

EXPLORING THE TASTE OF PLACE IN LAMB

2019-2020

Report to Toi Ohomai research committee, 27th February 2020

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Acknowledgment

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-

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Community people and organisations

Brian Yardley, Whakatane

Calum Sutherland, New World, Rotorua

Kevin Reardon, Redwood Butchery, Rotorua

Tony Eddlestone, Javaman, Whakatane

Tom Maguire, Fisherman's Wharf, Ohope

Max Mac Donald, Rotorua

Waipawa Butchery, Patangata, Hawkes Bay

Provenance, Ranfurly, Central Otago

Whenuanui Farm, Kaipara, Northland

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Toi- Ohomai Institute of Technology

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Introduction

In France, the essence of food and culture is essentially *le gout de terroir* (the taste of the earth) (Trubek, 2009). This identifies distinctive flavours of a region. In Sustainable Culinary Systems C. Michael Hall and Stefan Gössling advise that “before a *terroir* can be transformed into a tourist destination, research into the area’s resources must be carried out and a critical analysis made of the findings”. (Croce & Perri, 2010) Our intention with this piece of research is to identify whether lamb grazed in different parts of New Zealand has a different flavour for each region

We chose lamb as an identifiable iconic New Zealand food and to establish whether there is a taste differential between regions. A study conducted in South Africa has confirmed that there is a detectable sensory difference in sheep meat produced in different regions of southern Africa. (Hall N. , 2016)

In New Zealand there is an emerging national focus on regionalism and one aspect of this is represented by Eat NZ, a New Zealand food movement dedicated to connecting people to the land through food. Angela Clifford, the CEO of Eat NZ wants New Zealand to become a premium food destination. She explains the intentions of the organisation by saying “One of our major pushes is about short value-chains, i.e. not many steps between the person who has grown the food and the ‘person who is eating the food’”. “But it’s also about who we are as people, how we grow our food, how close we are to the source and our sense of manaakitanga or hospitality.” The organisation has developed a project called ‘Talking Plates’ or ‘Kai Ika’ where people are changing and experimenting with different ways and methods of the way we grow, catch and prepare our food (Clifford, 2018). The organisation therefore encourages regionalism which is the essence of the different flavours of food produced in such diverse regions that are New Zealand.

In Food Tourism around the World the authors comment that “Chefs are increasingly willing to buy directly from growers in order to find field-ripened vegetables and tree-ripened fruits that are difficult to purchasers and purveyors” (Hall, Sharples, Mitchell, Macionis, & Cambourne, 2003) . We wish to convey an ideology that “local food” has the potential to enhance the visitor experience by connecting consumers to the region and its perceived culture and heritage (Simms, 2009).

We would like to identify that regional food has its own identity and that it contributes cultural, societal and economic benefits to the community while nationally “New Zealand's worldwide reputation for award-winning produce and specialist chefs draws tourists to the source and food tourism within New Zealand is developing at a rapid rate. (Tourism New Zealand, 2019).

Aim

The aim of this research was to investigate whether there is a measurable difference of flavour and texture of lamb due to the region the animal is farmed.

This is the first of a number of studies in which the research question we eventually aim to address is:

Does New Zealand kai have its own unique regional flavour and how does that benefit tourism and regional growers?

Teaching

This gives benefits to students/ fellow chef tutors as this research aligns with the FHTSI (Faculty of Hospitality, Tourism and Service Industry) Strategic intent, supported by research, to deliver education to meet regional needs. This will enable the Faculty of Tourism, Hospitality and Service Industries (FTHSI) to better equip students with extended learning, especially within the Culinary sphere.

- To incorporate research evidence into relevant Toi Ohomai courses.
- To further advance student learning about flavour and sustainability

Relationships

The opportunity exists to build positive relationships between the FTHSI staff and industry operators as the research will be mutually beneficial to both parties and will better align with teaching practice to industry needs.

It will provide an opportunity to source directly to the supplier and further develop greater stakeholder involvement. Additionally, the students will be aware that regionalism may be identified by different tastes and flavours which is beneficial when teaching sustainability, reduced food miles and increased regional economic development.

Programme Design

The results of this research will be able to better inform the Toi Ohomai Tourism and Hospitality programmes specifically **Culinary Arts : CULI.4205** and **CULI:5103**

Methodology:

Roz and Craig undertook the research and present the findings by means of a report. Their intention was not to provide an answer, but rather to tease out the underlying practices that they have noticed in their roles as both chefs and tutors.

Research participants

The research participants for this study included Chef Tutors working for Toi Ohomai Institute of Technology, Butchers, and Restaurateurs as they were the most credible evaluators for this research.

Butchers:

We knew Brian Yardley when we were in business in Whakatane as he had supplied product to both our restaurants, and although now retired he is still well respected as a butcher and foodie. Kevin Reardon of Redwood Butchery is highly respected and I have always been impressed with the quality of meat and high level of service. Our culinary courses source meat from Calum Sutherland, New World in Rotorua. He always shows a strong interest in the culinary aspects of the courses.

Restaurateurs/ Chefs:

Two of these participants were chosen because we had association with them in the Whakatane hospitality sector. Tom Maguire owns Fisherman's Wharf, Ohope and Tony Eddlestone owns Java Man in Whakatane. Both are popular eateries. The third restaurant participant, Max MacDonald, has operated several successful resorts in Fiji.

Peers:

Toi Ohomai Institute of Technology Culinary and hospitality tutors with strong industry experience. Jason Lewis – chef tutor; Sarah Hammersley- Hospitality tutor; Reg Hawthorne- Associate Dean, FTSHI.

There were a total of three people per tasting panel. We assembled three panels.

Process

Participants on the panel were contacted first by phone and then followed up with an email to invite participation and set up panel dates. A consent form, confidentiality form and survey questions were attached to the follow up email. Hard copies were available at the time of the tastings.

- Craig communicated directly with the farmers/suppliers to get further insight into where the actual lamb was produced.
- The growers were Whenuanui Farm (Northland), Waipawa Butchery (Hawke's Bay) and Provenance (Central Otago). These areas were chosen because Northland lamb is raised on marshland, Hawke's Bay lamb is mid-country and Central Otago lamb from Provenance is raised in the high country. We aimed to select the same breed so we have consistency in the result.

Sourcing

The lamb was sourced directly from the areas chosen, at a predetermined date. This arrived mid November 2019. The areas the meat arrived from were: **Kaipara, Hawkes Bay** and **Central Otago**.

Tasting

Roz was present to explain the procedure of the tastings, a brief description of the tasting flavours and ensure that each participant had his/her own evaluation sheet. That is, the tastings were not open to group discussion.

- In order to mitigate discussion and comparison between participants, we seated participants at individual tables so that they could independently rate the taste.
- Participants were given a **template of different taste, odour and texture evaluations**. This has been sourced from studies done about distinctive meat flavours (Young, Reid, Smith, & Braggins, 1994).
- Each grid was graded 1-10 according to flavour profile. When the evaluation was completed, hopefully we identified the regional variation by the differential in the marks.
- We conducted **blind tastings of three cuts of meat** to each group on three separate occasions. This was done on one day. (27 November, 2019). Roz was on hand to serve the food and identify each cut of meat. Each participant sampled a cut of meat from each region (i.e. 9 cuts of meats) so the samples were consistent for each participant, as each cut of meat has a different texture and taste.
- The meat was identified as from region (a), (b) or (c) so the participants don't have any preconceived ideas of flavour. These were colour coded – Hawke's Bay - blue; Central Otago – yellow, and Northland- Red.
- The **cuts of meat** were rump, rack and shoulder and were cooked by the sous vide method to maintain consistency of cooking temperature and time. The meat was not seasoned.
- The cooking was by Craig and fellow senior chef tutor, Jonathan Chemis. The sous vide method was chosen as it is very easy to maintain a constant temperature and should not compromise the lamb from temperature fluctuations.
- Each cut of lamb was cooked as follows:
 - Shoulder: 5hrs @ 70°C
 - Rump: 2.75 hrs @ 56.5°C
 - Rack: 2.25 hr @ 56.5 °C
- A staff member from our institution's academic support team (Jonathan Adams from TEEL/Academic Development) was present to film/video the preparation and cooking of the meat, and presentation and tastings to the panel as further evidence of the study.

- Roz further documented the tastings with photo evidence. Video Link available <https://vimeo.com/376286495/be91b96054>
- The findings are included in this final report which were shared and discussed with the participants to confirm the veracity of the report. These findings were recorded in a quantitative manner and were analysed interpreting the results from the evaluation sheets.



Senior chef tutor, Jonathan Chemis preparing cuts for the panel, 29 November 2019

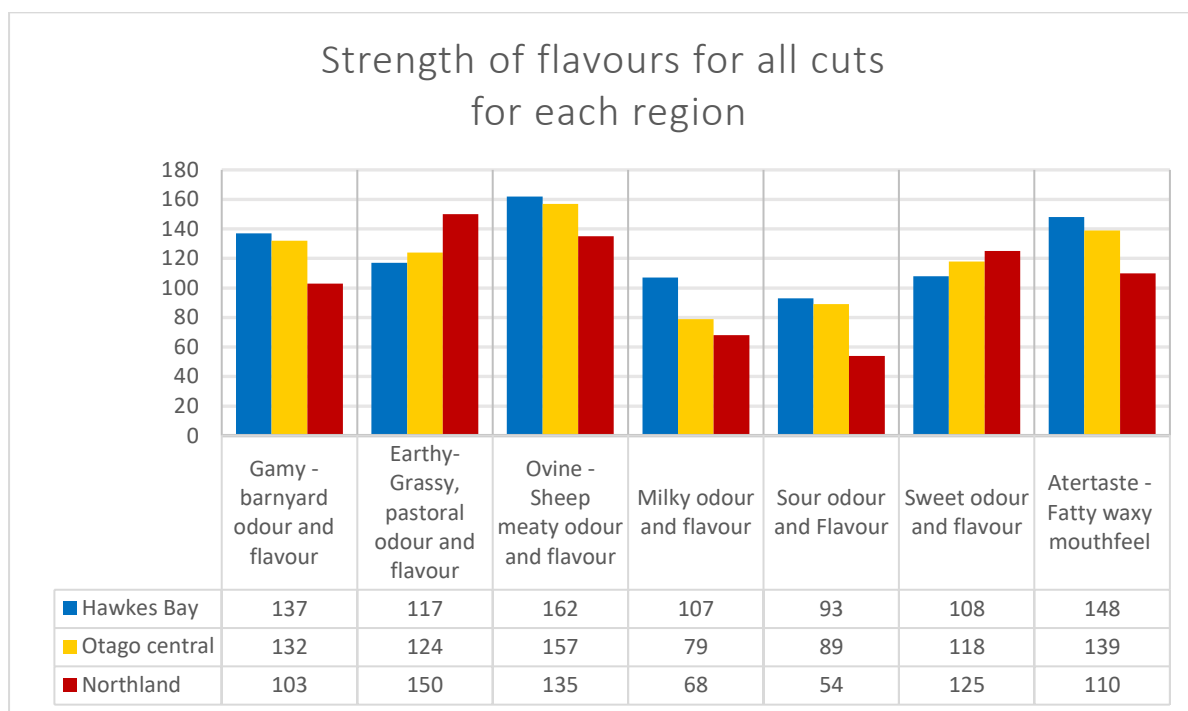


Panelists with Roz Tocker and Craig Searle, 29 November 2019

Findings

It appeared from the tastings that each region did have distinctive flavour profiles as evidenced by the tasting evaluation notes.

Results were consolidated in excel to compare and analyse. Summary reports presented here.



| | Cut sub-total | | | | | | | | | Cut sub-total | | | | | | | | | Cut sub-total | | | | | | | | | Cut total | Regional total | | | |
|---|---------------|----|---|---|---|---|---|---|---|---------------|---|----|---|---|---|---|---|---|-----------------|----|---|----|---|---|---|---|---|-----------|----------------|-----|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | | |
| Hawkes Bay | Rack | | | | | | | | | Rump | | | | | | | | | Shoulder | | | | | | | | | | | | | |
| Gamy -barnyard odour and flavour | 5 | 9 | 5 | 6 | 2 | 3 | 5 | 3 | 5 | 43 | 6 | 9 | 5 | 8 | 5 | 2 | 5 | 2 | 5 | 47 | 7 | 10 | 4 | 8 | 4 | 2 | 5 | 2 | 5 | 47 | 137 | |
| Earthy- Grassy, pastoral odour and flav | 6 | 2 | 3 | 8 | 7 | 2 | 5 | 1 | 5 | 39 | 6 | 1 | 3 | 8 | 5 | 2 | 5 | 3 | 6 | 39 | 7 | 1 | 2 | 8 | 4 | 3 | 6 | 3 | 5 | 39 | 117 | |
| Ovine - Sheep meaty odour and flavour | 6 | 10 | 8 | 8 | 5 | 1 | 6 | 4 | 4 | 52 | 8 | 7 | 8 | 9 | 5 | 2 | 7 | 4 | 4 | 54 | 7 | 9 | 7 | 9 | 4 | 2 | 8 | 4 | 6 | 56 | 162 | |
| Milky odour and flavour | 5 | 7 | 6 | 4 | 4 | 1 | 5 | 0 | 4 | 36 | 6 | 9 | 7 | 5 | 1 | 1 | 4 | 0 | 4 | 37 | 7 | 2 | 8 | 4 | 3 | 1 | 3 | 0 | 6 | 34 | 107 | |
| Sour odour and Flavour | 5 | 1 | 3 | 3 | 3 | 1 | 4 | 0 | 6 | 26 | 6 | 8 | 4 | 1 | 1 | 1 | 4 | 1 | 7 | 33 | 6 | 9 | 4 | 2 | 2 | 3 | 3 | 0 | 5 | 34 | 93 | |
| Sweet odour and flavour | 7 | 9 | 4 | 6 | 2 | 2 | 5 | 4 | 4 | 43 | 6 | 1 | 2 | 6 | 4 | 2 | 4 | 4 | 4 | 33 | 6 | 1 | 3 | 6 | 3 | 2 | 3 | 3 | 5 | 32 | 108 | |
| Atertaste - Fatty waxy mouthfeel | 8 | 10 | 6 | 7 | 2 | 2 | 6 | 3 | 6 | 50 | 6 | 10 | 5 | 8 | 2 | 2 | 5 | 3 | 7 | 48 | 7 | 10 | 6 | 8 | 3 | 5 | 5 | 2 | 4 | 50 | 148 | 872 |
| Otago central | Rack | | | | | | | | | Rump | | | | | | | | | Shoulder | | | | | | | | | | | | | |
| Gamy -barnyard odour and flavour | 4 | 6 | 7 | 8 | 3 | 6 | 3 | 5 | 5 | 47 | 5 | 7 | 7 | 6 | 4 | 6 | 3 | 2 | 3 | 43 | 5 | 8 | 2 | 8 | 2 | 6 | 1 | 3 | 7 | 42 | 132 | |
| Earthy- Grassy, pastoral odour and flav | 2 | 4 | 2 | 8 | 3 | 7 | 2 | 4 | 5 | 37 | 3 | 5 | 3 | 7 | 3 | 6 | 3 | 3 | 4 | 37 | 4 | 7 | 9 | 8 | 3 | 7 | 1 | 4 | 7 | 50 | 124 | |
| Ovine - Sheep meaty odour and flavour | 7 | 5 | 7 | 7 | 9 | 9 | 3 | 5 | 6 | 58 | 5 | 6 | 8 | 8 | 2 | 8 | 1 | 5 | 4 | 47 | 6 | 6 | 7 | 9 | 2 | 9 | 1 | 6 | 6 | 52 | 157 | |
| Milky odour and flavour | 8 | 6 | 3 | 2 | 2 | 5 | 1 | 0 | 6 | 33 | 0 | 6 | 6 | 4 | 1 | 6 | 1 | 0 | 0 | 24 | 6 | 2 | 4 | 1 | 4 | 1 | 1 | 3 | 22 | 79 | | |
| Sour odour and Flavour | 4 | 5 | 8 | 4 | 5 | 5 | 1 | 0 | 0 | 32 | 4 | 7 | 7 | 2 | 1 | 5 | 1 | 0 | 6 | 33 | 5 | 4 | 2 | 2 | 2 | 3 | 1 | 0 | 5 | 24 | 89 | |
| Sweet odour and flavour | 3 | 4 | 2 | 6 | 3 | 3 | 2 | 4 | 8 | 35 | 2 | 4 | 1 | 7 | 8 | 3 | 1 | 4 | 6 | 36 | 2 | 7 | 9 | 7 | 6 | 7 | 1 | 2 | 6 | 47 | 118 | |
| Atertaste - Fatty waxy mouth feel | 6 | 8 | 8 | 7 | 1 | 7 | 3 | 3 | 3 | 46 | 5 | 8 | 9 | 8 | 2 | 4 | 4 | 1 | 7 | 48 | 5 | 8 | 3 | 9 | 2 | 6 | 2 | 2 | 8 | 45 | 139 | 838 |
| Northland | Rack | | | | | | | | | Rump | | | | | | | | | Shoulder | | | | | | | | | | | | | |
| Gamy -barnyard odour and flavour | 5 | 1 | 2 | 8 | 1 | 4 | 1 | 1 | 4 | 27 | 5 | 8 | 2 | 8 | 2 | 6 | 1 | 2 | 3 | 34 | 7 | 3 | 3 | 7 | 4 | 7 | 1 | 3 | 7 | 42 | 103 | |
| Earthy- Grassy, pastoral odour and flav | 4 | 8 | 7 | 7 | 7 | 4 | 7 | 5 | 6 | 55 | 5 | 4 | 7 | 8 | 7 | 6 | 5 | 2 | 4 | 44 | 5 | 9 | 6 | 9 | 4 | 8 | 2 | 4 | 4 | 51 | 150 | |
| Ovine - Sheep meaty odour and flavour | 3 | 5 | 2 | 8 | 2 | 8 | 1 | 7 | 7 | 43 | 4 | 8 | 4 | 9 | 3 | 9 | 1 | 6 | 1 | 45 | 6 | 7 | 6 | 9 | 2 | 9 | 2 | 4 | 2 | 47 | 135 | |
| Milky odour and flavour | 3 | 3 | 1 | 4 | 2 | 1 | 1 | 0 | 0 | 15 | 4 | 8 | 3 | 5 | 3 | 4 | 2 | 0 | 0 | 29 | 5 | 6 | 3 | 3 | 2 | 4 | 1 | 0 | 0 | 24 | 68 | |
| Sour odour and Flavour | 3 | 1 | 2 | 4 | 1 | 4 | 1 | 0 | 1 | 17 | 3 | 1 | 2 | 2 | 2 | 5 | 1 | 0 | 2 | 18 | 5 | 1 | 1 | 2 | 1 | 5 | 1 | 0 | 3 | 19 | 54 | |
| Sweet odour and flavour | 3 | 8 | 4 | 6 | 7 | 4 | 5 | 5 | 8 | 50 | 5 | 1 | 5 | 6 | 0 | 3 | 1 | 5 | 8 | 34 | 6 | 8 | 7 | 6 | 6 | 3 | 1 | 0 | 4 | 41 | 125 | |
| Atertaste - Fatty waxy mouth feel | 3 | 1 | 3 | 7 | 5 | 6 | 2 | 2 | 7 | 36 | 3 | 9 | 4 | 1 | 4 | 3 | 2 | 8 | 34 | 9 | 6 | 8 | 3 | 5 | 3 | 2 | 4 | 40 | 110 | 745 | | |

Findings by region, all cuts:

| | |
|-------------|------------|
| Gamey | Hawkes Bay |
| Earthy | Northland |
| Ovine | Hawkes Bay |
| Milky | Hawkes Bay |
| Sour | Hawkes Bay |
| Sweet | Northland |
| Fatty, waxy | Hawkes Bay |

Strongest flavour: It appears Hawkes Bay had the strongest flavour profile. This doesn't necessarily mean the nicest flavour profile.

Sweetest flavour: Northland had the sweetest profile tastings.

Findings by individual cuts:

| | |
|----------|------------------------------|
| Rack | Hawkes Bay; Otago; Northland |
| Rump | Hawkes Bay; Otago; Northland |
| Shoulder | Hawkes Bay; Otago; Northland |

Taste comments

Transcribed verbatim from the panel handwritten taste notes.

Panelists did not know the region for any cut.

| NORTHLAND (RED) | OTAGO (YELLOW) | HAWKES BAY (BLUE) |
|--|---|---|
| <p>Shoulder – “slightly more cooked than the others but taste very similar. More connective tissue holding more flavour”. “Was expecting a fatty flavour but wasn’t really there-interesting”</p> | <p>Shoulder – “Great flavour” “Favourite for me”. “Slightly more cooked than the others but very tasty. If yellow cuts are from the same animal – the fat is what makes it good”.</p> | <p>Shoulder “leaner” “this last cut was sour in comparison to the previous cut which tasted a lot sweeter”. ‘Placed it third’ ‘Sour aftertaste’.</p> |
| <p>Rack- Waxy feel was apparent afterwards, more sweet than sour Fatty odour before tasting, but sweet. Cap quite fatty.</p> | <p>Rack- Quite fatty Appearance- quite fatty Not as superior as ‘red’ rack. Very tasty/ flavoursome however slightly chewy. Fattier but less odour than red. Much more overall flavour than red. Salty. This cut was a vastly different profile in terms of flavour.</p> | <p>Rack- Less intramuscular fat making it more bland. Extremely tender. Nice muscle structure and shape.</p> |
| <p>Rump- Dry aftertaste and definitely a stronger odour associated with lamb, possibly attributed to muscle placement. Pleasant aftertaste – not so fatty, waxy Less fatty odour</p> | <p>Rump- Nice fat cover which helped. Rump was nicer than the loin. Found it has a real mixture of flavours.</p> | <p>Rump- Very tasty. Appearance – marbled through central cut. Excellent aftertaste. Good amount of fat. Great aftertaste.</p> |
| <p>The appearance of the lamb varied in colour for all samples which may also be attributed to pasture and region</p> | | |

Each cut of meat also had different flavour profiles which we did expect.

We found that **the tasting notes were quite consistent** and that was without any discussion between the participants.

One of the participants (a butcher) **correctly identified two regions by name** as he was tasting – these were Hawke’s Bay and Central Otago. Very surprising.

Discussion

While the findings might be quite contentious in some sectors of the farming industry, **we perceive that there is a difference between the flavour profiles from different areas of New Zealand.**

We accept that this may be due to climactic dictates; pasture differences; breed variations or animal sex criteria.

Notwithstanding, there was no collusion or discussion during the tasting process and we were still able to validate from their notes that there was regional variation.

From the comments on the Taste Notes, most of the participants appeared to appreciate the taste and texture of the lamb from Central Otago, followed by Hawkes Bay and Kaipara.

This does not mean that the quality or cut was inferior in any way. It was the perception given by participants and in discussion after the tastings were complete.

It would be interesting to open these findings to industry to further identify how we can interpret the results in a more holistic way.

Conclusion

It was apparent that each region had its own flavour profile, with the strongest flavour not being the most enjoyable.

The consensus from the panels was the lamb sourced from Central Otago was the tastiest and scored highly in tenderness. Hawkes Bay rated second in flavour. The flavour of the Northland lamb was much milder than the other two.

Recommendations

Further research ideas emerged from our study. We hope to find future time to do this ourselves or inspire others to investigate whether the following factors influence taste:

1. Do different breeds give different flavour profiles?
2. Does the gender of an animal influence flavour?
3. Investigate the influence of soil and grass types on flavour.
4. How much New Zealand kai has its own unique regional flavour?
5. How does this benefit tourism and regional growers?

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Appendices

1. Consent forms

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CONSENT FORM

PARTICIPANT'S COPY

Research project: Exploring the taste of place in lamb

Name of Researchers:

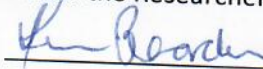
Roz Tocker and Craig Searle

Researcher Contact details:

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| Roz Tocker | (027) 473 7011 | Roz.tocker@toiohomai.ac.nz |
| Craig Searle | (027) 413 1292 | Craig.searle@toiohomai.ac.nz |

I have received an information sheet about this research project or the researcher has explained the study to me. I have had a chance to ask any questions and discuss my participation with other people. Any questions have been answered to my satisfaction.

I agree to participate in this research project and I understand that I may withdraw from it at any time. If I have any concerns about this project, I may contact the Researcher.

Participant's Name: Kevin Reardon Signature:  Date: NOV 29th

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Research project: Exploring the taste of place in lamb

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Participant's Name: MAX MACDONALD Signature: [Handwritten Signature] Date: 29/11/19

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Research project: Exploring the taste of place in lamb

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Participant's Name: R. Hawthorne Signature: [Signature] Date: 29.11.2019

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Research project: Exploring the taste of place in lamb

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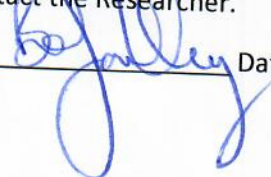
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Participant's Name: Brian Yardley Signature:  Date: 29/11/19

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Participant's Name: Jovan Lewis Signature: [Signature] Date: 29/11/2019

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Participant's Name: Sarah Mammersley Signature: [Signature] Date: 29/11/2019

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Name of Researchers:

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I agree to participate in this research project and I understand that I may withdraw from it at any time. If I have any concerns about this project, I may contact the Researcher.

Participant's Name: Tony Edeleston Signature: [Handwritten Signature] Date: 29-11-19.

TOI-OHOMAI

Institute of Technology

CONSENT FORM

PARTICIPANT'S COPY

Research project: Exploring the taste of place in lamb

Name of Researchers:

Roz Tocker and Craig Searle

Researcher Contact details:

Roz Tocker (027) 473 7011 Roz.tocker@toiohomain.ac.nz

Craig Searle (027) 413 1292 Craig.searle@toiohomain.ac.nz

I have received an information sheet about this research project or the researcher has explained the study to me. I have had a chance to ask any questions and discuss my participation with other people. Any questions have been answered to my satisfaction.

I agree to participate in this research project and I understand that I may withdraw from it at any time. If I have any concerns about this project, I may contact the Researcher.

Participant's Name: Colin Sutherland Signature: [Signature] Date: 29/11/19

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Participant's Name: TOM MAGUIRE Signature: [Signature] Date: 29/11/20

Appendices 2. Lamb Evaluation Notes – Rack

LAMB EVALUATION NOTES

SAMPLE 1- RACK

Rate in order of strength of flavour and smell

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| Gamy- barnyard odour and flavour | | | | | | | | | | |
| Earthy-Grassy, pastoral odour and flavour | | | | | | | | | | |
| Ovine- sheepmeat odour and flavour | | | | | | | | | | |
| Milky odour and flavour | | | | | | | | | | |
| Sour odour and flavour | | | | | | | | | | |
| Sweet odour and flavour | | | | | | | | | | |
| Aftertaste – fatty, waxy mouthfeel | | | | | | | | | | |

Appendices 3: Lamb Evaluation Notes – Rump

LAMB EVALUATION NOTES

SAMPLE 1- RUMP

Rate in order of strength of flavour and smell

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| Gamy- barnyard odour and flavour | | | | | | | | | | |
| Earthy-Grassy, pastoral odour and flavour | | | | | | | | | | |
| Ovine- sheepmeat odour and flavour | | | | | | | | | | |
| Milky odour and flavour | | | | | | | | | | |
| Sour odour and flavour | | | | | | | | | | |
| Sweet odour and flavour | | | | | | | | | | |
| Aftertaste – fatty, waxy mouthfeel | | | | | | | | | | |

Appendices 4: Lamb Evaluation Notes - Shoulder

LAMB EVALUATION NOTES

SAMPLE 1- SHOULDER

Rate in order of strength of flavour and smell

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| Gamy- barnyard odour and flavour | | | | | | | | | | |
| Earthy-Grassy, pastoral odour and flavour | | | | | | | | | | |
| Ovine- sheepmeat odour and flavour | | | | | | | | | | |
| Milky odour and flavour | | | | | | | | | | |
| Sour odour and flavour | | | | | | | | | | |
| Sweet odour and flavour | | | | | | | | | | |
| Aftertaste – fatty, waxy mouthfeel | | | | | | | | | | |

Appendices 5: Panelist invitations and scope

17/09/2019

Dear Michael

Thank you for time and consideration in regard to our research project. This aims to investigate whether there is a difference in the flavour and texture of New Zealand lamb due to the region the meat is produced.

In France, the essence of food and culture is formed on the foundations of '*le gout de terroir*' (the taste of the land). This led to our interest in investigating further whether a similar concept exists in Aotearoa New Zealand and have chosen lamb as it represents a large part of our culinary and rural culture.

Initially, the outcome is to define whether this is correct. Will Northland lamb that grazes on the Kaipara flats taste different to Hawkes Bay or Central Otago high country lamb?

Considerations of soil type, pasture and crops, terrain and climate will have an effect on these outcomes.

We will conduct blind tastings of three cuts of meat to a panel on three separate occasions. We hope to do the tastings on one day. Three panels will enable us to get a wider range of opinion which will make the findings more robust. We aim to have a butcher, a chef and a farmer on each panel.

The cuts of meat will be rump, rack and shoulder and will be cooked by sous vide method to maintain consistency of cooking temperature and time. The meat will not be seasoned.

Once the research is complete

- We aim to publish in Food, Culture & Society publication. (An International Journal of Multidisciplinary Research)
- Aim to present findings at ITP symposium at Toi Ohomai, 2020
- Employability Workshop for Faculty staff

Should you wish to remain anonymous throughout this research you may do so or if you would like to be recognised we will endeavour to do this in the best way for you.

Regards,



Craig Searle

17/09/2019

Dear Annabel and Duncan

Thank you for time and consideration in regard to our research project. This aims to investigate whether there is a difference in the flavour and texture of New Zealand lamb due to the region the meat is produced.

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Regards,



Craig Searle

17/09/2019

Dear Dianne

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Regards,

Craig Searle
Roz Tocker



Appendices 6: Meat sourcing

