthermore, Schedule 15 states that for processed comminuted meat, poultry and game products, a maximum of 500mg/kg of sulphur dioxide, sodium sulphites and potassium sulphites are permitted (FSANZ, 2015). This sample consisted of 68 samples of mince and burger products with 97.1% compliance and only two samples exceeding the limit of additives used as preservatives.

Discussion

When assessing this CSP for compliance of NIPs for an accuracy of +/-20%, the values stated on the label revealed a high degree of compliance with approximately 80% of the values assessed being compliant with this limitation. When assessed per sample rather than on a per nutrient value basis however, 88.1% of samples were found to be inconsistent. Carbohydrate was identified as the only nutrient that was observed to be deviant in this CSP (see Figure 3). This indicates for consumers that whilst there is a high degree of compliance by manufacturers with NIP accuracy, there is still a degree of caution needed in relying on NIPs to inform purchasing decisions, particularly for consumers seeking to control their weight or manage a chronic disease.

Sausage meat products showed a high degree of compliance to both individual standards imposed on these products. Only three samples of the 92 assessed were non-compliant with the level of fat to fat free meat required and only one sample (of 92) was non-compliant for the level of sulphur dioxide measured. This is a reassuring result for consumers as both of these standards are in place for the benefit of ensuring Australians have access to high quality nutritious food with minimized levels of preservatives.

There were no specific standards regarding meat content required in minced meat products. However, a declaration of fat content is required if a claim was made in regards to fat content. This measure allows consumers to make an informed choice regarding minced meat purchases. This CSP assessed mince and burger meats against Schedule 15 of the Food Standards Code and observed 97.1% compliance with the level of additives permitted in these products. This is again a reassuring result as it indicates that consumers can continue to rely on products containing the permitted levels of additives at levels deemed safe by FSANZ (2015).

In comparison to the Coordinated Sampling Project 1 – Sausage and Mince, this CSP found a similar degree of consistency. In December of 2010 LHAAC released its report on CSP – 1 which found that of the 86 sausage samples assessed only 4.6% of samples were found to be inconsistent for levels of sulphur dioxide exceeding 500mg/kg, and only 2.33% were found to exceed the limit on the ratio of fat free meat to fat. These results are consistent with those found in this CSP, and indicate a continued high level of compliance over time.

Strengths and Limitations

Co-ordinated Sampling Project 16 had a number of limitations. Sampling methods could have included a greater degree of randomization in the selection of manufacturers and vendors, and the goods selected for analysis. Sample size was also limited and NIP availability within this project was small as only 59 NIP's were available for the 169 samples analysed. Agrifood and ChemCentre conducted analysis with NATA accredited methods which are not discussed in this report, for further information see Appendix B.

Conclusion

- LHAAC, with the assistance of Local Government Authorities throughout Western Australia successfully identified with this CSP a high degree of compliance across NIP information, meat content standards and additive content standards.
- The high degree of compliance should be a reassurance for consumers as to the practices of manufacturers and suppliers in Western Australia, and their compliance with the Food Standards Code.
- The accuracy of NIP's ensures that consumers can rely on these panels for informing their purchasing decisions.
- The standards relating to meat content and additive levels ensure that Western Australians have access to high quality produce, with safe levels of preservatives.
- The comparison to CSP – 1 indicates that the observed high degree of consistency in this CSP has been maintained over time and is further evidence of the compliance of foods within Western Australia with the Food Standards Code.
- The relevant LGAs were informed of inconsistent samples and appropriate action taken to ensure the future compliance of food products in WA to the Food Standards Code.

Suggested action on non-complying products

To help to ensure consistent follow-up action on non-complying products the following actions were recommended:

1. Inform the retail outlet in writing that the relevant product does not comply with the Code.
2. When the manufacturer is based in WA, write to the manufacturer and the Local Government Authority in which the manufacturer is located.
3. In situations where the product is not manufactured in WA, the details of the non-compliance should be sent to the Department of Health who will pass the information to the correct enforcement agency in the State or Territory in which the manufacturer is located under the Home Jurisdiction Rule. A copy of the sample submission sheet and the results of analysis should be submitted to the Department of Health Food Unit with a description and details of the non-compliance.
4. Enforcement action can be initiated by a Local Government if the agency is not satisfied with the actions taken by the retailer and/or manufacturer for a product that does not comply with the Code. Where only the retail outlet is within the local government's area, this enforcement action can only be taken for sale of product that does not comply with the Code.

References

- Australian Bureau of Agricultural and Resource Economics and Sciences (2014). Agricultural commodity statistics 2014. Retrieved from:
http://data.daff.gov.au/data/warehouse/agcstd9abcc002/agcstd9abcc0022014/ACS_2014_1.0.0.pdf
- Australian Bureau of Statistics. (2016). *Australian Health Survey: Consumption of Food Groups from the Australian Dietary Guidelines, 2011-12*. (Cat. No. 4364.0). Retrieved from: <http://www.abs.gov.au>
- Australian Government. (2015). *Australian food and drink*. Retrieved from: <http://www.australia.gov.au/about-australia/australian-story/austn-food-and-drink>
- Food Standards Australia and New Zealand. (2015). *Food Standards Code*. Retrieved from:
<http://www.foodstandards.gov.au/code/Pages/default.aspx>
- National Health and Medical Research Council. (2013). Australian dietary guidelines: Summary. Retrieved from:
https://www.eatforhealth.gov.au/sites/default/files/files/the_guidelines/n55a_australian_dietary_guidelines_summary_book.pdf
- World Cancer Research Fund. American Institute for Cancer Research (2007). *Food, nutrition, physical activity, and the prevention of cancer: A global perspective*. Retrieved from WCRF/AICR website:
http://www.aicr.org/assets/docs/pdf/reports/Second_Expert_Report.pdf
- Minced Meat Image (2013). Retrieved from: <https://www.foodmanufacture.co.uk/Article/2013/12/20/UK-enforces-EU-low-fat-minced-meat-rules>

Appendix A

List of Manufactured items to be sampled

MANUFACTURER	PRODUCT	LGA TO SAMPLE
	SAUSAGES:	
WOOLWORTHS	Aussie Beef Sausages THICK	BUNBURY
	Chicken Sausages	BUNBURY
	Pork Welsh Dragon Sausages	BUNBURY
	Created with Jamie Pork Classic Cumberland	BUNBURY
	Homebrand Mixed Thin Sausages	BUNBURY
WOOLWORTHS GOLD	Beef Pepper Barossa Shiraz	ARMADALE
	Boerewors	ARMADALE
	Free Range Chicken Camembert & Onion Sausages	ARMADALE
BRITISH SAUSAGE CO.	Gourmet British Cumberland Sausage Thin	STIRLING
	Harvey Beef Chipolata	STIRLING
	Premium Chicken Thin	STIRLING
	Premium Chorizo	STIRLING
	Premium Lamb & Herb	STIRLING
	Premium Beef Thick	STIRLING
	Premium Scottish Square	STIRLING
GOURMET (WOOLWORTHS)	BBQ Beef Gourmet Chevups	SWAN
MACRO	Free Range Chicken Sausages	SWAN
MICHAEL KING OF SAUSAGES	Pork & Apple Sausages	SWAN
PEPPERCORN	Beef Sausages (Extra Lean)	GOSNELLS
	Chicken with Lime & Spice (Extra Lean)	GOSNELLS
	Pork Sausages Extra Lean	GOSNELLS
	MINCE PRODUCTS:	
WOOLWORTHS	Aussie Beef Sausage Mince	GOSNELLS
	Beef Heart Smart Mince	GOSNELLS
	Beef Premium Mince	GOSNELLS
	Beef Regular Mince	GOSNELLS
	HOMEBRAND Beef Regular	GOSNELLS
	Meatballs Italian Style	GOSNELLS
MACRO (WOOLWORTHS)	Organic Beef Premium Mince	GOSNELLS
	Chicken Mince (Free Range)	GOSNELLS

MANUFACTURER	PRODUCT	LGA TO SAMPLE
	BURGER PRODUCTS:	
WOOLWORTHS	Beef (with Cheese & Honey) Rissoles	WANNEROO
	GOLD Wagyu Beef with Japanese Sea Salt	WANNEROO
	Heart Smart Burger (4 Pieces)	WANNEROO
	Homestyle Chicken Burger	WANNEROO
	HOME BRAND Burger Economy (10 pieces)	WANNEROO
BRITISH SAUSAGE COMPANY	Harvey Beef Jumbo BURGERS	STIRLING
COLONIAL FARM	Chicken Burger	WANNEROO
	SAUSAGES:	
COLES	Classic Beef Sausages	MELVILLE
	Herb & Garlic Beef Sausages	MELVILLE
	Classic Pork Sausages	MELVILLE
COLES FINEST	Original Angus Beef Sausages	VINCENT
	Angus Beef with Garlic & Parsley Sausages	VINCENT
	Boerewors	VINCENT
	MINCE PRODUCTS	
COLES	5 Star Beef Mince	SWAN
	3 Star Beef Mince	SWAN
	Angus Beef Mince	SWAN
	Chicken Mince	SWAN
	RISSOLES/BURGERS ETC.:	
COLES	Beef Meatballs	COCKBURN
	Angus Beef Burgers	COCKBURN
	BBQ Rissoles 6 Pack	COCKBURN

MANUFACTURER	PRODUCT	LGA TO SAMPLE
	SAUSAGES:	
IGA	BBQ Beef Sausage	MUNDARING
	Calabrese Smoked Sausages	MUNDARING
BROME LAKE	Duck Sausages Dry Tomato	COCKBURN
FAMOUS	Steak & Ironbar Honey Sausages	COCKBURN
GIBIERS CANABEC	Rabbit & Apple Sausages	ROCKINGHAM
HARVEY PORK	Italian Sausages	ROCKINGHAM
	Pork & Leek	ROCKINGHAM
LAFLEUR	Authentic Pork & Maple Sausages	WANNEROO
	Smoked Sausages	WANNEROO
LA MAISON DU GIBIER	Chicken Fajitas Sausages	VICTORIA PARK
LA FARNANDIERE	Apple & Cheddar Sausages	JOONDALUP
	Beef Sausages	JOONDALUP
	Barbarian Smoked Cocktail Sausages	JOONDALUP
	Merquez Sausages	JOONDALUP
	Vegetable Sausages	JOONDALUP
LES PRETS A CUIRE DU BOUCHER	Sausages Mild Italian	STIRLING
	Sausages Bacon & Cheese	STIRLING
	Sausages de Toulouse	STIRLING
MCLOUGHLIN	Irish Pork Sausages	JOONDALUP
OLYMEL	Mild Toulouse Sausages	CANNING
	European Sausages Merguez	CANNING
PLANTAGENET	Free Range Beef Mustard and Onion Pork Sausage	CAMBRIDGE
	Premium Italian Pork	CAMBRIDGE
P. PRINCE	Herbal Italian Sausages	CAMBRIDGE
SCHNEIDERS	Bologna Sausages	ARMADALE
	Country Natural Smoked Cheddar	ARMADALE

MANUFACTURER	PRODUCT	LGA TO SAMPLE
WALCOVIT	Fresh Sausages (Bratwurst Veal)	VICTORIA PARK
	Fresh Sausages (Veal Spicy Italian)	VICTORIA PARK
	MINCE PRODUCTS:	
IGA	Medium Ground Mince	BELMONT
	Lean Ground Beef	BELMONT
	Pork & Beef Mince	BELMONT
COMPLIMENTS	Lean Ground Angus Natural	ARMADALE
	Organic Ground Lean Beef	ARMADALE
	BURGERS & RISSOLES:	
	Beef Burger AAA BBQ (2 PACKS)	KALAMUNDA
	Beef Burger Cheddar & Bacon Stuffed	KALAMUNDA
COMPLIMENTS	Lean Ground Angus Beef AAA Burgers	GOSNELLS
	Lean Ground Beef Patties with Vegetables	GOSNELLS

Appendix B

Raw Data

For further questions or inquiries about raw data contact LHAAC Co-ordinator Trevor Chapman:

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